WP-5530 Series

Bezel Free All-in-One Modular Wall-Mount POS System

User Manual

Before installing and operating the unit, please read this user manual thoroughly and retain for reference.

Ver 1.0_2015/01/05

How to Use This Manual

This manual contains information to set up and use the WP-5530. In addition, instructions are included for added hardware, software, upgrades, and optional items.

Chapter 1 An introduction to what you find in the box and an overview of product specifications, appearance, and interface.

Chapter 2 Detailed installation information for the base unit and upgrades, including the HDD, and main memory.

Chapter 3 Mounting procedures for optional devices, such as MSR, Fingerprint, I-Button, IC Card, WiFi, Bluetooth, RFID, scanner, rear mount VFD, and swing arm kit.

Chapter 4 IMB-151 and IMB-183 main board diagrams, locations of jumpers, and connectors.

Chapter 5 Installation instructions for the Intel chipset driver, video driver, touch screen tools, audio, LAN, RFID, Fingerprint, IC Card, system and OPOS drivers.

WARNING! Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

NOTE: Text set off in this manner provides important supplemental information.

Federal Communications Commission (FCC) Notice

This equipment has been tested and found to comply with the limits for a Class A 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 radiate 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 the receiver.
- Connect the equipment to 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.

NOTE: Shielded interconnect cables and shielded AC power cables must be employed with this equipment to insure compliance with pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

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Precautions

1. Please read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from the AC outlet before cleaning. Do not use liquid or spray detergent for cleaning. Use only a moistened sheet or cloth.
4. For pluggable equipment, the socket outlet should be installed near the equipment and should be easily accessible.
5. Avoid humidity and moisture.
6. Install equipment on a stable surface.
7. Do not leave this equipment running in an enclosed or non-air-circulated environment, nor store in temperatures above 60°C. Such conditions may damage the equipment.
8. Ventilation openings on the unit are for air circulation and protect the equipment from overheating. DO NOT COVER THE OPENINGS.
9. Check the voltage of the power source before connecting the equipment to the power outlet.
10. Place the power cord so that it will not be stepped on. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect the equipment from the power outlet to avoid damage.
13. Never allow any liquid into ventilation openings. This could cause fire or electrical shock.
14. Never open the equipment. For safety reasons, qualified service personnel should only open the equipment.
15. If one of the following situations may arise, get the equipment checked by qualified service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well or you cannot get it work according to the user manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of damage.

⚠ **WARNING!** Not intended for outdoor use.

⚠ **CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with same type, and discard used batteries according to manufacturer's instructions.

Contents

Chapter 1 Introduction

Features

- 15" TFT LCD with Bezel Free P-CAP Touch
- Fanless Operation with Intel® BayTrail-D Quad-core J1900 and Haswell Core i7 / i5 / i3 / Pentium Processor
- Support System Memory Up to 16GB DDRIII SDRAM on Haswell Processor (WP-5530-PD20 Only)
- Die-casting Back Cover for Better Heat Dissipation
- Stylish and Curved Design with Embedded VFD
- Provide a Seamless and Smooth Surface and Resistant to Water, Dust, Grease, and Food Build-up
- Excellent 3D Graphic Performance
- Extensive I/O Ports for Expandability
- Easy Installation for 2.5" SATA HDD
- 3 Mounting Options Available
- Device Option: MSR, RFID, iButton, Fingerprint or IC card reader
- RoHS compliant

Specifications

System Configuration	WP-5530-PD10	WP-5530-PD20
CPU	Intel® BayTrail-D quad-core J1900 2.0 GHz processor onboard	Intel® Haswell Core i7 / i5 / i3 / Pentium processor with LGA1150 CPU socket
System Chipset	SoC	Intel® H81 (Haswell)
System Memory	Maximum up to 8GB (SO-DIMM 2 x 204-pin DDRIIIL 1333/1600MHz)	Maximum up to 16GB (SO-DIMM 2 x 204-pin DDRIII 1333 / 1600MHz)
Video Memory	Supports Intel DVMT technology	
SATA Speed	SATA3 (6.0Gb/S)	
HDD Driver	1 x 2.5" SATA HDD/SSD bay	
Power Supply	60W 12V power adapter	150W 12V power adapter
OS Support	Windows 7 Pro Embedded/POSReady 7/Windows Embedded 8.1 Industry/ Linux Kernel 3.13 or above	

LCD Touch Panel	
Resolution Size	15" TFT LCD (LED backlight)/ 1024 x 768
Brightness	250cd/m^2
Touch Screen Type	Bezel free P-CAP touch(Resistive Touch is Optional)

I/O Ports	WP-5530-PD10	WP-5530-PD20
USB Ports	5 x External: 2 x USB 2.0, 2 x USB 3.0, 1 x 12V powered USB	
Serial Ports	3 x External: COM1,COM2,COM3 (D-Sub 9-pin ; 5V is default)	3 x External: COM1,COM2,COM3 (D-Sub 9-pin ; optional power with 5V/12V)
Output	1 x VGA port (D-Sub15) (max resolution is 2048x1536) 1 x HDMI 1.4a port (max resolution up to 4096x2304)	1 x VGA port (D-Sub15) (max resolution is 2048x1536) 1 x HDMI 1.4a port (max resolution up to 4096x2304) 1 x DVI-I port (max resolution is 1920x1200)
Ethernel Port	1 x RJ-45 Gigabit Ethernet(10/100/1000)	
Audio	1 x Line out, 1 x Mic-in	
Cash drawer	RJ-11(Adjustable 12V/24V, 1 connector control 2 cash drawers)	
Mounting Option		
Stand Base (default)	Counter Top Base, adjustable View Angle (tile degree is 15° ~ 90°)	
Wall Mount	Yes	
Pole Mount	Swing-arm Mounts, adjustable angle VESA	
Mechanical		
Dimensions	Metric: 193 (D) x 400 (W) x 336 (H)mm US: 5.79" (D) x 12" (W) x 10.08" (H)	
Net Gross Weight	6.3 Kg	6.6 Kg
Case Material	Aluminum die-casting and plastic housing	
Housing Color	Black, white	
Environment		
Operating Temperature	0 °C ~ 40 °C	
IP Rating	Design compliance IP65 sealed front panel with touch screen	
EMI/Safety	CE, FCC, RoHS, CCC(optional)	

Package Contents

POS System		**AC Power Cord**	
Utility and Main Board Chipset Driver CD		**Wall Mount Swing Arm Kit (optional)**	

Options

- Magnetic Stripe Reader (MSR) Module: triple track
- 2-in-1 Module (Magnetic Stripe Reader + Fingerprint Reader)
- 2-in-1 Module (Magnetic Stripe Reader + I-Button Reader)
- 2-in-1 Module (Magnetic Stripe Reader + IC Card Reader)
- 2-in-1 Module (Magnetic Stripe Reader + RFID)
- VFD Customer Display: 9 mm height, 2 lines 20 characters each (rear mount type)
- Wall Mount Swing Arm Kit
- Stand Base:Counter Top Base, adjustable View Angle
- Pole mount:Swing-arm mount, adjustable angle VESA

Base System

Before you begin, take a few moments to become familiar with the WP-5530.

Expandable Main Display

The four sides of the main display are specially designed for expandable functions and connect with one of the available internal USB ports or PS/2 for operation. Optimized for simple installation, these interfaces do not require any voltage setting adjustments.

- RFID module (USB to COM interface)
- MSR (PS/2 interface)
- I-Button (PS/2 interface)
- Fingerprint (Fingerprint for USB interface)
- MSR+I-Button (PS/2 interface)
- MSR+Fingerprint (MSR for PS/2 interface, Fingerprint for USB interface)
- MSR+ IC Card Reader (MSR for PS/2 interface, IC Card Reader for USB interface)
- MSR+ RFID (MSR for PS/2 interface, RFID for USB to COM interface)

NOTE: The Magnetic Stripe Reader module can only be installed to the right side of the front panel.

Single MSR

Optional:

- **RFID**
- **I-Button**
- **Fingerprint**
- **MSR+ RFID**
- **MSR+I-Buttom**
- **MSR+Fingerprint**
- **MSR+ IC Card Reader**

Convertible Pole-Type 2nd Display (optional)

The pole-type 2nd display is for use with the POS system to display purchase prices and change amounts to customers. It is also capable of displaying advertising messages and announcements.

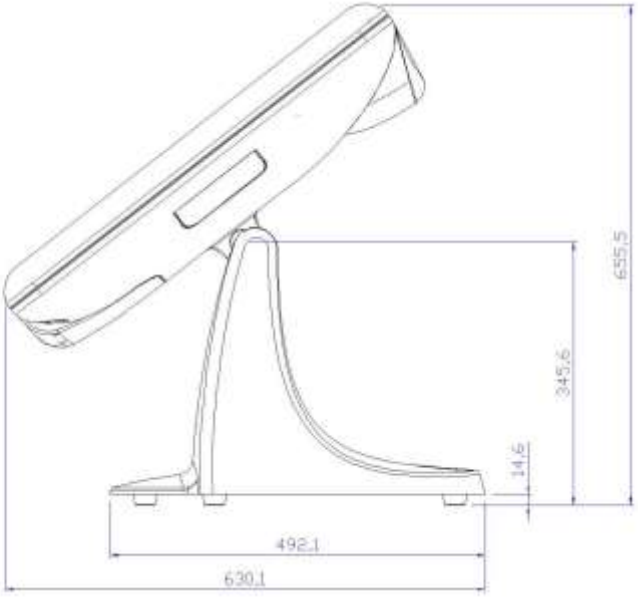
Five types of pole mount display choices are available: a 10.1” LCD monitor, a 12” LCD monitor and a 15” LCD monitor.

The pole mount is located at the rear of the base and connects with the 2nd display port for operation. Whether installing a 10.1” LCD, 12” LCD or 15” LCD, there is no need to change any settings on the main board or I/O board.

Single Pole 2nd display choices:
- **10.1” LCD**
- **12” LCD**
- **15” LCD(shown)**

Dimensions

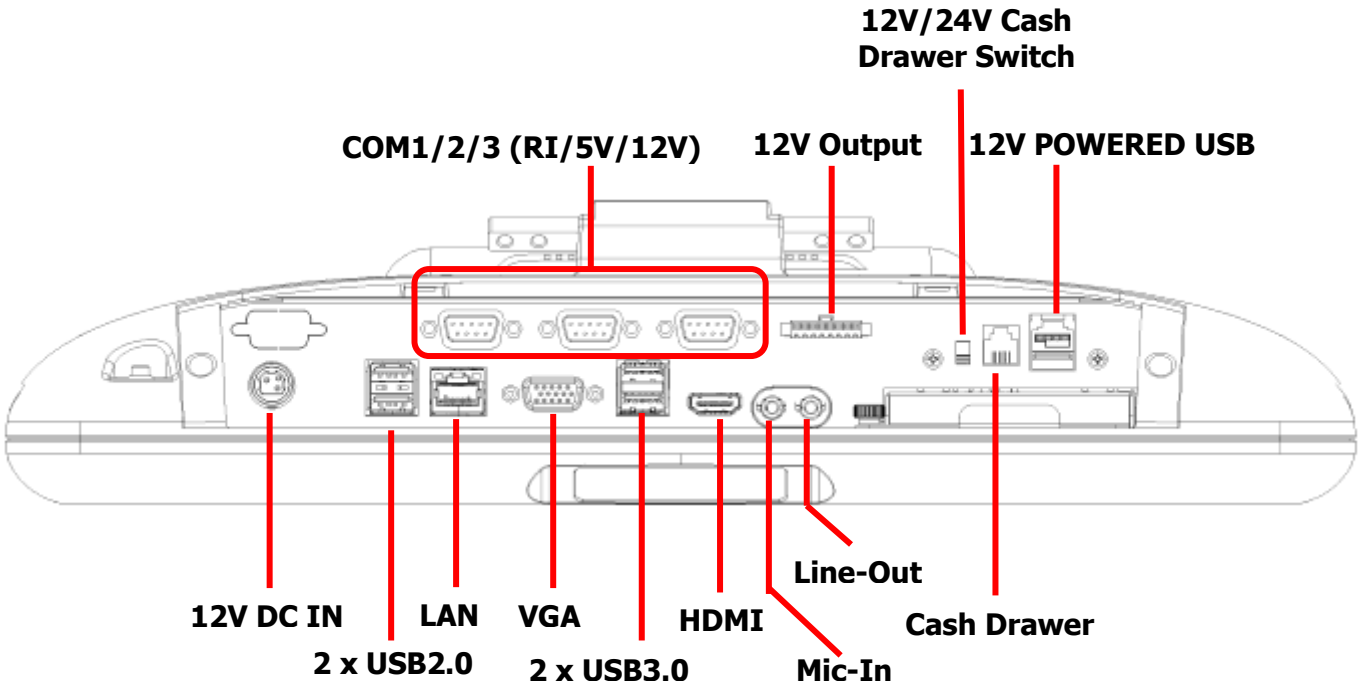
(Unit: mm)



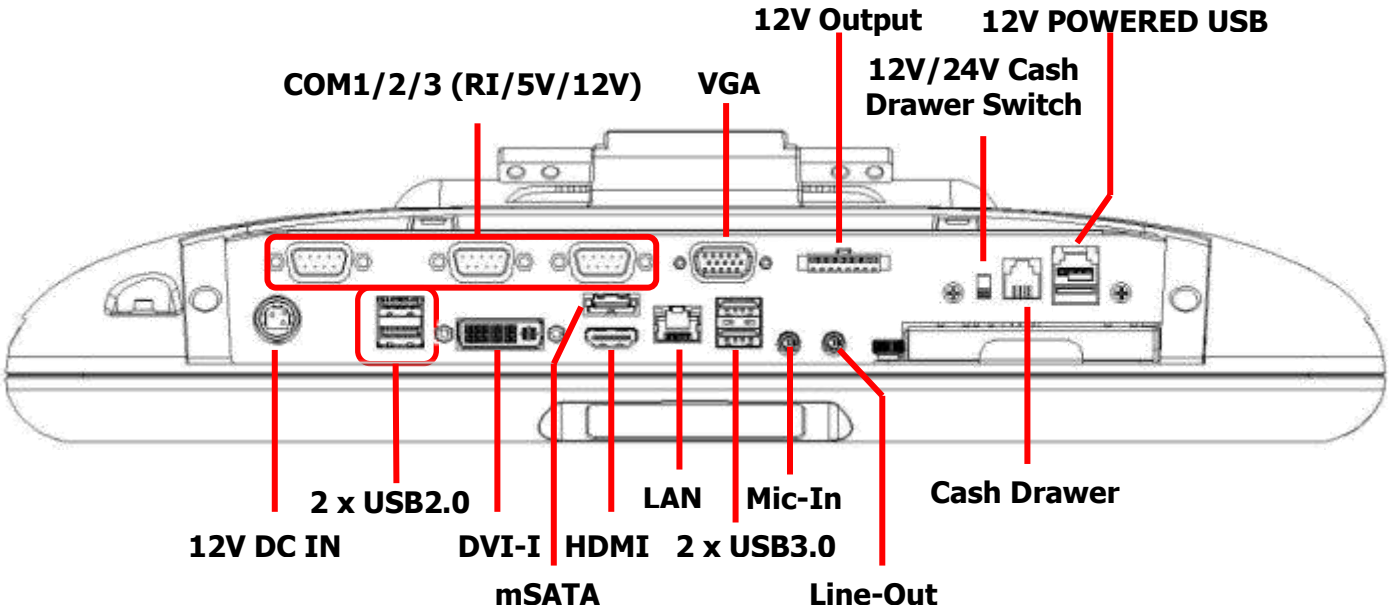
Connector Panel

The WP-5530's primary connector panel is located at the rear.

