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POS-400 Expander II

All-in-One Point of Sales System

User Manual

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

Ver 1.0_2009/12/30

How to Use This Manual

This manual contains information to set up and use the POS-400 Expander II. In addition, instructions are included for added hardware, upgrades, and optional items, as well as for software.

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, main memory, and Compact Flash.

Chapter 3 Mounting procedures for optional devices, such as MSR, Fingerprint, I-Button, IC Card, WiFi, Bluetooth, RFID, rear mount VFD, pole-type 2nd display, and cash drawer.

Chapter 4 PEB-973A main board diagrams, locations of jumpers, and connectors. Also shows the external COM6 port pin assignments.

Chapter 5 Installation instructions for the Intel chip set 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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First Edition December 2009

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.

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Chapter 1 Introduction

Features

- 15 inch TFT Touch Screen
- Fanless operation
- Magnesium-aluminum alloy shell for greater reliability
- Cable-less docking reduces clutter
- Convertible 2nd display options
- 5 x COM, 6 x USB, 1 x CF II
- Flexible options: MSR, I-Button, Fingerprint, RFID, WiFi and Bluetooth
- RoHS compliant

Specifications

POS-400 Expander II System Configuration	
CPU (µPGA)	Intel® Atom™ Processor N270 1.6GHz fanless
System Chipset	Intel 945GSE+ICH7M
System Memory	Supports 1 x 1GB SO-DIMM DDR2 SDRAM (up to 2GB)
Video Memory	Supports Intel DVMT3.0, shared system memory up to 224MB
Compact Flash	Supports 1 x Compact Flash Card Type II
HDD	1 x internal 2.5 inch 80GB SATA hard disk drive (up to 160GB)
Power	1 x external 60W 12VDC power adapter (100~240VAC, 50~60Hz, 5.0A)
OS Support	Windows® 2000 / Windows® XP Pro Embedded / WEPOS® / Windows® POS Ready 2009 / Linux®
LCD Touch Panel	
Resolution Size	15 inch TFT LCD / 1024 x 768
Brightness	250cd/m^2 (adjustable)
Touch Screen Type	ELO or Abon 5-wire resistive
I/O Ports	
USB Ports	Supports 6 USB 2.0 ports for future expansion (3 x internal, 3 x external) Arm x 1, rear side x 2
Serial Ports	4 x external: COM1, COM2, COM5 (D-SUB); COM6 (8 Pin Wafer) 2 x internal: COM3 for primary touch screen, COM4 reserved
Parallel Port	1 x Bi-directional parallel port (D-SUB25)
VGA Port	1 X external VGA Port (D-SUB15)
Cash Drawer Port	1 x 12V RJ11 connector (maximum 2 drawers)
LAN Port	1 x Giga LAN (10/100/1000Mbps Base-T), RJ45 connector

Audio Port	1 x Line-out, 1 x Mic-in
Speaker	2 x internal stereo 2W speakers
Mechanics and Environment	
Construction	magnesium-aluminum alloy housing
Dimensions	268.5(D) x 380(W) x 350.3(H) mm 296.6(D) x 380(W) x 350.3(H) mm (with pole I/O cover)
Housing Color	Silver/Black, Black
Net Gross Weight	7.5 Kg (with VFD and MSR)
Operating Temperature	0 °C ~ 40 °C
EMI/Safety	CE, FCC, RoHS

Package Contents

The following items come standard with the POS-4200 Expander 2:

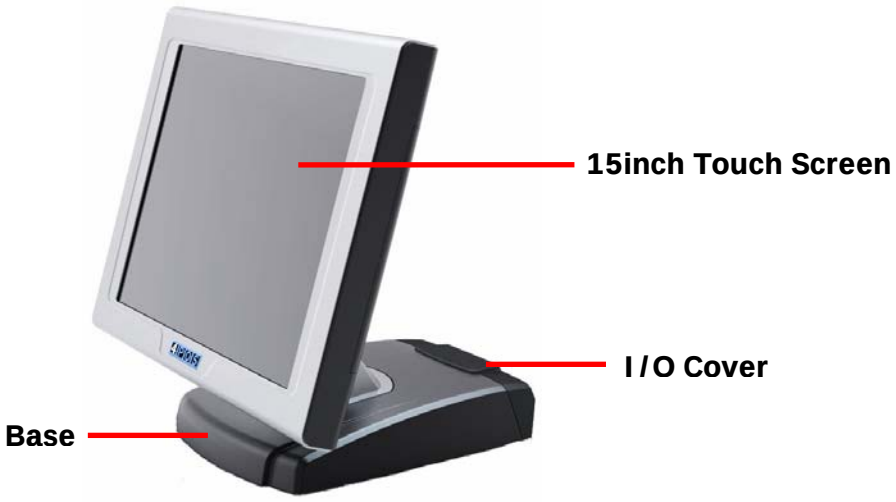
POS System		**Power Adaptor**	
Utility and Main Board Chipset Driver CD		**AC Power Cord**	