For WP-5530-XX10



For WP-5530-XX20



Chapter 2 Standard Hardware and Upgrades

Precautions

Before performing hardware changes, be sure to carefully read all of the applicable instructions, cautions, and warnings in this guide.

⚠ **WARNING!** To reduce the risk of personal injury from electrical shock, hot surfaces, or fire:

Disconnect the power cord from the wall outlet and allow the internal system components to cool before touching.

Do not plug telecommunications or telephone connectors into the network interface controller receptacles.

Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

Plug the power cord in a grounded (earthed) outlet that is easily accessible at all times.

△ **CAUTION:** Static electricity can damage the electrical components of the computer and/or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object.

When the computer is plugged into an AC power source, voltage is always applied to the main board. You must disconnect the power cord from the power source before opening the unit to prevent damage to internal components.

Opening System Box

CAUTION: To prevent loss of work and damage to the system or drive:

If you are inserting or removing a drive, shut down the operating system properly, turn off the system, and unplug the power cord. Do not remove a drive while the system is on or in standby mode.

Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

1. Turn off the system power properly through the operating system, then turn off any external devices.
2. Disconnect the power cord from the power outlet and disconnect any external devices.

WARNING! To avoid scratching the panel while dismantling the system, first place a piece of cloth or cushion on your work surface.

3. For easier access place the main LCD display upside down, then pry VFD cover open with a flat screw driver.

4. Detach the right side cover, left side cover and rear cover.

5. Unscrew six screws on the back cover of main LCD display as shown below to remove it.

6. Unscrew a screw on the HDD tray as shown below to remove it.

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Clearing CMOS

The WP-5530's configuration (CMOS) may occasionally be corrupted. If it is, it will be necessary to clear the CMOS memory using jumper CLRCMOS1. Please refer to Chapter 4 for the exact CLRCMOS1 pin positions.

1. Turn off the system power properly through the operating system, then turn off any external devices.

2. Disconnect the power cord from the power outlet and disconnect any external devices.

CAUTION: Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. The power cord must be disconnected from the power source before clearing the CMOS.

NOTE: All LEDs on the board should be OFF. Failure to ensure there is no power in the system may damage the main board. You must disconnect the power cord to avoid damage to the internal components of the system.

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3. Remove the system box and box cover.

4. Locate the JP1 jumper box on the main board IMB-151 and IMB-183.

5. Remove the jumper shunt from pins 2-3 and place over pins 1-2.

6. Wait 60 seconds to allow the CMOS to clear, then remove the jumper shunt and place it b ack in its original position over pins 1-2.

7. Replace the box cover and system box into the system.

Memory Installation

The memory sockets on the main board can be populated with up to an industry-standard DIMM. The WP-5530 comes standard with one preinstalled DIMM. To achieve maximum memory performance, up to 8GB of memory for IMB-151 or up to 16GB of memory for IMB-183can be added.

CAUTION: You must disconnect the power cord and wait approximately 30 seconds for the power to drain before adding or removing memory cards. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the system is plugged into an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or main board. If you see an LED light on the main board, voltage is still present.

The memory module sockets have gold-plated metal contacts. When upgrading the memory, it is important to use memory modules with gold-plated metal contacts to prevent corrosion and/or oxidation resulting from having incompatible metals in contact with each other.

Static electricity can damage the electronic components of the system or optional cards. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object.

When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

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1. Turn off the system power properly through the operating system, then turn off any external devices.
2. Disconnect the power cord from the power outlet and disconnect any external devices.

CAUTION: Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

WARNING! To reduce risk of personal injury from hot surfaces, allow the internal system components to cool before touching.

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3. For easier access place the main LCD display upside down, then pry VFD cover open with a flat screw driver.

4. Detach the right side cover, left side cover and rear cover.

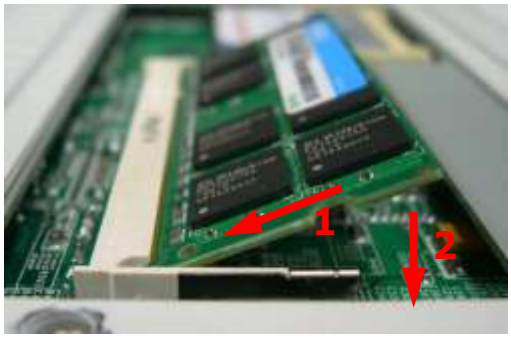
5. Unscrew six screws on the back cover of main LCD display as shown below to remove it.

6. Unscrew a thumb screw on the HDD tray as shown below to remove it.

7. If an existing memory card or cards need to be replaced, pull the ends of both metal latches away from the card to release it.

NOTE: A memory card can be installed in only one way. Match the notch on the card with the tab in the memory socket.

8. Insert the new or replacement memory card into the socket, almost covering the gold contacts completely, then push the card down. If the card is fully inserted and properly seated, the metal latches will be in the closed position indicated.



9. Replace the RAM cover, then replace the system box.

10. Reconnect the power cord and any external devices, then turn on the system. The system should automatically recognize the additional memory when powered up.

Removing and Replacing the SATA Hard Disk

NOTE: This system does not support Parallel ATA (PATA) hard drives.

Before removing the original hard drive, be sure to back up its data so that you can transfer the data to the replacement hard drive. Also, if you are replacing the primary hard drive, make sure you have a recovery disc set to restore the operating system, software drivers, and any software applications that were preinstalled on the system.

1. Turn off the system power properly through the operating system, then turn off any external devices.
2. Disconnect the power cord from the power outlet and disconnect any external devices.

CAUTION: Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

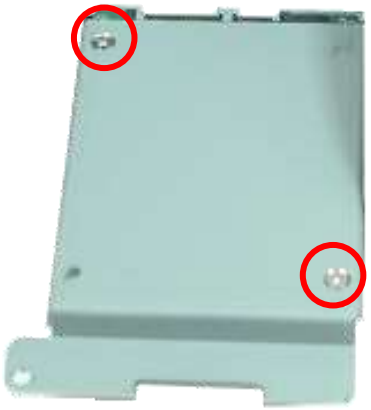
3. Detach the rear cover.

WARNING! To avoid scratching the panel during the dismantling process, first place a piece of cloth or cushion underneath.

4. Unscrew a screw on the HDD tray as shown below to remove it.

5. Slide the HDD box off the main system.

6. Unscrew two screws on the HDD tray as shown below to remove it. Next, insert the replacement hard disk into the HDD tray.



7. Slide the HDD tray back into the main system, ensuring that it is pressed all the way in and properly seated.

8. Reattach a thumb screw that secure the HDD box.

9. Reattach the cover and screws.

10. Reconnect the power cord and any external devices, then turn on the system.

NOTE: The capacity of a sector is 4096 bytes for 320GB HDD of WD. They are only suitable for Win7 or OS developed later than Win7.

Chapter 3 Optional Components and Peripherals

MSR/Fingerprint/I-Button/IC Card Module Installation

NOTE: The MSR module can only be installed to its designated position and socket; the same with the wireless module. Their locations are not interchangeable.

1. Turn off the system power properly through the operating system, then turn off any external devices.
2. Disconnect the power cord from the power outlet and disconnect any external devices.

CAUTION: Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

3. Detach the right side cover.

4. Connect MSR cable into the socket.
5. Slide the MSR into the main LCD display. Reattach the two screws that secure the MSR to the main system.

6. Reconnect the power cord and any external devices, then turn on the system.

NOTE: The MSR module configuration tool is in the included CD. If you need configure MSR module, please execute the utility according to the procedure specified in Chapter 5.

Rear Mount VFD Installation

1. Turn off the system power properly through the operating system, then turn off any external devices.

2. Disconnect the power cord from the power outlet and disconnect any external devices.

CAUTION: Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

3. Pry VFD cover open with a flat screw driver.

4. Connect VFD cable or LCD cable into the KBTR connector of VFD KBTR board and then secure the VFD module or LCD module.

5. Reconnect the power cord and any external devices, then turn on the system.

NOTE: The rear mount VFD module configuration utility is in the included CD. If you need configure VFD module, please execute the utility according to the procedure specified in Chapter 5.

Cash Drawer Installation

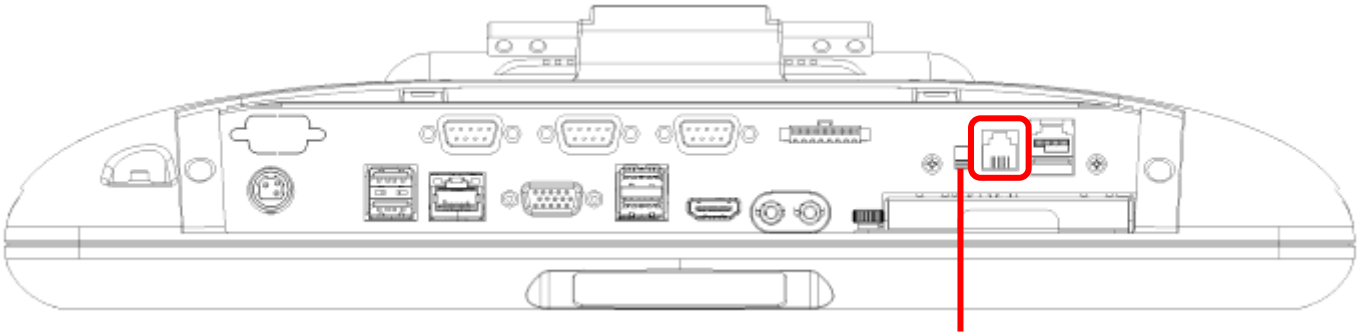
NOTE: Before connecting cash drawer to the system, please make sure the driver voltage and cable pin assignment of the cash drawer matches the definition of the system's cash drawer port.

Before installing the cash drawer to the system, please make sure the system driver has been installed.

1. Turn off the system power properly through the operating system, then turn off any external devices.
2. Disconnect the power cord from the power outlet and disconnect any external devices.

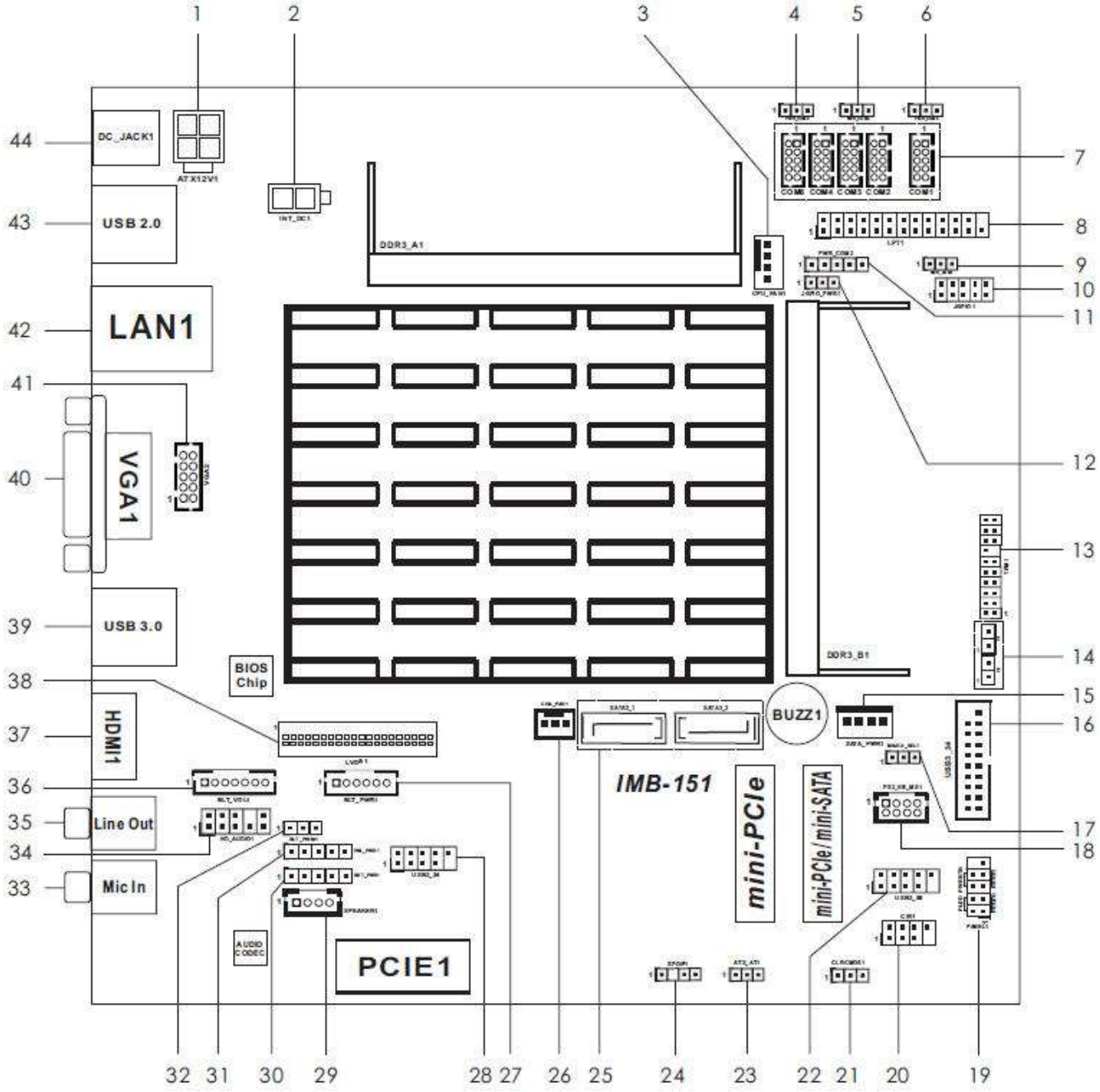
CAUTION: Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

3. Switch 12V/24V cash drawer switch according to your cash drawer's specification, and then plug the cash drawer cable into the cash drawer port.



Chapter 4 Main Board Configuration

Jumper and Connector Locations of IMB-151



Connector Allocations

Connector	Function
1	ATX Power Connector
2	2-pin UPS Module Power Input Connector
3	4-Pin CPU FAN Connector
4//5/6	PWR_COM6 / PWR_COM4 / PWR_COM3 Jumper
7	Internal COM Port Headers
8	Printer Port Header
9	PWR_COM1 Jumper
10	Digital Input / Output Pin Header
11	PWR_COM2 Jumper
12	Digital Input / Output Power Select
13	TPM Header
14	Chassis Intrusion Headers
15	SATA Power Output Connector
16	USB3.0 Connector
17	mSATA Select
18	PS2_KB_MS1
19	System Panel Header
20	CIR Header
21	Clear CMOS Header
22	USB2.0 Connectors
23	ATX/AT Mode Jumper
24	SPDIF Header
25	SATA2 Connectors
26	3-Pin Chassis FAN Connector
27	Backlight Power Connector
28	USB2.0 Connectors
29	3W Audio AMP Output Wafer
30	Backlight Power Selection
31	Panel Power Selection
32	Backlight Control Level
33	Audio Jack
34	Front Panel Audio Header
35	Audio Jack
36	Backlight Volume Control
37	HDMI Port
38	LVDS Panel Connector
39	USB3.0 Ports
40	VGA Port
41	VGA2
42	RJ45 LAN Port
43	USB2.0 Ports
44	DC Jack

Jumper Settings of IMB-151

To set jumper positions, place the jumper shunt over the pins designated in the table (SHORT) or remove (NC) it from the jumper pins and store for future use. Default settings are indicated with a star symbol (★).

ATX12V1

ATX Power Connector (Input 9V-19V)

PIN No.	Function
1-2 Short	GND
3-4 Short	DC Input ★

PWR_COM6, PWR_COM4, PWR_COM3

PWR_COM6/4/3 Jumper

PIN No.	Function
1-2 Short	5V ★
2-3 Short	12V

PWR_COM1

PWR_COM1 Jumper

PIN No.	Function
1-2 Short	5V★
2-3 Short	12V

PWR_COM2

PWR_COM2 Jumper

PIN No.	Function
1-2 Short	5V★
2-3 Short	12V
3-4 Short	12V
4-5 Short	5VSB

JGPIO_PWR1

Digital Input / Output Power Select

PIN No.	Function
1-2 Short	12V★
2-3 Short	5V

CI1

Chassis Intrusion Headers

PIN No.	Function
Open	Normal ★
Short	Active case open

CI2

Chassis Intrusion Headers

PIN No.	Function
Open	Active case open
Short	Normal ★

MSATA_SEL1

mSATA Select

PIN No.	Function
1-2 Short	SATA2_2 + mini-PCIe ★
2-3 Short	mSATA, SATA2_2 no function

CLRCOMS1

Clear CMOS Header

PIN No.	Function
1-2 Short	Normal ★
2-3 Short	Clear CMOS

ATX_AT1

ATX/AT Mode Jumper

PIN No.	Function
1-2 Short	AT Mode
2-3 Short	ATX Mode ★

BKT_PWR1

Backlight Power Selection

PIN No.	Function
1-2 Short	LCD_BLT_VCC: +5V
2-3 Short	LCD_BLT_VCC: +12V★
4-5 Short	LCD_BLT_VCC: DC_IN

PNL_PWR1

Panel Power Selection

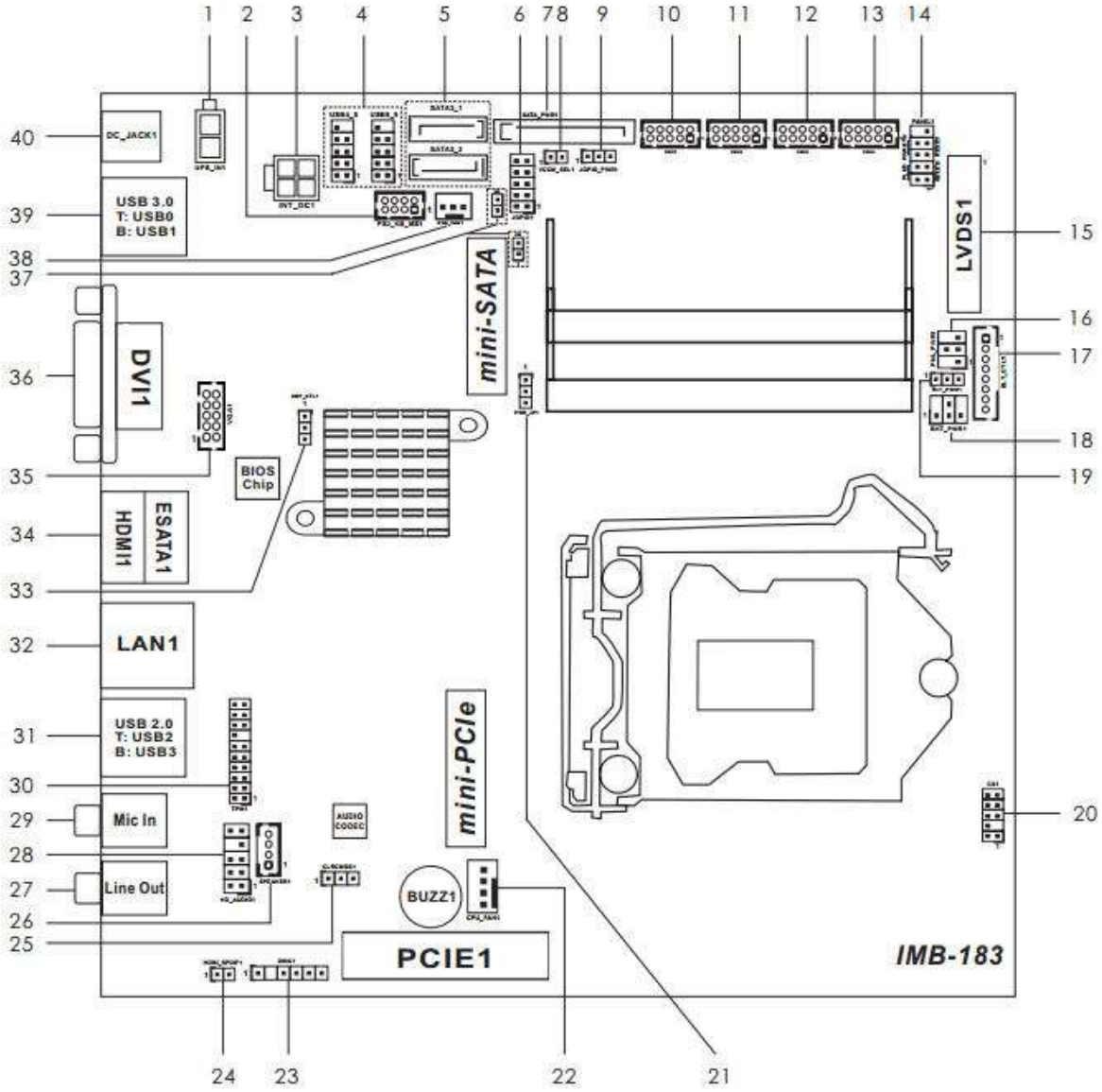
PIN No.	Function
1-2 Short	LVDD: +3V ★
2-3 Short	LVDD: +5V
4-5 Short	LVDD: 12V

BLT_PWM1

Backlight Control Level

PIN No.	Function
1-2 Short	+3V
2-3 Short	+5V★

Jumper and Connector Locations of IMB-183



Connector Allocations

Connector	Function
1	2-pin UPS Module Power Input Connector (UPS_IN1)
2	PS2 Keyboard/Mouse Header
3	4-pin ATX Power Input/Output Connector
4	USB2.0 Headers (USB4_5, USB8_9)
5	SATA3 Connectors (SATA3_1, SATA3_2)
6	Digital Input / Output Pin Header
7	SATA Power Output Connector (SATA_PWR1)
8	VCCM Power Selection
9	Digital Input / Output Power Selection
10/11/12/13	COM1, 2, 3, 4 Headers (COM1/2/3/4)
14	System Panel Header (PANEL1)
15	LVDS Panel Connector (LVDS1)
16	Panel Power Selection (PNL_PWR1)
17	BLT_CTL1
18	Backlight Power Selection (BKT_PWR1)
19	Backlight Control Level (BLT_PWM1)
20	Customer Solution Header (CS1)
21	ATX/AT Mode Selection
22	4-Pin CPU FAN Connector
23	DMIC Header
24	HDMI_SPDIF Header
25	Clear CMOS Header
26	3W Audio AMP Output Wafer
27	Audio Jack
28	Front Panel Audio Header
29	Audio Jack
30	TPM Header
31	USB2.0 Ports (USB23)
32	RJ45 LAN Port 1
33	Speaker Control
34	Top : eSATA Port (ESATA1), Bottom : HDMI Port (HDMI1)
35	VGA1
36	DVI Port (DVI1)
37	Chassis Intrusion Headers (CI1, CI2)
38	3-Pin Chassis FAN Connector (+12V)
39	USB3.0 Ports (USB01)
40	DC Jack1

Jumper Settings of IMB-183

To set jumper positions, place the jumper shunt over the pins designated in the table (SHORT) or remove (NC) it from the jumper pins and store for future use. Default settings are indicated with a star symbol (★).

VCCM_PWR1

VCCM Power Selection

PIN No.	Function
Short	1.36V
Open	Auto★

JGPIO_PWR1

Digital Input / Output Power Selection

PIN No.	Function
1-2 Short	12V ★
2-3 Short	5V

PNL_PWR1

Panel Power Selection

PIN No.	Function
1-3 Short	3.3V★
3-4 Short	12V
3-5 Short	5V

BKT_PWR1

Backlight Power Selection

PIN No.	Function
1-3 Short	5V
3-4 Short	+VIN
3-5 Short	12V ★

BLT_PWM1

Backlight Control Level

PIN No.	Function
1-2 Short	3.3V
2-3 Short	5V ★

PWR_JP1

ATX/AT Mode Selection

PIN No.	Function
1-2 Short	AT mode
2-3 Short	ATX mode ★

CLRCOMS1 Clear CMOS Header

PIN No.	Function
1-2 Short	Normal★
2-3 Short	Clear CMOS

CI1 Chassis Intrusion Headers

PIN No.	Function
Open	Single★
Short	GND

CI2 Chassis Intrusion Headers

PIN No.	Function
Open	Single
Short	GND★

Chapter 5 Software Setup

Pre-Installation Requirements

This system comes with a variety of drivers for different operating systems. A software CD is included in the package contents. The following section documents the procedures used to install the peripheral.

1. Insert sofeware CD into a system.

2. Run the setup.exe file on the CD.

3. Click **【Select Product】** to select your POS model.

4. Click **【Select System】** to select your operating system.

5. Select your POS model Number.

6. Select the peripheral driver that you want to install and then follow on-screen instructions to install your driver or refer to following procedures specifying how every driver is to be installed.

Intel Chipset Driver Installation

1. Click the Next button on the Welcome screen.

2. Click Yes on the License Agreement screen.

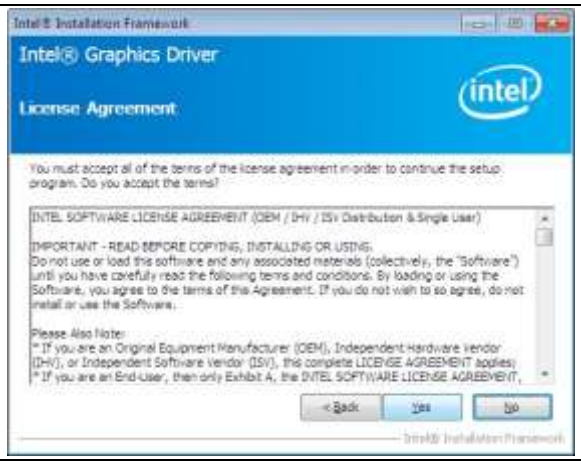
3. Click Next on the Information screen.

4. Click Next to continue.

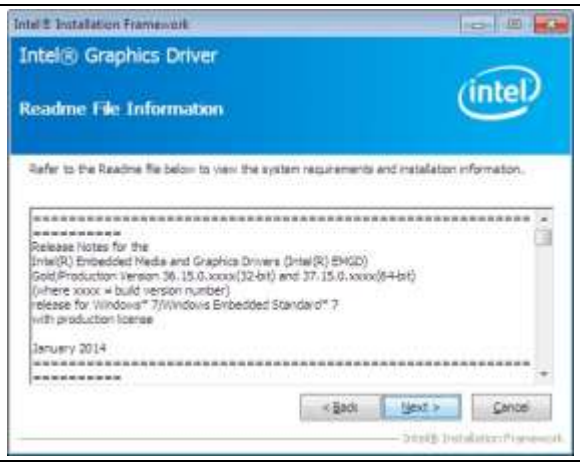
5. Select one of the options and click Finish.

Intel Graphics Driver Installation for IMB-151

1. Click Next on the Welcome screen.



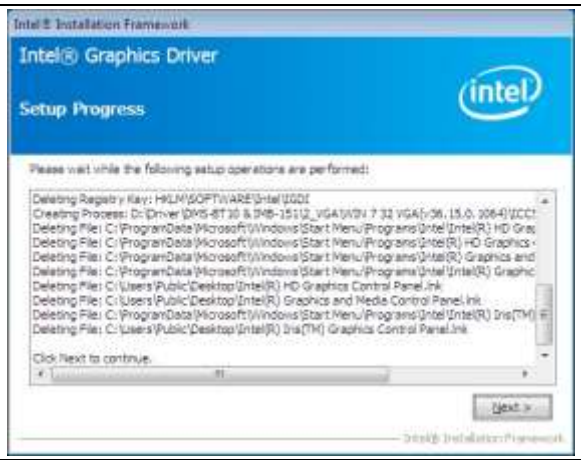
2. Click Yes on the License Agreement screen.



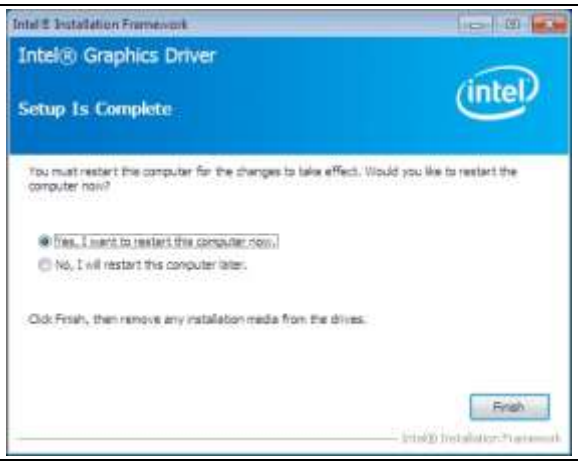
3. Click Next on the readme File Information screen.

4. Click Install.

5. Click Install.



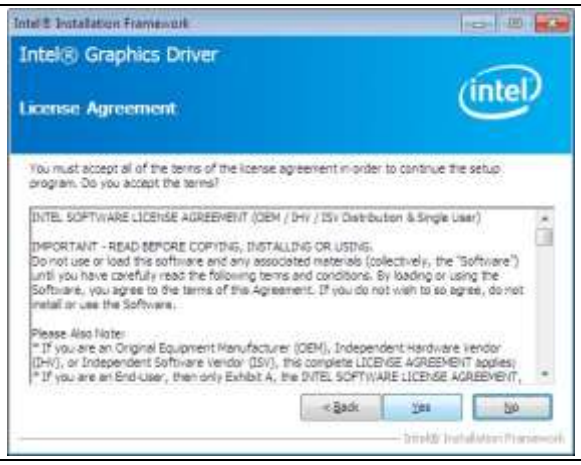
6. Click Next.