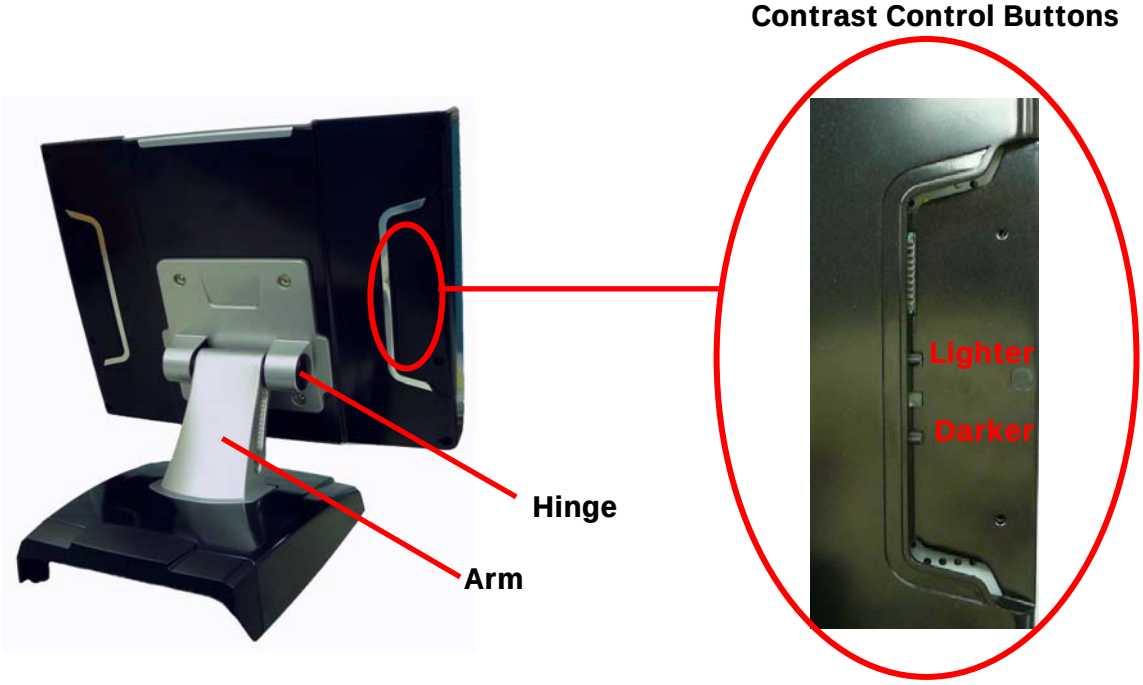
Options
• Magnetic Stripe Reader (MSR) Module: triple track*
• 2-in-1 Module (Magnetic Stripe Reader + Fingerprint Reader) *
• 2-in-1 Module (Magnetic Stripe Reader + I-Button Reader) *
• 3-in-1 Module (Magnetic Stripe Reader + I-Button Reader + IC Card Reader) *
• Wireless Module: WiFi 802.11b/g or Bluetooth 2.0
• Radio Frequency Identification (RFID) Module: internal 13.56MHz
• VFD Customer Display: 9 cm height, 2 lines 20 characters each (rear mount type or pole type)
• 2nd Customer Display: 8.9 inch tempered glass LCD 15 cm set on a 15 cm tube pole

* Available in front or side swipe formats.

Base System

Before you begin, take a few moments to become familiar with the POS-420 Expander 2.





Arm left side

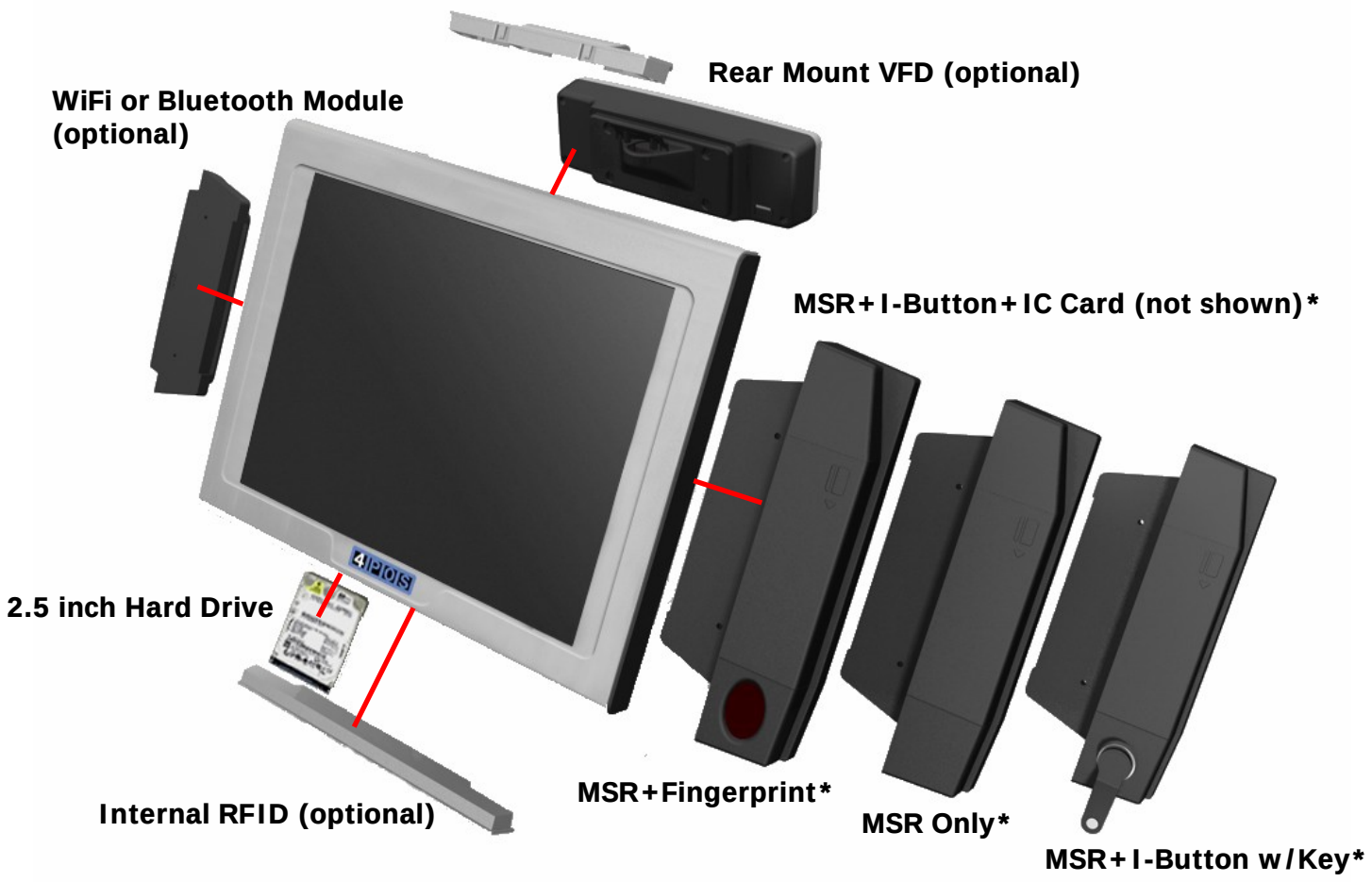
Arm right side

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.

- Rear Mount VFD (USB interface, need USB Driver)
- WiFi or Bluetooth module (USB interface)
- RFID module (USB interface)
- MSR (PS/2 interface)
- MSR+I-Button (PS/2 interface)
- MSR+Fingerprint (MSR for PS/2 interface, Fingerprint for USB interface)
- MSR+I-Button+IC Card Reader (MSR and I-Button for PS/2 interface, IC Card Reader for USB interface)

NOTE: The Magnetic Stripe Reader module can only be installed to the right side of the front panel. The wireless module can only be installed to the left side of the front panel. The locations are not interchangeable.



* MSR Modules available in side or front swipe formats.

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.

Two types of pole mount display choices are available: a 8.9 inch LCD monitor and a 9 cm high, 2 lines with 20 characters each VFD.

The pole mount is located at the rear of the base and connects with the COM6 port or VGA port for operation. Whether installing a VFD or 8.9inch LCD, there is no need to change any settings on the main board.

Single Pole 2nd display choices:
- **8.9 inch LCD**
- **9 cm VFD**

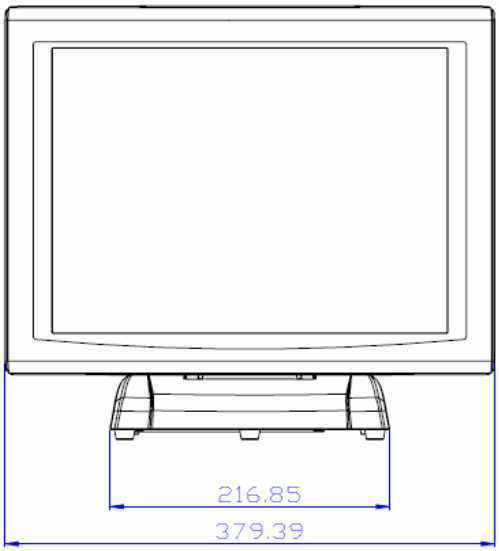
15 cm Tube extendable to 30 cm

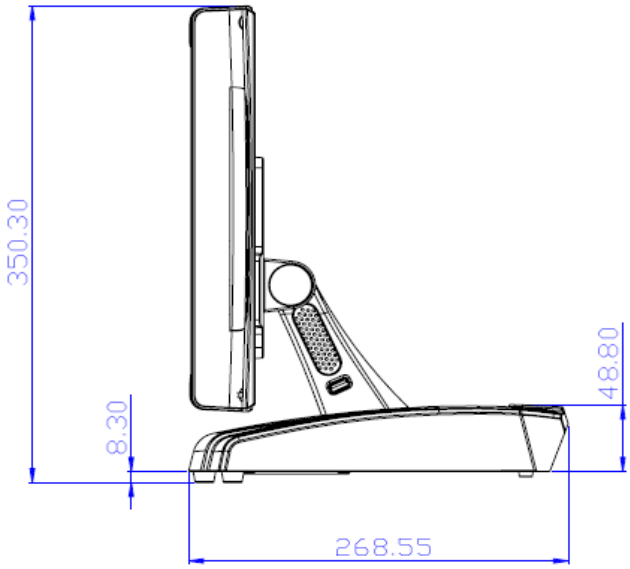
Pole Base Cover w/Pole

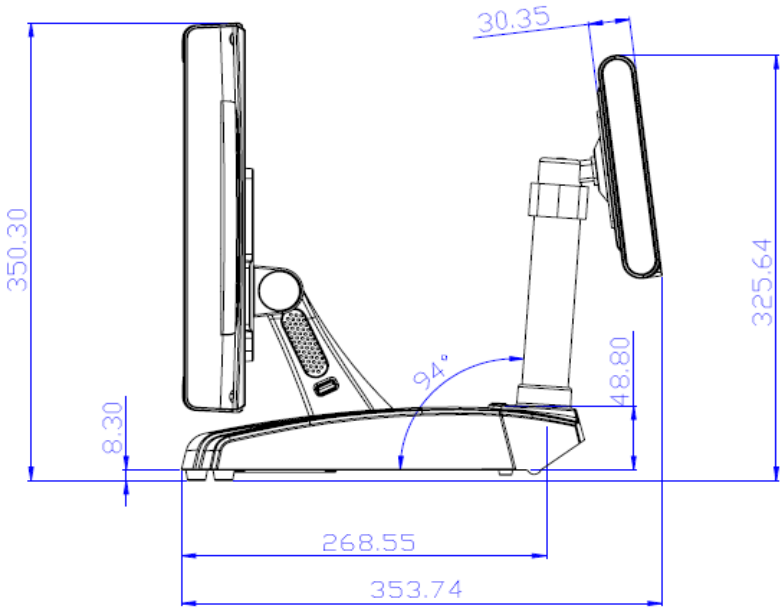
8.9 inch LCD OSD Control Buttons

Dimensions

(Unit: mm)