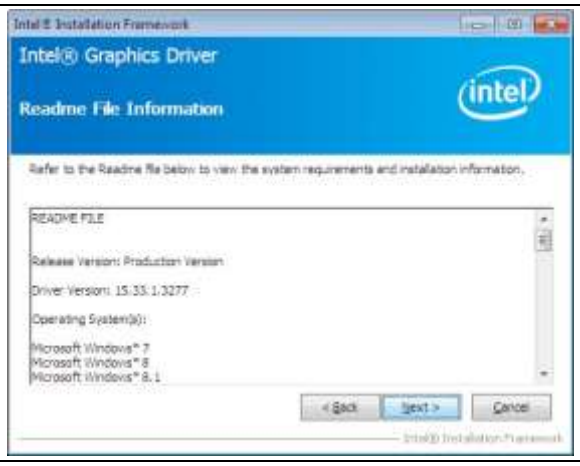
7. Select one of the options and click Finish.

Intel Graphics Driver Installation for IMB-183

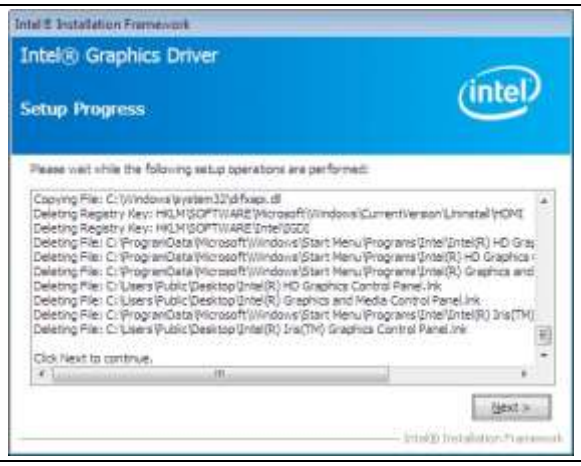
1. Click Next on the Welcome screen.



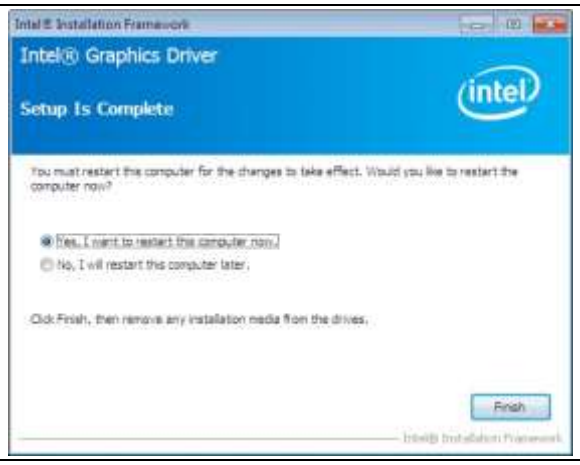
2. Click Yes on the License Agreement screen.



3. Click Next on the readme File Information screen.



4. Click Next.

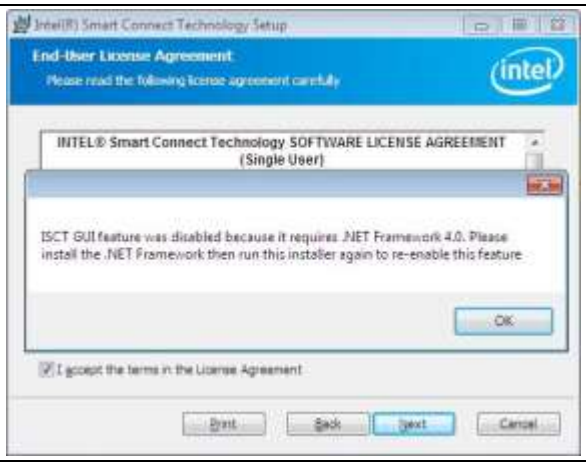


5. Select one of the options and click Finish.

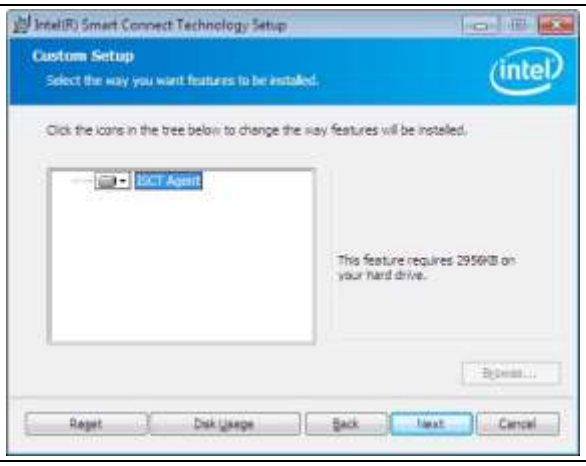
Smart Connect Driver Installation For IMB-183

1. Click Next on the Welcome screen.

2. Click Next on the License Agreement screen.



3. Click OK.



4. Click Next.

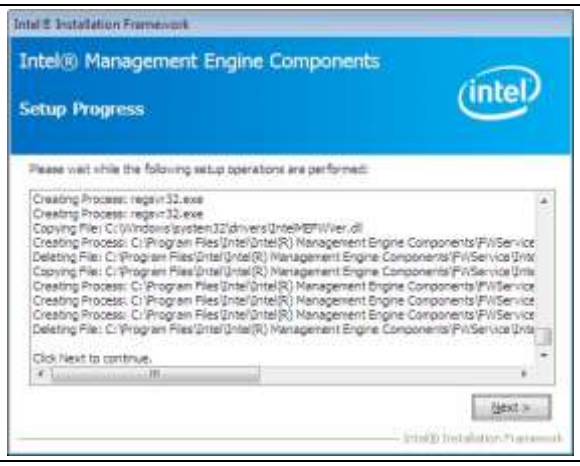
5. Click Install to begin the installation.

6. Click the Finish to exit the Setup Wizard.

Management Engine Driver Installation For IMB-183

1. Click Next on the Welcome screen.

2. Click Yes on the License Agreement screen.

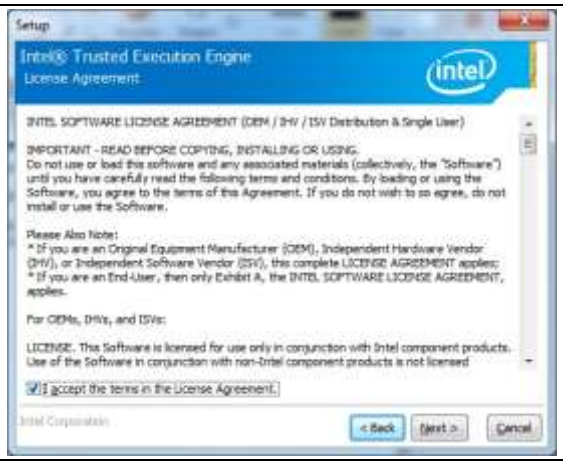


3. Click Next.

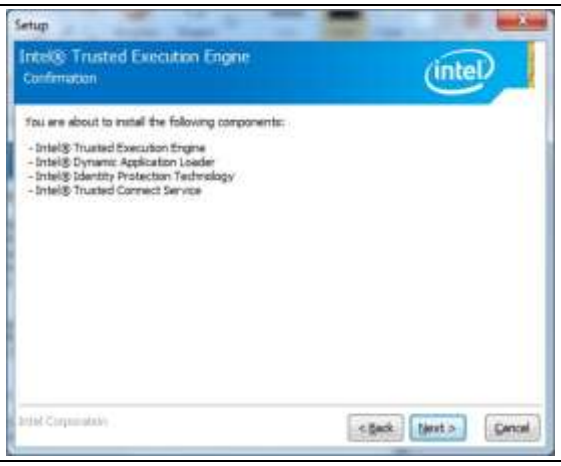
4. Select one of the options and click Finish..

TXE Driver Installation

1. Click Next on the Welcome screen.

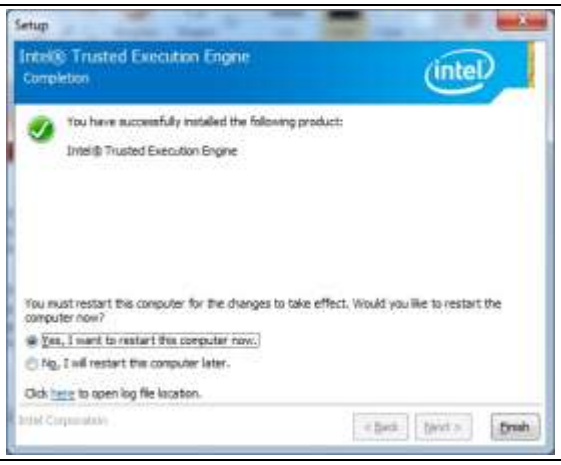


2. Click Next on the License Agreement screen.



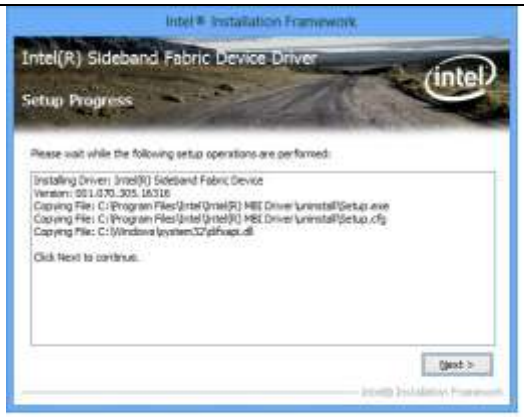
3. Click Next on the Information screen.

4. Click Install to install device software.

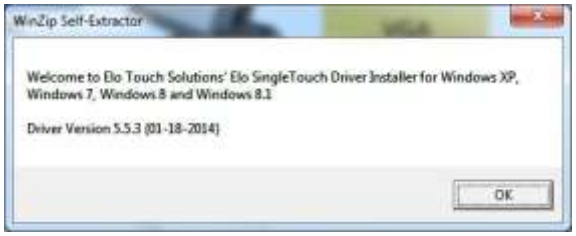


5. Click Finish.

Win8 BMI Driver Installation for IMB-151

<table>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>1. Click Next on the Welcome screen.</td><td>2. Click Yes on the License Agreement screen.</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>3. Click Next to continue.</td><td>4. Select one option and click Finish.</td></tr>
</table>

ELO Touch Screen Driver Installation



1. Click OK on the Welcome screen.

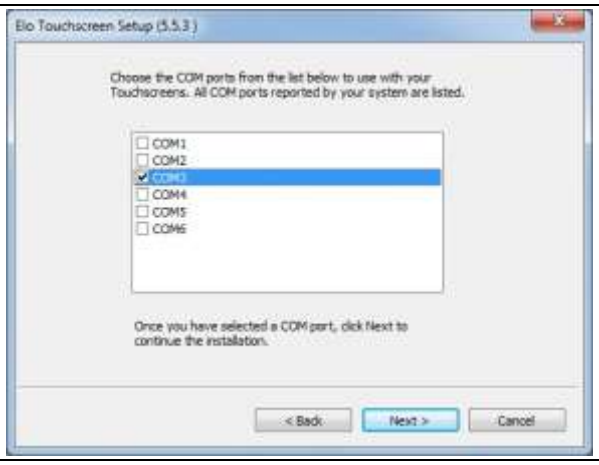
2. Click Unzip on the WinZip Self-Extractor screen.

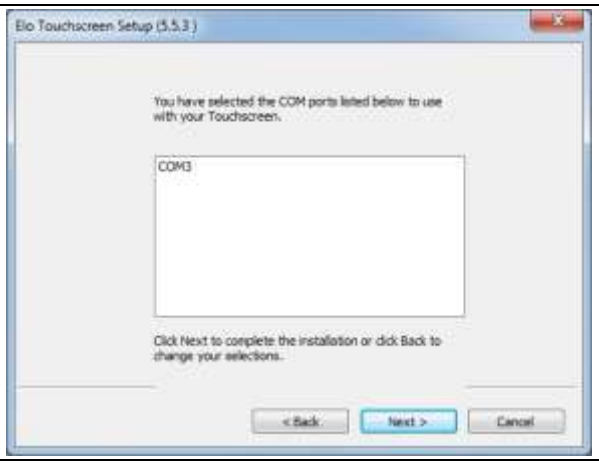
3. Select language, click Next.

4. Click Next on welcome screen.

5. Click Yes on the License Agreement screen.

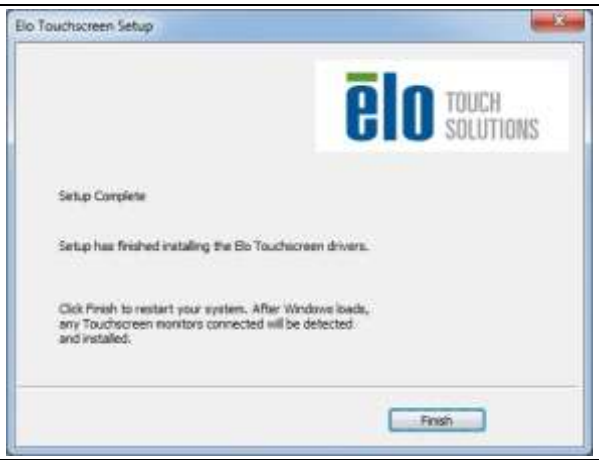
6. Select Auto-detect Elo Touchscreens, click Next.





7. Select COM3, click Next.

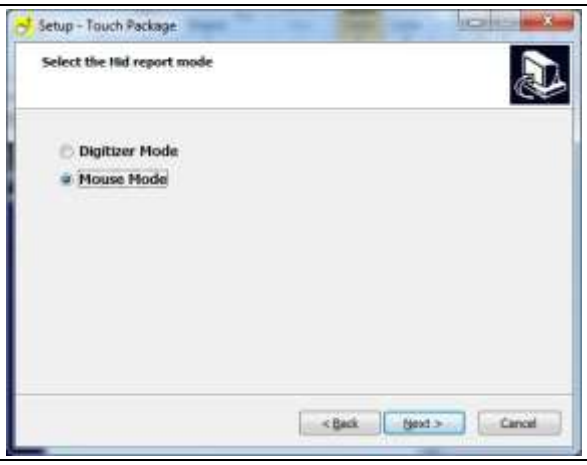
8. Click Next to confirm COM port selection.