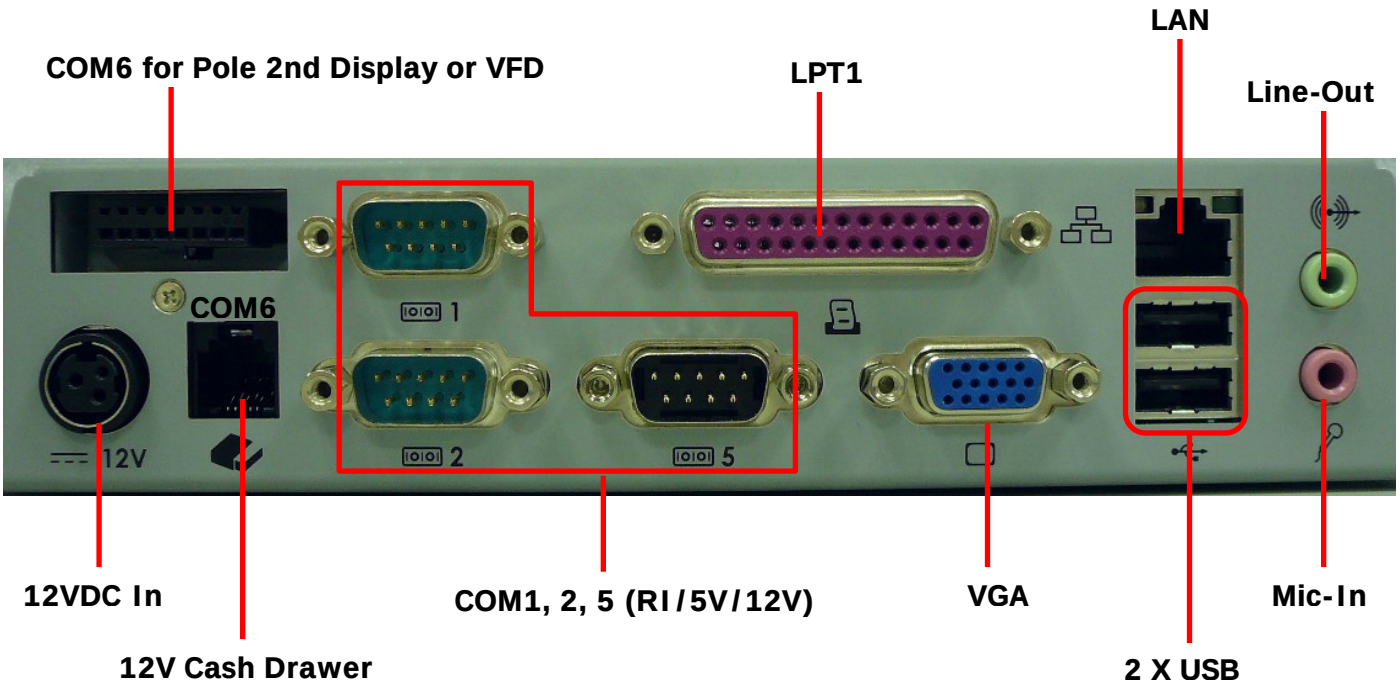




Connector Panel

The POS-400 Expander II's primary connector panel is located at the rear. To clearly see the connector panel you must remove the I/O cover.

NOTE: POS-400 Expander II's COM6 port is not a complete RS-232C signals, can not be used as a general use COM port, please refer to Chapter 4 for COM6 pin assignment.



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 Base Cover

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.
3. Place the main unit upside down. Then remove the six screws indicated at the bottom of the base.

CAUTION: To avoid scratching the panel, before doing dismantling, put a piece of cloth or cushion under the main unit.

4. Replace the main unit to an upright position, then open the base cover in the direction of the arrow.

Clearing CMOS

The POS-400 Expander II's configuration (CMOS) may occasionally be corrupted. If it is, it will be necessary to clear the CMOS memory using jumper JP1. Please refer to Chapter 4 for the exact JP1 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. Open the base cover.

4. Locate the JP1 jumper box on the main board.

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

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

7. Replace the base cover and replace the main unit to an upright position.

Compact Flash Card Installation

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

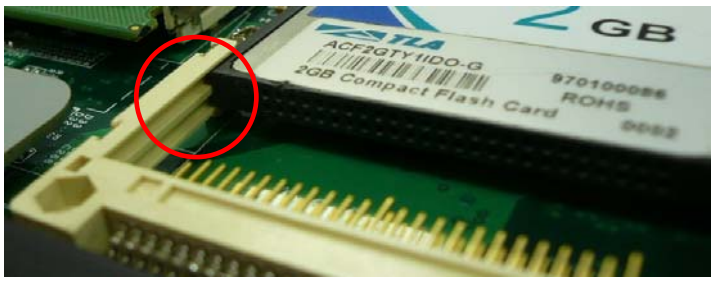
2. Disconnect the power cord from the power outlet and disconnect any external devices.

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. Place the main unit upside down. Remove the two screws indicated at the bottom of the base and slide off the CF cover.

CAUTION: To avoid scratching the panel, before doing dismantling, put a piece of cloth or cushion under the main unit.

4. Insert the CF card into the socket.



NOTE: Grooves on both sides of the CF card will need to match the socket can be easily inserted.

5. Replace the CF cover and replace the main unit to an upright position.

6. Reconnect the power cord and any external devices, then turn on the system. The system should automatically recognize the CF card when the system power is turned on.

NOTE: CF card and 2.5 inch HDD master/slave setting:

The system allows the use of both the CF card and hard disk at the same time, however the user will need to set the system BIOS for the preferred boot order. When either a CF card only or 2.5 inch hard disk only is installed, the BIOS will automatically designate it as the 'master' drive and system boot device.

Memory Installation

The memory sockets on the main board can be populated with an industry-standard DIMM. The POS-400 Expander II comes standard with one preinstalled DIMM. To achieve maximum memory performance, up to 2GB of memory can be changed.

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.

---

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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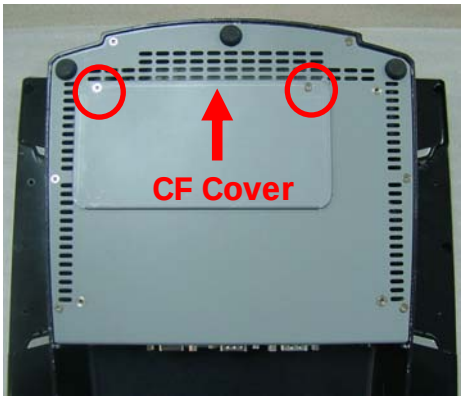
3. Place the main unit upside down. Remove the two screws indicated at the bottom of the base and slide off the CF cover.

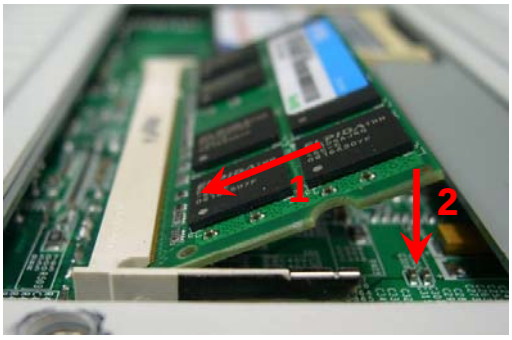


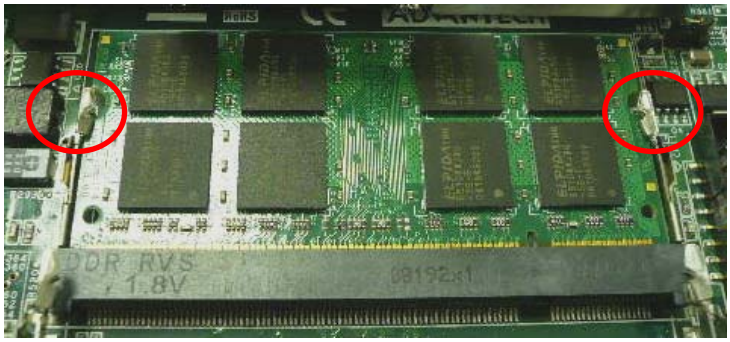
CAUTION: To avoid scratching the panel, before doing dismantling, put a piece of cloth or cushion under the main unit.

4. 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.

5. Insert 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.





6. Replace the CF cover, then replace the main unit to an upright position.

7. 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

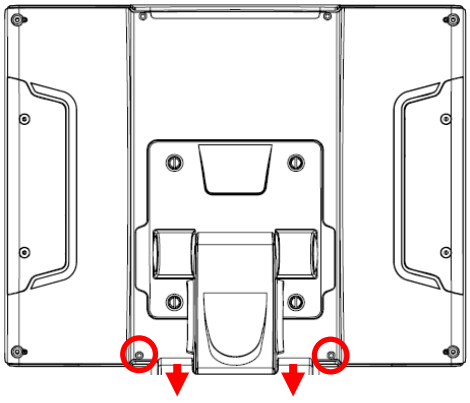
NOTE: This system does not support Parallel ATA (PATA) hard drives.

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.

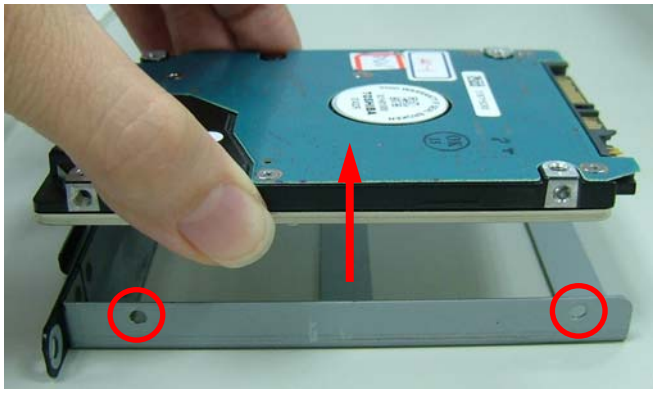
CAUTION: Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

3. From the bottom of the flat panel's rear side, remove two screws and detach the cover.



4. For easier access, tilt the panel back on its upper hinge. Remove the 2 screws that secure the HDD box, and carefully slide it out.

5. From the sides of the HDD box, remove all four screws and lift out the hard disk.



6. Insert the replacement hard disk into the HDD box, and re-secure the screws.
7. Slide the HDD box back into the panel, ensuring that it is pressed all the way in and properly seated.
8. Reattach the two screws that secure the HDD box.
9. Reattach the cover and two screws.
10. Reconnect the power cord and any external devices, then turn on the system.

Chapter 3 Optional Components and Peripherals

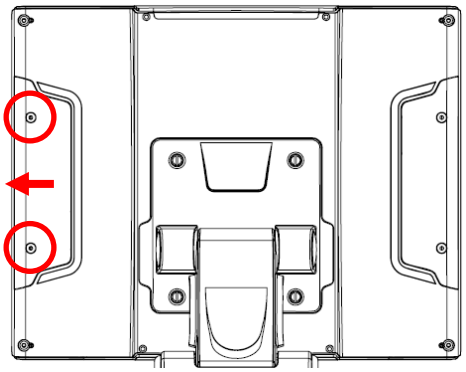
MSR/Fingerprint/I-Button Module Installation

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.

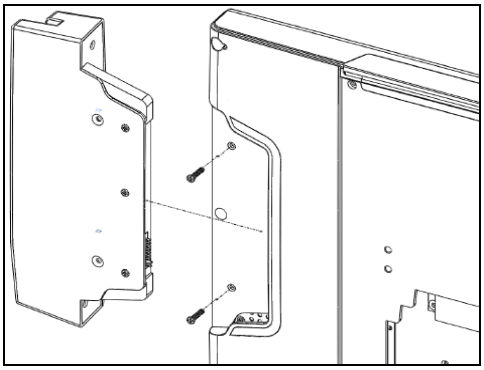
1. Turn off the system power properly through the operating system, then turn off any external devices.
2. Disconnect the power cord from the power outlet and disconnect any external devices.

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. Remove the two screws and slide the expansion cover in the direction of the arrow. Note the location of the attachment socket.



4. Slide the MSR into the panel, ensuring it is plugged securely into the socket.
5. Reattach the two screws that secure the MSR to the main unit.



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

NOTE: The MSR module configuration tool be put under <CD>\ Optional Module Data & Tool\MSR . If you need config MSR Module or test MSR module, please execute the utility under <CD>\ Optional Module Data & Tool\MSR

Wireless Module 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.