9. Click Finish.

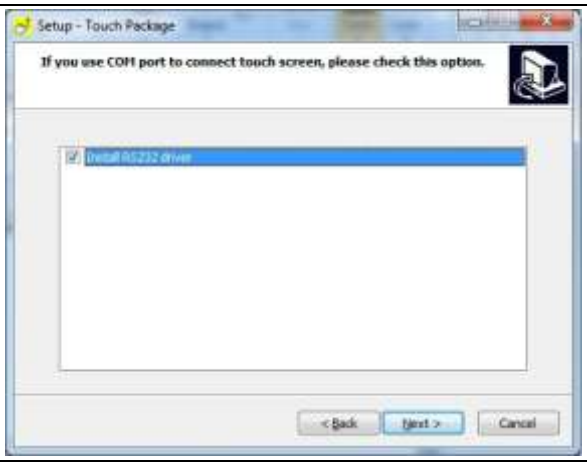
Abon Touch Screen Driver Installation

1. Click Next on the Welcome screen.



2. Select the hid report mode, then click Next.

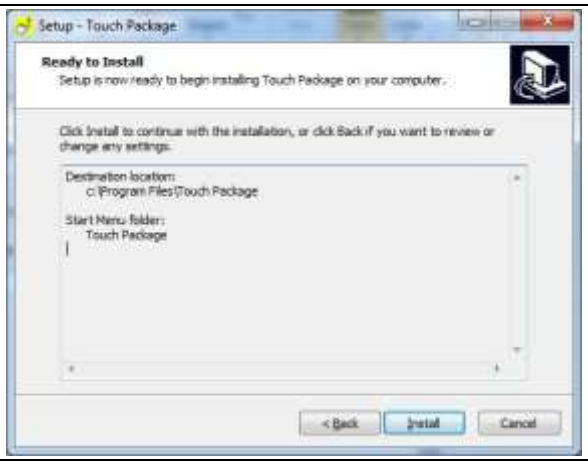
3. Check this option and click Next.



4. Check this option and click Next.

5. Select destination Location and then click Next.

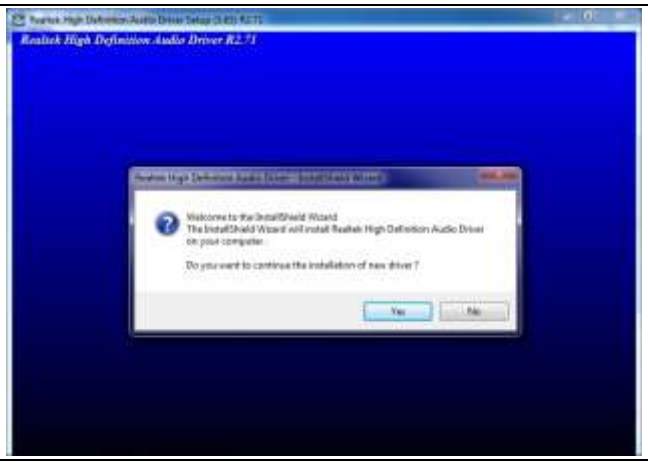
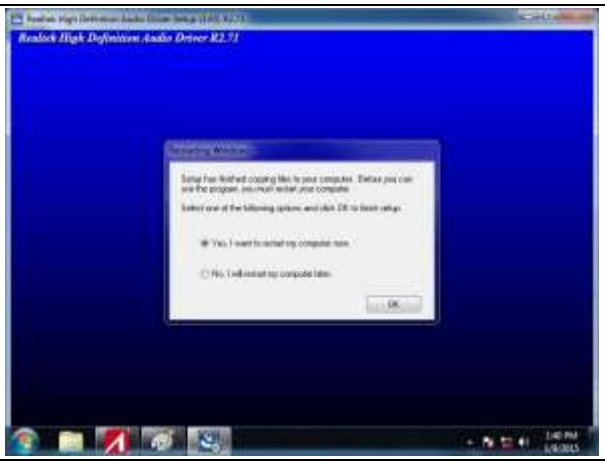
6. Select start menu folde and then click Next.

	
7. Click Install to continue with the installlation.	8. Click Install to install this device software.
	
9. Click Yes to restart the computer now.	

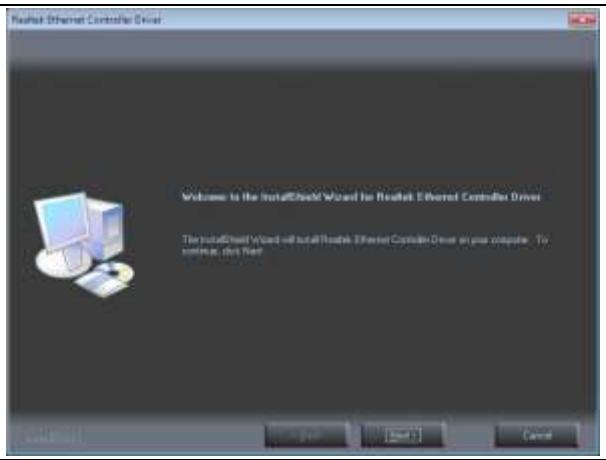
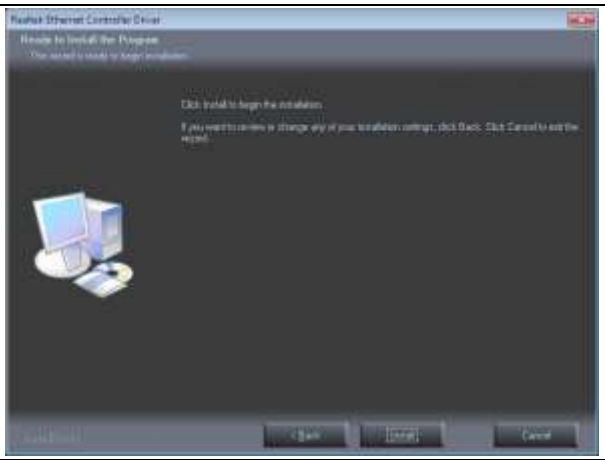
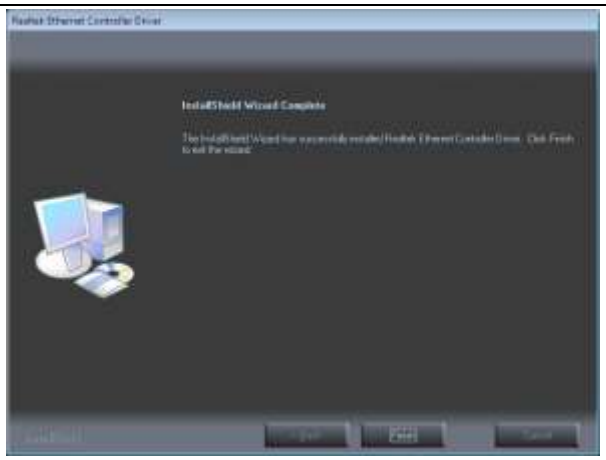
TPK Touch Screen Driver Installation

<table>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>1. Click Next on the Welcome screen.</td><td>2. Select a destination folder, then click Next.</td></tr>
<tr><td> 
</td><td></td></tr>
<tr><td>3. Check Finish.</td><td></td></tr>
</table>

Audio Driver Installation

	
1. Click Yes on the Welcome screen.	2. Select one of the options and click OK to finish setup.

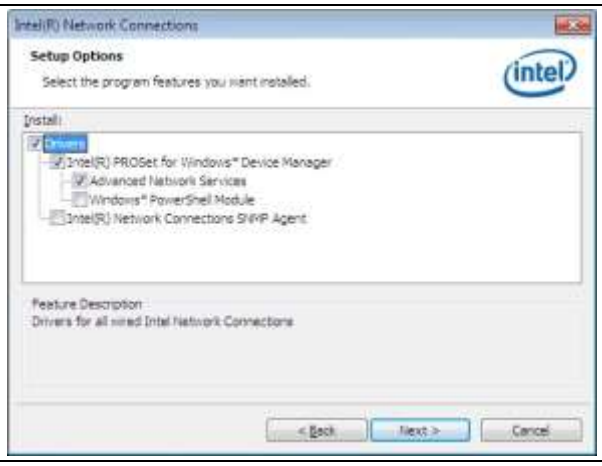
Ethernet Driver Installation For IMB-151

	
1. Click Next on the Welcome screen.	2. Click Install to begin the installation.
	
3. Click Finish.	

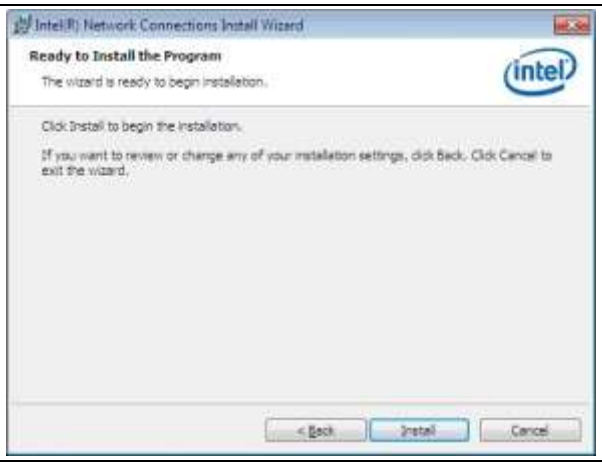
Ethernet Driver Installation For IMB-183

1. Click Next on the Welcome screen.

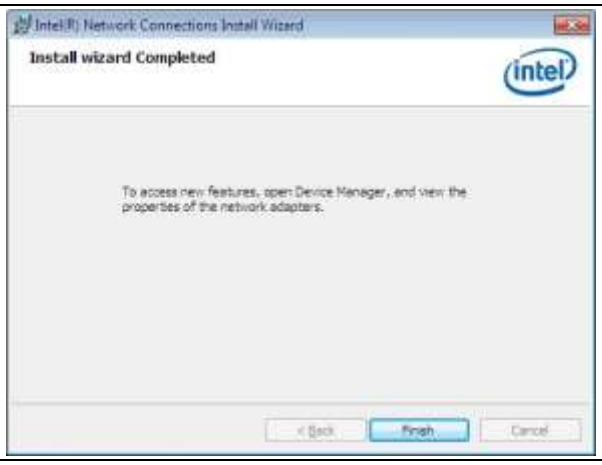
2. Select one of the options and click Next on the Agreement screen.



3. Click Next.



4. Click Install to begin installation.



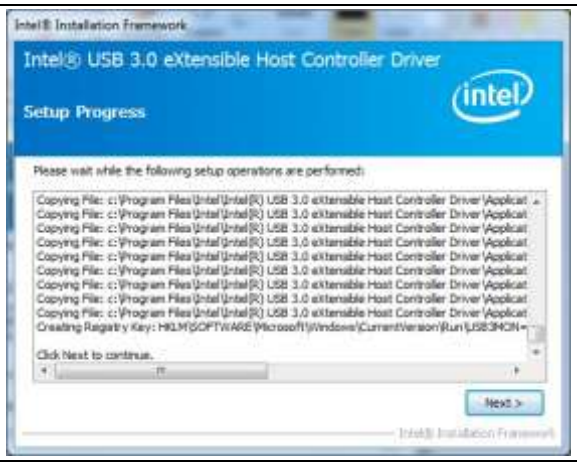
5. Click Finish.

USB3.0 Driver Installation

1. Click Next on the Welcome screen.

2. Click Yes on the Agreement screen.

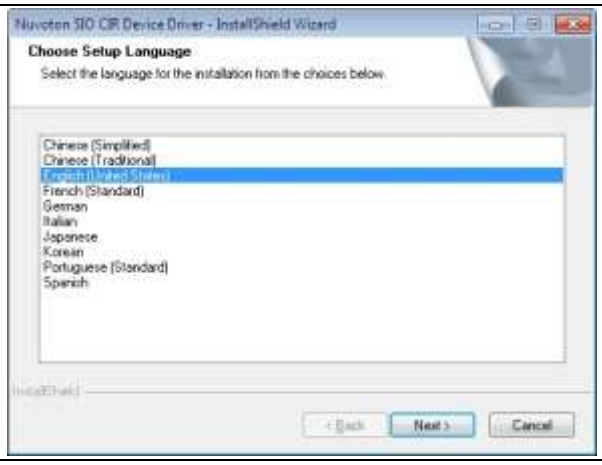
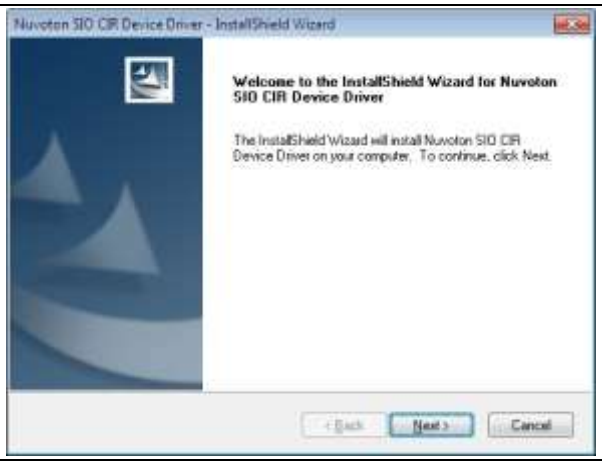
3. Click Next.



4. Click Next.

5. Select one of the options and Click Finish.

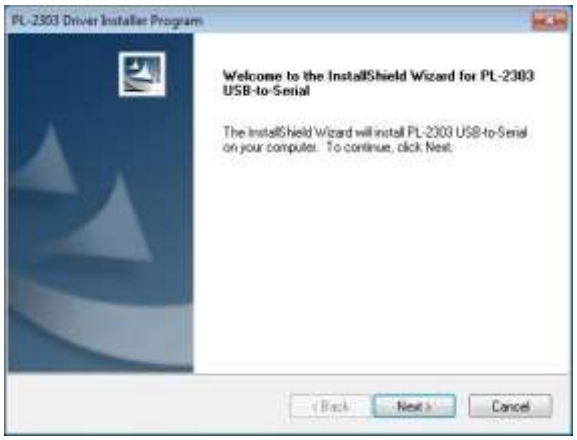
CIR Device Driver Installation for IMB-151

<table>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>1. Choose Setup Language and click Next.</td><td>2. Click Next on the Welcome screen.</td></tr>
<tr><td> 
</td><td></td></tr>
<tr><td>3. Click Finish.</td><td></td></tr>
</table>

Rear Mount VFD USB-to-Serial Driver Installation (optional)

The WP-5530 VFD port is a USB interface. The 9mm VFD uses a Serial interface, so in order to enable it, you must install the included USB-to-Serial interface driver.

1. First, plug in the VFD Module.
2. Enter the **USB To COM Driver** folder and then run utility program PL2303_Prolific_driverInstaller_v130.



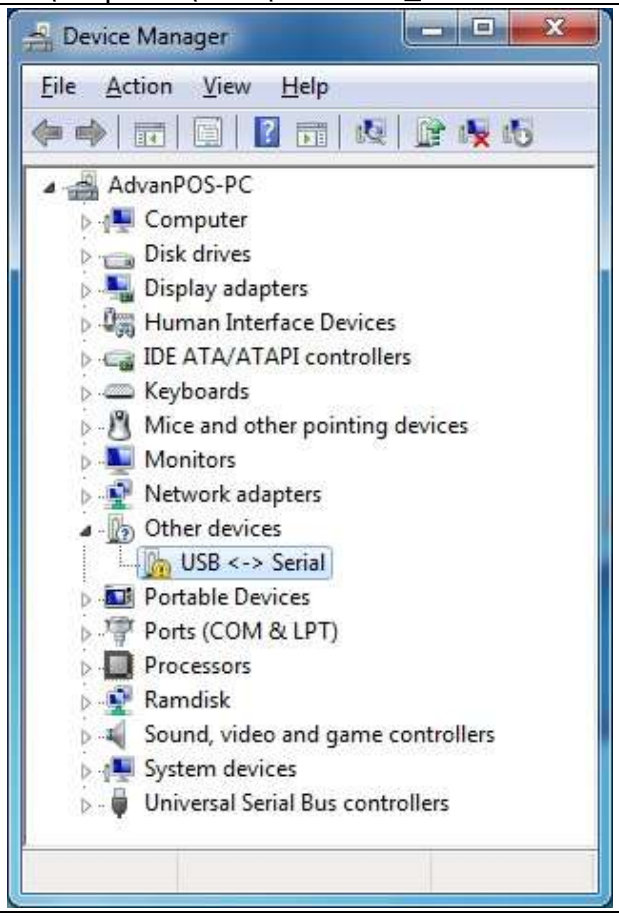
3. Click Next on the Welcome screen.