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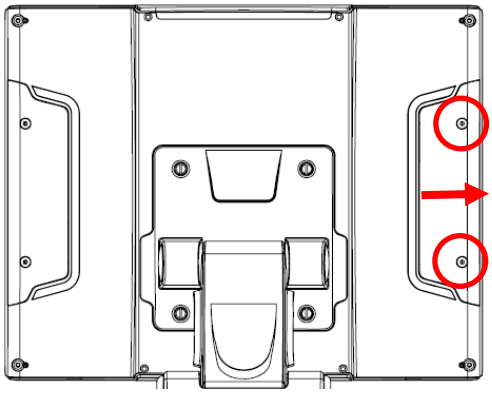
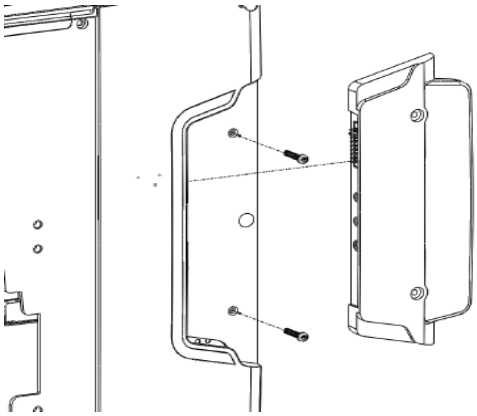
3. Remove the two screws and slide the expansion cover in the direction of the arrow. Note the location of the attachment socket.



4. Slide the wireless module into the panel, ensuring it is plugged securely into the socket.

5. Reattach the two screws that secure the wireless module to the main unit.



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

Rear Mount VFD Installation (need install rear mound USB driver)

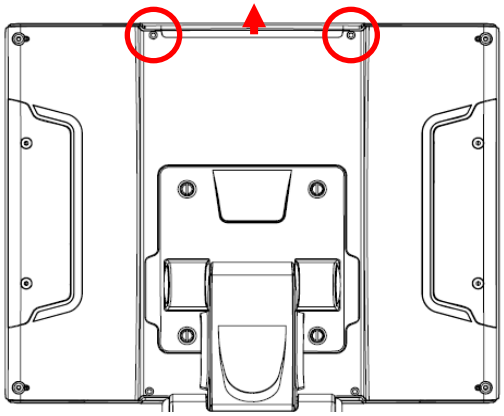
1. Turn off the system power properly through the operating system, then turn off any external devices.

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

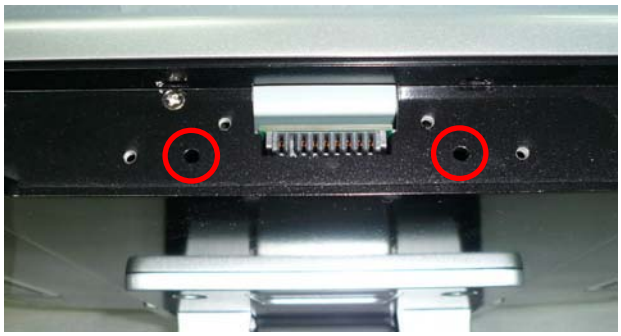
△ **CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

---

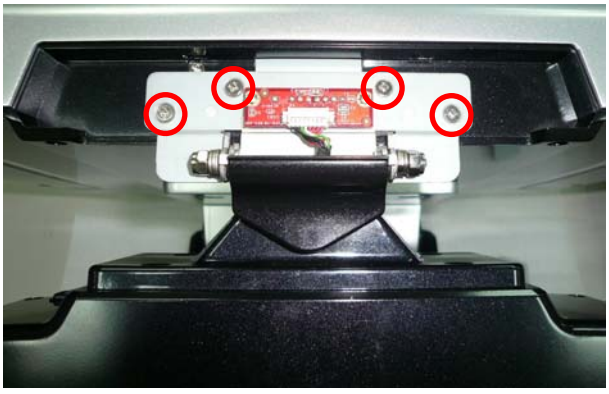
3. From the top of the flat panel's rear side, remove two screws and detach the cover.



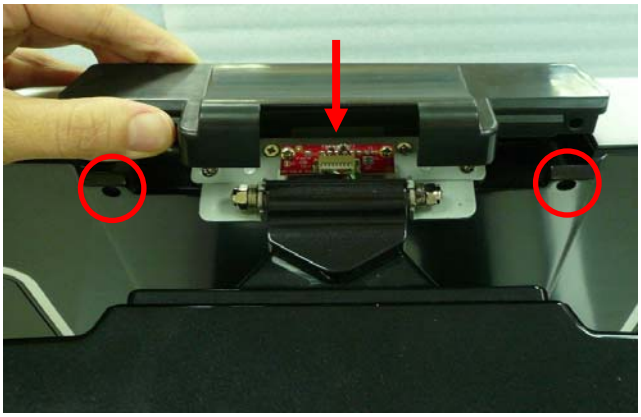
4. Align the VFD hinge guide posts to the two indicated holes and insert the VFD module.



5. Secure the VFD module with four screws.



6. Attach the hinge cover with two screws.



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

NOTE: The rear mound VFD module configuration utility be put under <CD>\ Optional Module Data & Tool\VFD\RearMount VFD . If you need it, please execute the utility under <CD>\ Optional Module Data & Tool\ VFD\RearMount VFD

RFID Module Installation

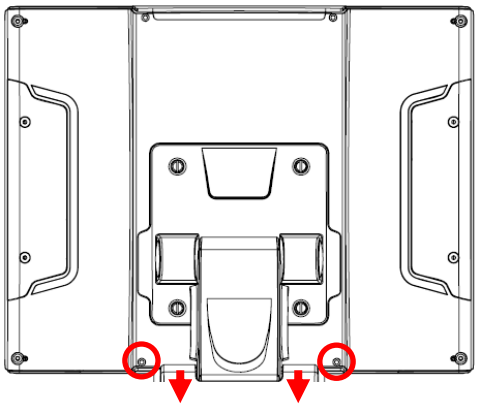
1. Turn off the system power properly through the operating system, then turn off any external devices.

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.

---

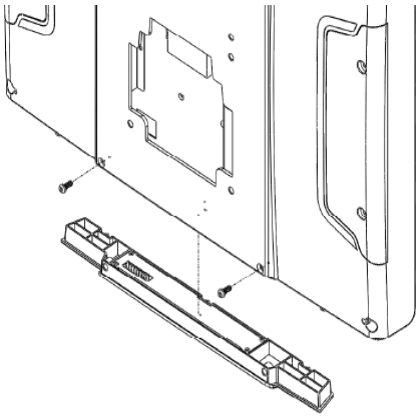
3. From the bottom of the flat panel's rear side, remove two screws and detach the cover.



4. If the RFID components are already assembled in the custom cover module, then skip to step 6.

5. If the module is disassembled, set the RFID circuit board into the custom cover. Top it with the flat metal piece and secure with four screws.

6. Attach the cover module into the panel, ensuring it is plugged securely into the socket. Secure with two screws.



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

Cash Drawer Installation

NOTE: Before connecting a 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. Please refer to the Cash Drawer Power Select Connector section.

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. Plug the cash drawer cable into the cash drawer port.

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

Pole-Type 2nd Display Module 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. Unscrew the I/O cover, slide it out, and store in a secure location for possible future use.

4. Connect 8.9inch pole display module both end connector to POS-400 Expander II COM6 port and VGA port respectively. If you are installing pole type VFD, it has only a VFD cable to connect to POS-400 Expander II COM6 port. Then the plastic clip on the I/O cover must lock over the end of the base.

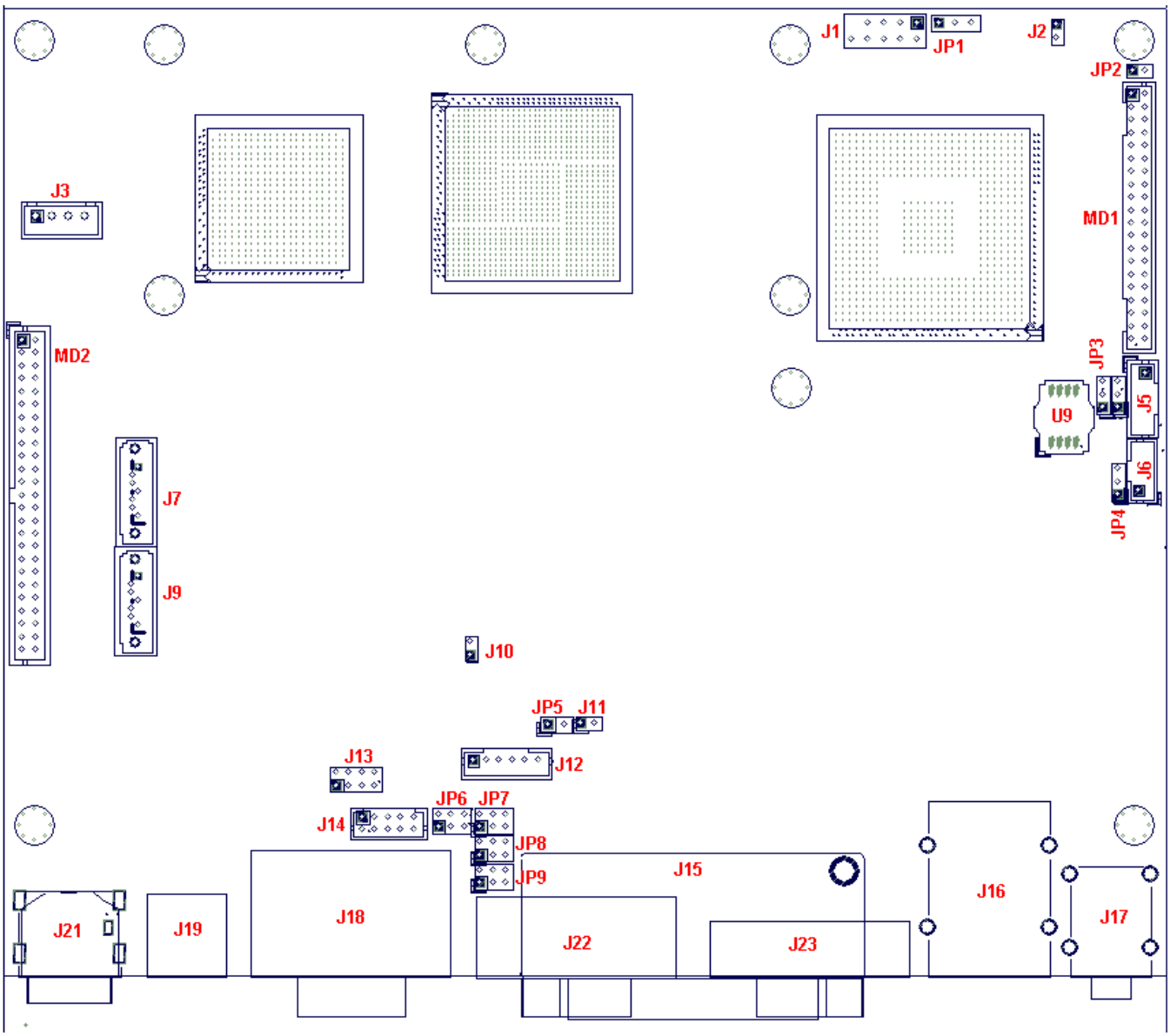
5. Secure the two screws under the I/O cover and one screw above the I/O cover.