4. Wait as the driver is installed.

5. Click Finish.

RFID Driver Installation (optional)

1. First, plug in the RFID Module.
2. Driver Path.
   X:\Peripheral\RFID\Windows 7_32Bit XP driver
   X:\Peripheral\RFID\Windows7_64Bit Driver

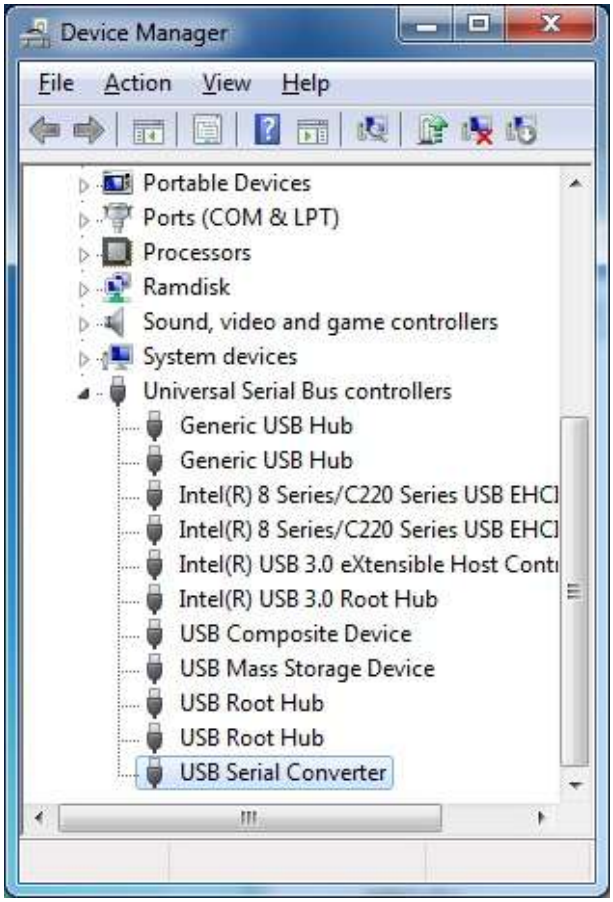


3. Device Manager (Install USB Serial converter)

4. Update device software.

5. Select driver path.

6. Driver installation has successful. Click Close.

<table>
<tr>
<td> 
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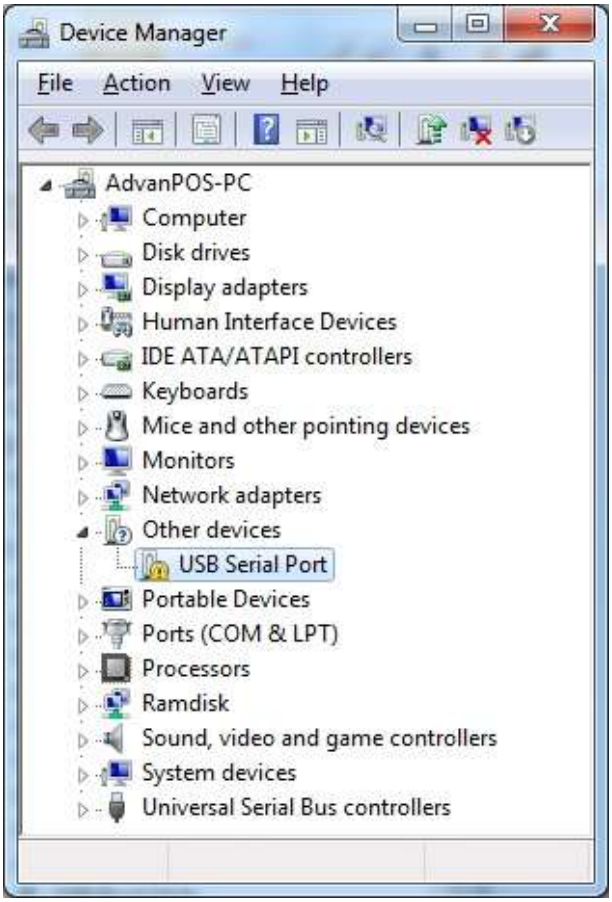
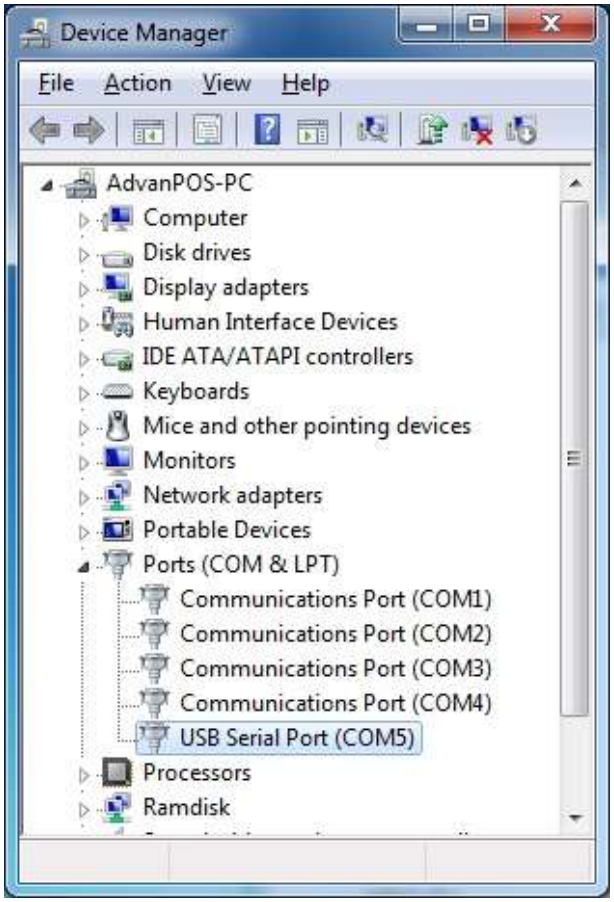
<td> 
</td>
</tr>
<tr>
<td>7. Fullfill Device Manager.</td>
<td>8. Install USB Serial Port.</td>
</tr>
<tr>
<td> 
</td>
<td> 
</td>
</tr>
<tr>
<td>9. Update Device Software.</td>
<td>10. Select Driver Path.</td>
</tr>
</table>

	
11. Driver installation has successful. Click Close.	12. Update Device Software.

MSR Driver Installation (optional)

1. Plug in MSR module.

2. Select your MSR interface PS2 or USB.

3. For PS2 interface: Run the MSRfgSetup_V1_4R7_PSW00025.exe.
   For USB interface: Enter the **Software** folder and then run the HISD_MSR_PSW00003.exe.

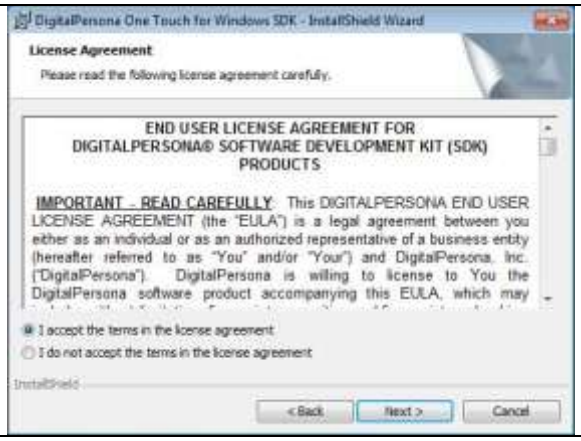
4. Follow on-screen instructions to install your MSR driver.

NOTE: MSR with PS2 interface don't support 64 Bits OS.

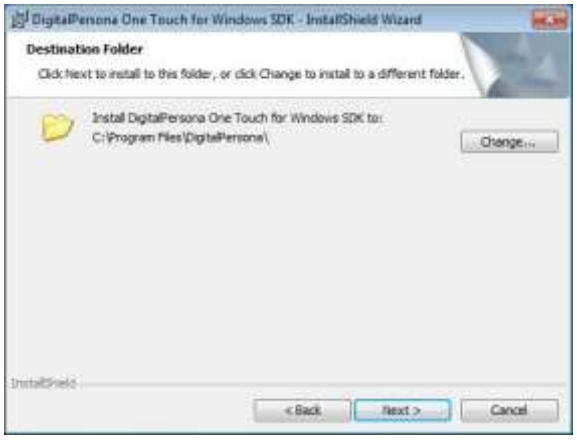
Fingerprint Reader Driver Installation (optional)

1. Plug in the 2-in-1 Fingerprint Reader and MSR module.
2. Enter the **SDK** folder and then run the setup.exe.

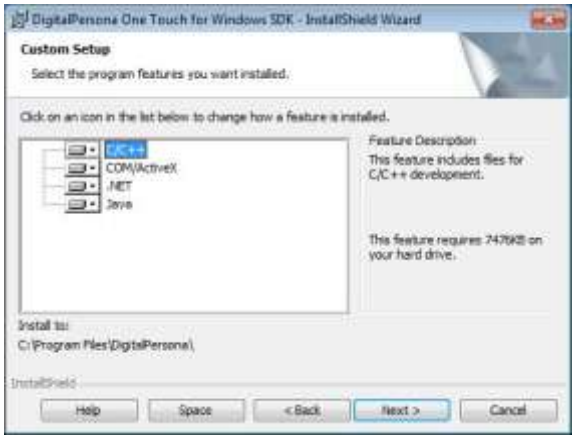
3. Click Next on the Welcome screen.



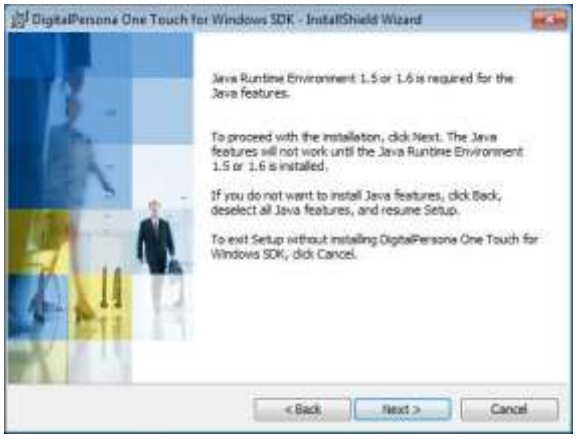
4. Click Next on the License Agreement screen.



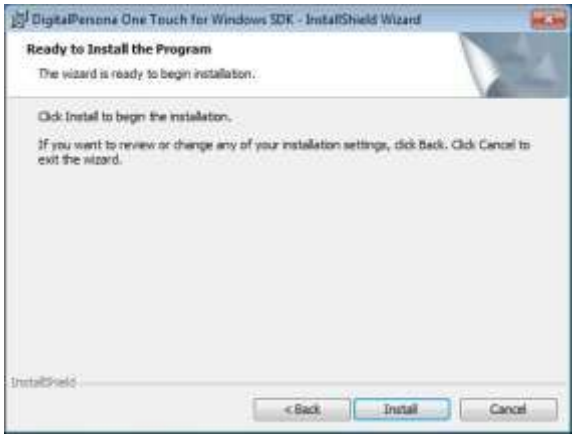
5. Click Next to accept the destination folder.



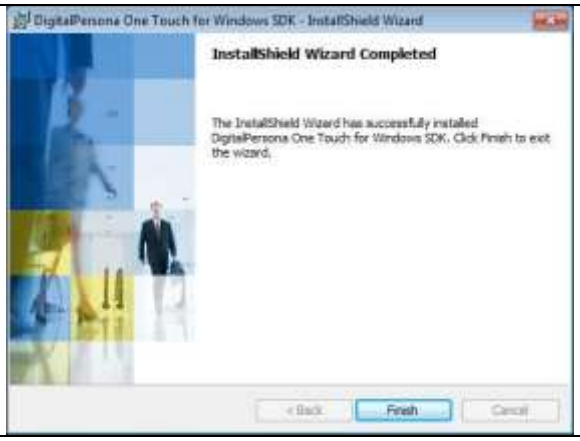
6. Click Next to begin installation.



7. To proceed with the installation, click Next.



8. Click Install to begin the installation.

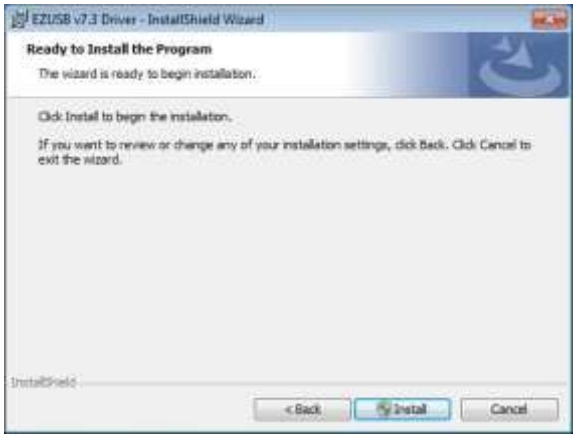
	
9. Wait as the driver is installed.	10. Click Finish.
	
11. Click Yes to restart the system (required).	

IC Card Reader Driver Installation (optional)

1. Plug in the 3-in-1 MSR/I-Button/IC Card Reader module.
2. Enter the **EZ100PU Driver** folder.
3. Select your POS operating system and then run the setup.exe.

4. Select language, click OK.

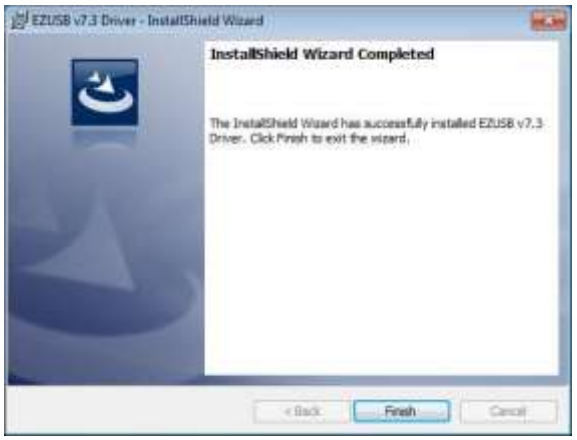
5. Click Next on the Welcome screen.



6. Click Install to begin the installation.

7. Wait as the driver is installed.

8. Click OK on the Note screen.



9. Click Finish.

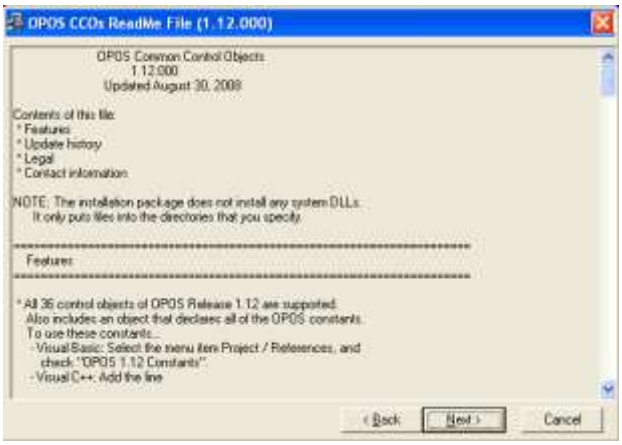
System Driver Installation

<table>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>1. Click Next on the Welcome screen.</td><td>2. Click Install on the Ready to Install screen.</td></tr>
<tr><td> 
</td><td></td></tr>
<tr><td>3. Click Finish on the Completing installation screen. A system restart is required to complete the installation.</td><td></td></tr>
</table>

OPOS CCO Driver Installation

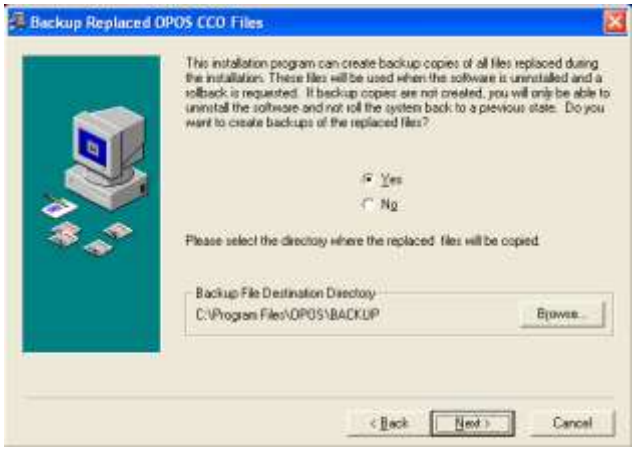
The OPOS driver for the WP-5530 supports the MSR, I-Button (KeyLock), RFID, VFD (Line-Display) and Scanner. Before installing the OPOS driver, please make sure the System Driver has been installed.

1. Click Next on the Welcome screen.

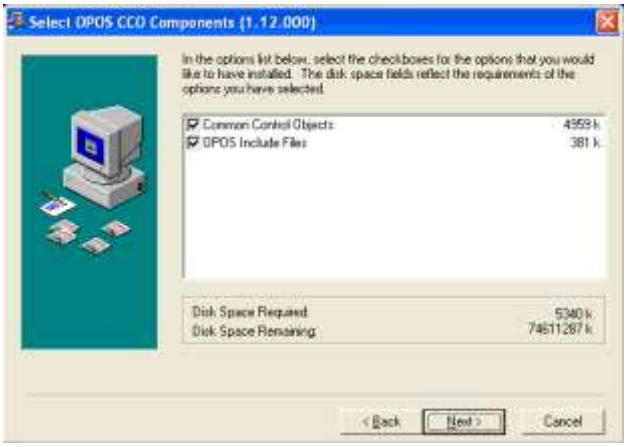


2. Click Next on the ReadMe screen.

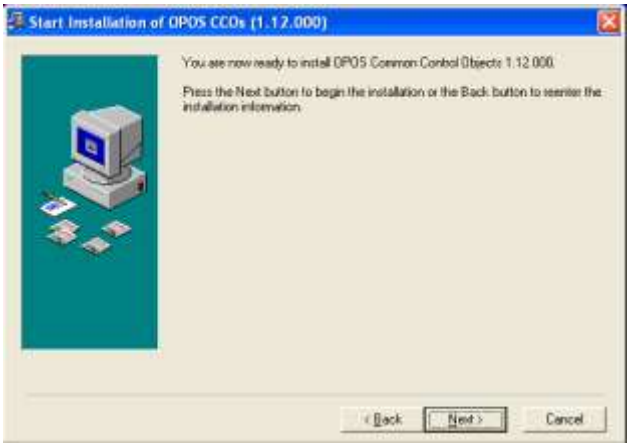
3. Select the Destination Location and click Next.



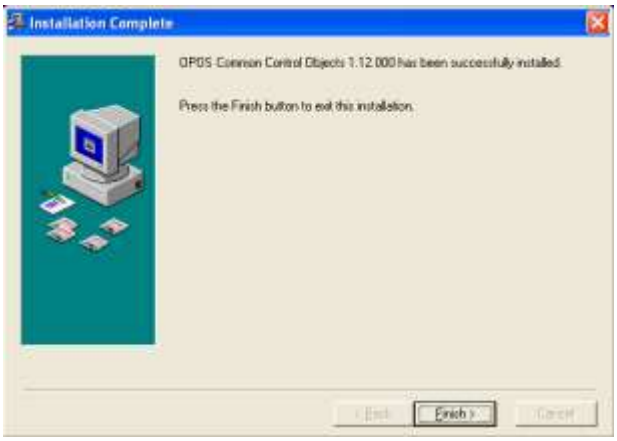
4. Click Yes to backup the CCO files and select backup file destination directory, then click Next.



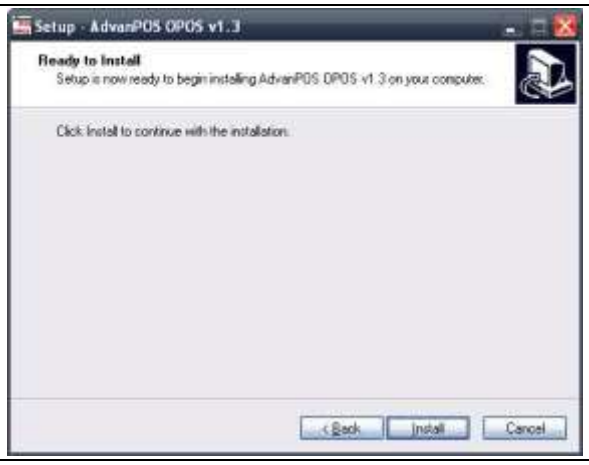
5. Select Common Control Objects and OPOS Include Files, then Click Next.



6. Click Next on the Start Installation screen.

	
7. Click Finish on the Installation Complete screen.	

OPOS Driver Installation

<table>
<tr>
<td> 
</td>
<td> 
</td>
</tr>
<tr>
<td>1. Click Next on the Welcome screen.</td>
<td>2. Click Install on the Setup screen.</td>
</tr>
<tr>
<td> 
</td>
<td></td>
</tr>
<tr>
<td>3. Click Finish on the Completing installation screen.</td>
<td></td>
</tr>
</table>

Appendix A. Sample C++ Cash Drawer Code for Windows

NOTE: Requires installation of System Driver. Refer to the System Driver Installation section for instructions.

```
//1. Open Cash Drawer
// IOCTL Codes
#define GPD_TYPE 40000
#define ADV_OPEN_CTL_CODE                CTL_CODE(GPD_TYPE, 0x900, METHOD_BUFFERED,
FILE_ANY_ACCESS)
#define ADV_STATUS_CTL_CODE              CTL_CODE(GPD_TYPE, 0x901, METHOD_BUFFERED,
FILE_ANY_ACCESS)

void OpenDrawer(UCHAR uWhichDrawer)
{
// uWhichDrawer = 1 => CD#1, uWhichDrawer = 2 => CD#2
HANDLE hFile;
BOOL bRet;
UCHAR uDrawer = uWhichDrawer;
// Open the driver
hFile = CreateFile("\\\\.\\ADVSYS",GENERIC_WRITE | GENERIC_READ,FILE_SHARE_READ |
FILE_SHARE_WRITE, NULL,OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0);
if (m_hFile == INVALID_HANDLE_VALUE)
{
AfxMessageBox("Unable to open Cash Drawer Device Driver!");
return;
}
// Turn on the Cash Drawer Output (Fire the required solenoid)
bRet = DeviceIoControl(hFile, ADV_OPEN_CTL_CODE, &uDrawer, sizeof(uDrawer), NULL, 0, &ulBytesReturned,
NULL);
if (bRet == FALSE || ulBytesReturned != 1)
{
AfxMessageBox("Failed to write to cash drawer driver");
CloseHandle(hFile);
return;
}
CloseHandle(hFile);
}

//2. Get Cash Drawer Status
void GetDrawerState()
{
HANDLE hFile;
BOOL bRet;
// Open the driver
hFile = CreateFile(TEXT("\\\\.\\ADVSYS"),GENERIC_WRITE | GENERIC_READ,FILE_SHARE_READ |
FILE_SHARE_WRITE, NULL,OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0);
if (m_hFile == INVALID_HANDLE_VALUE)
{
AfxMessageBox("Unable to open Cash Drawer Device Driver!");
return;
}
// Read the CD status
```

```
bRet = DeviceIoControl(hFile, ADV_STATUS_CTL_CODE, NULL, 0, &ReadByte, sizeof(ReadByte),
&ulBytesReturned, NULL);
if (bRet == FALSE || ulBytesReturned != 1)
{
AfxMessageBox("Failed to Read from cash drawer driver");
CloseHandle(hFile);
return;
}
else
{
AfxMessageBox(ReadByte ? “Drawer Open”: “Drawer Closed”);
}
CloseHandle(hFile);
}
```

Appendix B. Sample VB.NET Cash Drawer Code for Windows

NOTE: Requires installation of System Driver. Refer to the System Driver Installation section for instructions.

```
    Private Declare Function CreateFile Lib "kernel32" Alias "CreateFileA" (ByVal lpFileName As String, ByVal
dwDesiredAccess As Integer, ByVal dwShareMode As Integer, ByVal lpSecurityAttributes As IntPtr, ByVal
dwCreationDisposition As Integer, ByVal dwFlagsAndAttributes As Integer, ByVal hTemplateFile As IntPtr) As Integer
    Private Declare Function DeviceIoControl Lib "kernel32" (ByVal hDevice As IntPtr, ByVal dwIoControlCode As
Integer, ByRef lpInBuffer As Byte, ByVal nInBufferSize As Integer, ByRef lpOutBuffer As Byte, ByVal nOutBufferSize
As Integer, ByRef lpBytesReturned As Long, ByVal lpOverlapped As Integer) As Integer
    Private Declare Function CloseHandle Lib "kernel32" (ByVal hObject As Long) As Integer

    Public Shared Function CTL_CODE(ByVal DeviceType As Integer, ByVal func As Integer, ByVal Method As Integer,
ByVal Access As Integer) As Integer
        Return (DeviceType << 16) Or (Access << 14) Or (func << 2) Or Method
    End Function

    Dim DeviceHandle As Integer
    Const GENERIC_READ As Long = &H80000000, GENERIC_WRITE As Long = &H40000000
    Const FILE_SHARE_READ As Long = &H1, FILE_SHARE_WRITE As Long = &H2
    Const OPEN_EXISTING As Long = &H3, FILE_ATTRIBUTE_NORMAL As Long = &H80
    Const INVALID_HANDLE_VALUE As Long = &HFFFFFFFF

    Const ADVPORT_TYPE As Long = 40000, METHOD_BUFFERED As Long = 0, FILE_ANY_ACCESS As Long = 0
    Dim ADV_OPEN_CTL_CODE As Long = CTL_CODE(ADVPORT_TYPE, &H900, METHOD_BUFFERED, FILE_ANY_ACCESS)
    Dim ADV_STATUS_CTL_CODE As Long = CTL_CODE(ADVPORT_TYPE, &H901, METHOD_BUFFERED, FILE_ANY_ACCESS)

    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
        DeviceHandle = CreateFile("\\.\ADVSYS", GENERIC_READ Or GENERIC_WRITE, FILE_SHARE_READ Or FILE_SHARE_WRITE,
0, OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0)
        If DeviceHandle = INVALID_HANDLE_VALUE Then
            'Failed to Open Cash Drawer Driver
            Timer1.Enabled = False
            MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
        End If
    End Sub

    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        Dim iBytesRtn As Integer
        Dim iRet As Integer, iDrawer As Integer

        ' Open Drawer #1
        iDrawer = &H1
        iRet = DeviceIoControl(DeviceHandle, ADV_OPEN_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, 0)
        If (iRet = 0 Or iBytesRtn <> 1) Then
            MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
        End If
    End Sub

    Private Sub Button2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button2.Click
        Dim iBytesRtn As Integer
        Dim iRet As Integer, iDrawer As Integer

        ' Open Drawer #2
        iDrawer = &H2
        iRet = DeviceIoControl(DeviceHandle, ADV_OPEN_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, 0)
```

```
    If (iRet = 0 Or iBytesRtn <> 1) Then
        MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
    End If
End Sub

Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer1.Tick
    Dim iBytesRtn As Integer
    Dim iRet As Integer, iStatus As Integer

    ' Get Drawer Status
    iRet = DeviceIoControl(DeviceHandle, ADV_STATUS_CTL_CODE, 0, 0, iStatus, 4, iBytesRtn, 0)
    If (iRet = 0 Or iBytesRtn <> 1) Then
        MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
    End If
    If (iStatus = 0) Then
        StatusText.Text = "Cash Drawer(s) Closed"
    Else
        StatusText.Text = "Cash Drawer(s) Open"
    End If
End Sub
```

Appendix C. Sample VB6.0 Cash Drawer Code for Windows

NOTE: Requires installation of System Driver. Refer to the System Driver Installation section for instructions.

```
Option Explicit On
Private Declare Function CreateFile Lib "kernel32" Alias "CreateFileA" (ByVal lpFileName As String, ByVal
dwDesiredAccess As Long, ByVal dwShareMode As Long, ByVal lpSecurityAttributes As
SECURITY_ATTRIBUTES, ByVal dwCreationDisposition As Long, ByVal dwFlagsAndAttributes As Long, ByVal
hTemplateFile As Long) As Long
Private Declare Function DeviceIoControl Lib "kernel32" (ByVal hDevice As Long, ByVal dwIoControlCode
As Long, ByVal lpInBuffer As Any, ByVal nInBufferSize As Long, ByVal lpOutBuffer As Any, ByVal
nOutBufferSize As Long, ByVal lpBytesReturned As Long, ByVal lpOverlapped As OVERLAPPED) As Long
Private Declare Function CloseHandle Lib "kernel32.dll" (ByVal hObject As Long) As Long

'CreateFile Custom Variables
Private Type SECURITY_ATTRIBUTES
        nLength As Long
        lpSecurityDescriptor As Long
        bInheritHandle As Long
End Type

'DeviceIoControl Custom Variables
Private Type OVERLAPPED
Internal As Long
InternalHigh As Long
offset As Long
OffsetHigh As Long
hEvent As Long
End Type

Dim DeviceHandle As Integer
Dim SA As SECURITY_ATTRIBUTES
Dim SA1 As OVERLAPPED
Dim ADV_OPEN_CTL_CODE As Long
Dim ADV_STATUS_CTL_CODE As Long

Private Const GENERIC_READ As Long = &H80000000
Private Const GENERIC_WRITE As Long = &H40000000
Private Const FILE_SHARE_READ As Long = &H1
Private Const FILE_SHARE_WRITE As Long = &H2
Private Const OPEN_EXISTING As Long = &H3
Private Const FILE_ATTRIBUTE_NORMAL As Long = &H80
Private Const INVALID_HANDLE_VALUE As Long = &HFFFFFFFF

Private Const METHOD_BUFFERED As Long = 0, FILE_ANY_ACCESS As Long = 0

Private Function CTL_CODE(ByVal lngDevFileSys As Long, ByVal lngFunction As Long, ByVal lngMethod As
Long, ByVal lngAccess As Long) As Long
    CTL_CODE = (lngDevFileSys) Or (lngAccess * (2 ^ 14)) Or (lngFunction * (2 ^ 2)) Or lngMethod
End Function
```

```
Private Sub Form_Load()
    '-1673527296 Come from c code (40000 <<16)
    ADV_OPEN_CTL_CODE = CTL_CODE(-1673527296, &H900, METHOD_BUFFERED, FILE_ANY_ACCESS)
    ADV_STATUS_CTL_CODE = CTL_CODE(-1673527296, &H901, METHOD_BUFFERED, FILE_ANY_ACCESS)

    DeviceHandle = CreateFile("\\.\ADVSYS", GENERIC_READ Or GENERIC_WRITE, FILE_SHARE_READ Or
FILE_SHARE_WRITE, SA, OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0)
    If DeviceHandle = INVALID_HANDLE_VALUE Then
        'Failed to Open Cash Drawer Driver
        MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
    End If
End Sub

Private Sub Command1_Click()
    Dim iBytesRtn As Long
    Dim iRet As Integer, iDrawer As Integer

    ' Open Drawer #1
    iDrawer = &H1
    iRet = DeviceIoControl(DeviceHandle, ADV_OPEN_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, SA1)
    If (iRet = 0 Or iBytesRtn <> 1) Then
        MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
    End If
End Sub

Private Sub Command2_Click()
    Dim iBytesRtn As Long
    Dim iRet As Integer, iDrawer As Integer

    ' Open Drawer #2
    iDrawer = &H2
    iRet = DeviceIoControl(DeviceHandle, ADV_OPEN_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, SA1)
    If (iRet = 0 Or iBytesRtn <> 1) Then
        MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
    End If
End Sub

Private Sub Timer1_Timer()
    Dim iBytesRtn As Long
    Dim iRet As Integer, iStatus As Integer

    ' Get Drawer Status
    iRet = DeviceIoControl(DeviceHandle, ADV_STATUS_CTL_CODE, 0, 0, iStatus, 4, iBytesRtn, SA1)
    If (iRet = 0 Or iBytesRtn <> 1) Then
        Timer1.Enabled = False
        MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
    End If
    If (iStatus = 0) Then
        Label1.Caption = "Cash Drawer(s) Closed"
    Else
        Label1.Caption = "Cash Drawer(s) Open"
    End If
End Sub
```

Appendix D. Watch Dog C++ Sample Code for IMB-183

```
//1. Open Cash Drawer
// IOCTL Codes
#define GPD_TYPE 40000
#define ADV_WDOGSec_CTL_CODE CTL_CODE(ADVPORT_TYPE, 0x902, METHOD_BUFFERED,
FILE_ANY_ACCESS)
#define ADV_WDOGMin_CTL_CODE CTL_CODE(ADVPORT_TYPE, 0x903, METHOD_BUFFERED,
FILE_ANY_ACCESS)
#define ADV_COLSE_CTL_CODE CTL_CODE(ADVPORT_TYPE, 0x904, METHOD_BUFFERED, FILE_ANY_ACCESS)

2. //Open Second Mode
void OpenWDOG(UCHAR  uWhichdog)
{
// uWhichdog → Number of seconds 1 to 255
HANDLE hFile;
BOOL bRet;
UCHAR uTime = uWhichdog;
// Open the driver
hFile = CreateFile("\\\\.\\ADVSYS",GENERIC_WRITE | GENERIC_READ,FILE_SHARE_READ |
FILE_SHARE_WRITE, NULL,OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0);
if (m_hFile == INVALID_HANDLE_VALUE)
{
AfxMessageBox("Unable to open Watch Dog Driver!");
return;
}
// Watch Dog timer setting to Seconds (Seconds & minutes, a second election)
bRet = DeviceIoControl(hFile, ADV_WDOGSec_CTL_CODE, &uTime, sizeof(uTime), NULL, 0, &ulBytesReturned,
NULL);
if (bRet == FALSE || ulBytesReturned != 1)
{
AfxMessageBox("Failed to write to Watch Dog driver");
CloseHandle(hFile);
return;
}
// Watch Dog timer setting to Minutes (Seconds & minutes, a second election)
bRet = DeviceIoControl(hFile, ADV_WDOGMin_CTL_CODE, &uTime, sizeof(uTime), NULL, 0, &ulBytesReturned,
NULL);
if (bRet == FALSE || ulBytesReturned != 1)
{
AfxMessageBox("Failed to write to Watch Dog driver");
CloseHandle(hFile);
return;
}

CloseHandle(hFile);
}

3. //Close Watch Dog
 void CloseWDOG()
{
HANDLE hFile;
BOOL bRet;
UCHAR uTime = 0; // → Number of 0

// Open the driver
hFile = CreateFile("\\\\.\\ADVSYS",GENERIC_WRITE | GENERIC_READ,FILE_SHARE_READ |
```

```
FILE_SHARE_WRITE, NULL,OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0);
if (m_hFile == INVALID_HANDLE_VALUE)
{
AfxMessageBox("Unable to open Watch Dog Driver!");
return;
}
// Close Watch Dog
bRet = DeviceIoControl(hFile, ADV_COLSE_CTL_CODE CTL_CODE, &uTime, sizeof(uTime), NULL, 0,
&ulBytesReturned, NULL);
if (bRet == FALSE || ulBytesReturned != 1)
{
AfxMessageBox("Failed to write to Watch Dog driver");
CloseHandle(hFile);
return;
}
CloseHandle(hFile);
}
```

Appendix E. Watch Dog VB.NET Sample Code for IMB-183

```
Public Class Form1
    Private Declare Function CreateFile Lib "kernel32" Alias "CreateFileA" (ByVal lpFileName As String, ByVal
dwDesiredAccess As Integer, ByVal dwShareMode As Integer, ByVal lpSecurityAttributes As IntPtr, ByVal
dwCreationDisposition As Integer, ByVal dwFlagsAndAttributes As Integer, ByVal hTemplateFile As IntPtr) As Integer
    Private Declare Function DeviceIoControl Lib "kernel32" (ByVal hDevice As IntPtr, ByVal dwIoControlCode As Integer,
ByRef lpInBuffer As Byte, ByVal nInBufferSize As Integer, ByRef lpOutBuffer As Byte, ByVal nOutBufferSize As Integer,
ByRef lpBytesReturned As Long, ByVal lpOverlapped As Integer) As Integer
    Private Declare Function CloseHandle Lib "kernel32" (ByVal hObject As Long) As Integer

    Public Shared Function CTL_CODE(ByVal DeviceType As Integer, ByVal func As Integer, ByVal Method As Integer, ByVal
Access As Integer) As Integer
        Return (DeviceType << 16) Or (Access << 14) Or (func << 2) Or Method
    End Function

    Dim DeviceHandle As Integer
    Const GENERIC_READ As Long = &H80000000, GENERIC_WRITE As Long = &H40000000
    Const FILE_SHARE_READ As Long = &H1, FILE_SHARE_WRITE As Long = &H2
    Const OPEN_EXISTING As Long = &H3, FILE_ATTRIBUTE_NORMAL As Long = &H80
    Const INVALID_HANDLE_VALUE As Long = &HFFFFFFFF
    Const ADVPORT_TYPE As Long = 40000, METHOD_BUFFERED As Long = 0, FILE_ANY_ACCESS As Long = 0

    Dim ADV_WDOGSec_CTL_CODE As Long = CTL_CODE(ADVPORT_TYPE, &H902, METHOD_BUFFERED, FILE_ANY_ACCESS)
    Dim ADV_WDOGMin_CTL_CODE As Long = CTL_CODE(ADVPORT_TYPE, &H903, METHOD_BUFFERED,
FILE_ANY_ACCESS)
    Dim ADV_COLSE_CTL_CODE As Long = CTL_CODE(ADVPORT_TYPE, &H904, METHOD_BUFFERED, FILE_ANY_ACCESS)

    Dim iBytesRtn As Integer
    Dim iRet As Integer, iDrawer As Integer

    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
        DeviceHandle = CreateFile("\\.\WDOG", GENERIC_READ Or GENERIC_WRITE, FILE_SHARE_READ Or
FILE_SHARE_WRITE, 0, OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0)
        If DeviceHandle = INVALID_HANDLE_VALUE Then
            'Failed to Open Cash Drawer Driver
            MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
        End If
    End Sub

    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        Label2.Text = 0

        'Open Second Mode
        iDrawer = Val(TextBox1.Text)    'Number of seconds 1 to 255
        iRet = DeviceIoControl(DeviceHandle, ADV_WDOGSec_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, 0)
        If (iRet = 0 Or iBytesRtn <> 1) Then
            MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
        End If
        Timer1.Enabled = True
    End Sub

    Private Sub Button2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button2.Click
        Label2.Text = 0

        'Open Minute Mode
        iDrawer = Val(TextBox1.Text)    'Number of seconds 1 to 255
        iRet = DeviceIoControl(DeviceHandle, ADV_WDOGMin_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, 0)
        If (iRet = 0 Or iBytesRtn <> 1) Then
            MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
        End If
        Timer1.Enabled = True
```

```
    End Sub

    Private Sub Button3_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button3.Click
        'Close Watch Dog
        iDrawer = &H0
        iRet = DeviceIoControl(DeviceHandle, ADV_COLSE_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, 0)
        If (iRet = 0 Or iBytesRtn <> 1) Then
            MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
        End If

        Timer1.Enabled = False
        TextBox1.Text = 0
        Label2.Text = 0
    End Sub

    Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer1.Tick
        Label2.Text = Val(Label2.Text) + 1
    End Sub
End Class
```

Appendix F. Watch Dog VB6 Sample Code for IMB-183

```
Option Explicit On
Private Declare Function CreateFile Lib "kernel32" Alias "CreateFileA" (ByVal lpFileName As String, ByVal dwDesiredAccess As Long,
ByVal dwShareMode As Long, ByVal lpSecurityAttributes As SECURITY_ATTRIBUTES, ByVal dwCreationDisposition As Long, ByVal
dwFlagsAndAttributes As Long, ByVal hTemplateFile As Long) As Long
Private Declare Function DeviceIoControl Lib "kernel32" (ByVal hDevice As Long, ByVal dwIoControlCode As Long, ByVal lpInBuffer As
Any, ByVal nInBufferSize As Long, ByVal lpOutBuffer As Any, ByVal nOutBufferSize As Long, ByVal lpBytesReturned As Long, ByVal
lpOverlapped As OVERLAPPED) As Long
Private Declare Function CloseHandle Lib "kernel32.dll" (ByVal hObject As Long) As Long

'CreateFile Custom Variables
Private Type SECURITY_ATTRIBUTES
      nLength As Long
      lpSecurityDescriptor As Long
      bInheritHandle As Long
End Type

'DeviceIoControl Custom Variables
Private Type OVERLAPPED
Internal As Long
InternalHigh As Long
offset As Long
OffsetHigh As Long
hEvent As Long
End Type

Dim DeviceHandle As Integer
Dim SA As SECURITY_ATTRIBUTES
Dim SA1 As OVERLAPPED
Dim ADV_WDOGSec_CTL_CODE As Long
Dim ADV_WDOGMin_CTL_CODE As Long
Dim ADV_COLSE_CTL_CODE As Long

Dim iBytesRtn As Long
Dim iRet As Integer, iDrawer As Integer

Private Const GENERIC_READ As Long = &H80000000
Private Const GENERIC_WRITE As Long = &H40000000
Private Const FILE_SHARE_READ As Long = &H1
Private Const FILE_SHARE_WRITE As Long = &H2
Private Const OPEN_EXISTING As Long = &H3
Private Const FILE_ATTRIBUTE_NORMAL As Long = &H80
Private Const INVALID_HANDLE_VALUE As Long = &HFFFFFFFF

Private Const METHOD_BUFFERED As Long = 0, FILE_ANY_ACCESS As Long = 0

Private Function CTL_CODE(ByVal lngDevFileSys As Long, ByVal lngFunction As Long, ByVal lngMethod As Long, ByVal lngAccess As
Long) As Long
   CTL_CODE = (lngDevFileSys) Or (lngAccess * (2 ^ 14)) Or (lngFunction * (2 ^ 2)) Or lngMethod
End Function

Private Sub Form_Load()
   '-1673527296 Come from c code (40000 <<16)
   ADV_WDOGSec_CTL_CODE = CTL_CODE(-1673527296, &H902, METHOD_BUFFERED, FILE_ANY_ACCESS)
   ADV_WDOGMin_CTL_CODE = CTL_CODE(-1673527296, &H903, METHOD_BUFFERED, FILE_ANY_ACCESS)
   ADV_COLSE_CTL_CODE = CTL_CODE(-1673527296, &H904, METHOD_BUFFERED, FILE_ANY_ACCESS)

   DeviceHandle = CreateFile("\\.\WDOG", GENERIC_READ Or GENERIC_WRITE, FILE_SHARE_READ Or FILE_SHARE_WRITE, SA,
OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0)
   If DeviceHandle = INVALID_HANDLE_VALUE Then
      'Failed to Open Cash Drawer Driver
      MsgBox("Error opening WDOG.sys. Error = " & Err.LastDllError)
   End If
End Sub

Private Sub Command1_Click()   'Button1
   Label2.Caption = 0
```

```
    'Open Second Mode
    iDrawer = Val(Text1.Text)   'Number of seconds 1 to 255
    iRet = DeviceIoControl(DeviceHandle, ADV_WDOGSec_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, SA1)
    If (iRet = 0 Or iBytesRtn <> 1) Then
       MsgBox("Error opening WDOG.sys. Error = " & Err.LastDllError)
    End If

    Timer1.Enabled = True
End Sub

Private Sub Command2_Click()    'Button2
    Label2.Caption = 0

    'Open Minute Mode
    iDrawer = Val(Text1.Text)   'Number of minutes 1 to 255
    iRet = DeviceIoControl(DeviceHandle, ADV_WDOGMin_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, SA1)
    If (iRet = 0 Or iBytesRtn <> 1) Then
       MsgBox("Error opening WDOG.sys. Error = " & Err.LastDllError)
    End If

    Timer1.Enabled = True
End Sub

Private Sub Command3_Click()    'Button3

    'Close Watch Dog
    Text1.Text = 0
    iDrawer = 0
    iRet = DeviceIoControl(DeviceHandle, ADV_COLSE_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, SA1)
    If (iRet = 0 Or iBytesRtn <> 1) Then
       MsgBox("Error opening WDOG.sys. Error = " & Err.LastDllError)
    End If
    Label2.Caption = 0
    Timer1.Enabled = False
End Sub

Private Sub Timer1_Timer()
    Label2.Caption = Val(Label2.Caption) + 1
End Sub
```