6. Reconnect the power cord and any external devices, then turn on VFD/LCD power. Finally, turn on the system power.

NOTE: The Pole mound VFD module please follow the same step but just need put connect into POS-400 Expander II COM6 port. And its configuration utility be put under <CD>\ Optional Module Data & Tool\VFD\PoleMount VFD . If you need it, please execute the utility under <CD>\ Optional Module Data & Tool\ VFD\PoleMount VFD

Chapter 4 PEB-973A Main Board Configuration

Jumper and Connector Locations



Connector Allocation

Connector	Function
J1	LPC port 80 daughter card connector
J2	SATA and IDE active LED
J3	SATA drive power connector
J4	Reserved
J5	LVDS back light inverter connector
J6	USB port 2
J7	SATA port 0
J8	Battery socket
J9	SATA port 2
J10	Suspend LED connector
J11	Case open connector

J12	PS/2 KB and MS connector
J13	Front panel connector
J14	COM6 connector
J15	Printer port
J16	USB port 1, USB port 4 and GIGA LAN RJ-45 connector
J17	Speaker out and MIC connector
J18	COM1, COM2 connector. Upper is COM1; Lower is COM2
J19	RJ-11 connector
J21	+12V DC power input
J22	COM5 connector
J23	VGA connector
J24	CF card socket (on the solder side)

Connectors Pin Assignments

J21

+12V DC Input DIN Connector

PIN No.	Description
1	GND
2	VIN
3	VIN
CG1	GND

J19

Cash Drawer Port RJ-11 Connector

PIN No.	Description	PIN No.	Description
1	GND	2	12V for drawer A
3	GPI	4	+12V
5	12V for drawer B	6	GND

J18/J22

RS-232 Port COM1, COM2, COM5 D-Sub9 Connector

PIN No.	Description
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

J15

Parallel Port LPT1 SCSI Connector

PIN No.	Description	PIN No.	Description
1	STBX	2	D0
3	D1	4	D2
5	D3	6	D4
7	D5	8	D6
9	D7	10	ACKX
11	BUSY	12	PE
13	SLCT	14	AFDX
15	ERX	16	INITX
17	SLINX	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND		

J23

VGA Port D-Sub15 Connector

PIN No.	Description	PIN No.	Description
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	Reserved
7	GND	8	GND
9	NC	10	GND
11	NC	12	DDC DATA
13	HSYNC	14	VSYNC
15	DDC CLK		

J16

LAN Port RJ-45 and USB Port1/Port4 Connector

PIN No.	Description	PIN No.	Description
T1	LAN0+	B1	+5V
T2	LAN0-	B2	USBD1-
T3	LAN1+	B3	USBD1+
T4	LAN2+	B4	GND
T5	LAN2-	B5	+5V
T6	LAN1-	B6	USBD4-
T7	LAN3+	B7	USBD4+
T8	LAN3-	B8	GND

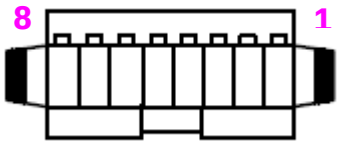
J17

Speaker out and MIC Connector

PIN No.	Description
Top	Stereo line out
Bottom	Microphone input

External COM6 Port: Connector Pin Definitions

A COM6 cable transfers signals from the PEB-973A main board to the external COM6 port.



PIN No.	Description
1	VIN
2	GND
3	CTS
4	RTS
5	RXD
6	TXD
7	+12V
8	GND

Jumper Settings

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 sign (★).

JP1

Clear CMOS Selection

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

JP2

CF Card Master Slave Selection

PIN No.	Function
1-2 NC	Slave ★
1-2 Short	Master

JP3

LVDS Panel VDD Selection

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

JP4

LVDS Back Light Enable Level Selection

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

JP5

PS/2 KB and Mouse Interface Enable Selection

PIN No.	Function
1-2 NC	Disable
1-2 Short	Enable ★

JP7

COM1 RI Function Selection

PIN No.			Function
1-2	3-4	5-6	
Short			+5V output
	Short		RI function ★
		Short	+12V output

JP8

COM2 RI Function Selection

PIN No.			Function
1-2	3-4	5-6	
Short			+5V output
	Short		RI function ★
		Short	+12V output

JP9

COM5 RI Function Selection

PIN No.			Function
1-2	3-4	5-6	
Short			+5V output
	Short		RI function ★
		Short	+12V output

Chapter 5 Software Setup

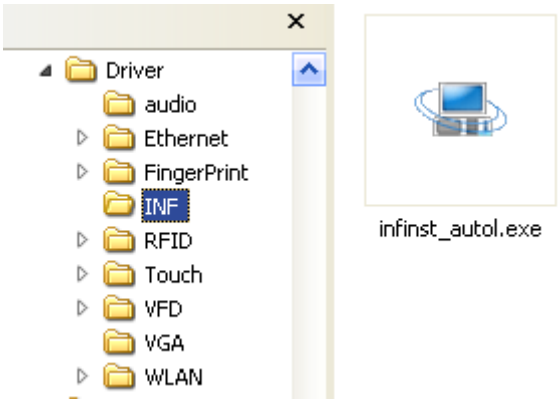
This system comes with a variety of drivers for different operating systems. A software CD is included in the package contents.

Driver Software List

Driver	Driver Setup Location
Intel Chipset	<CD>:\Driver\POS-400 II\Intel INF\XP
Intel Graphics	<CD>:\Drive\POS-400 II\VGA\Winxp
ELO Touch Screen	<CD>:\Driver\POS-400 II\Touch\ELO
Abon Touch Screen	<CD>:\Driver\POS-400 II\Touch\Abon
RealTek Audio	<CD>:\Driver\POS-400 II\audio\WDM_R202
PCI-E Ethernet	<CD>:\Driver\POS-400 II\LAN\PCIE_Install_5698_0822
802.11b/g Wireless	<CD>:\Driver\POS-400 II\WLAN\802.11bg
RealMound VFD	<CD>:\Driver\Optional Module driver\RealMound VFD\ RearMount VFD USB Driver
USB RFID	<CD>:\Driver\Optional Module driver\RFID\USB driver
Fingerprint Reader	<CD>:\Driver\Optional Module driver\FingerPrint\URU4000B\ DP Plat frsw 3.2
IC Card Reader	<CD>:\Driver\Optional Module driver\IC Card Reader\ EZ100PU Driver
Cash Drawer	<CD>:\Driver\ POS-400 II\System driver
OPOS CCOs	<CD>:\Driver\OPOS\CCOs
OPOS Driver	<CD>:\Driver\OPOS\Driver_1.12

Intel Chipset Driver Installation

The chipset driver is needed to get the full potential from the POS-400 Expander II chipset. It should be loaded before other drivers and first thing after booting XP or Vista.



1. Run the infinst_autol.exe file on the CD in folder <CD>:\Driver\ POS-400 II\INF\xp

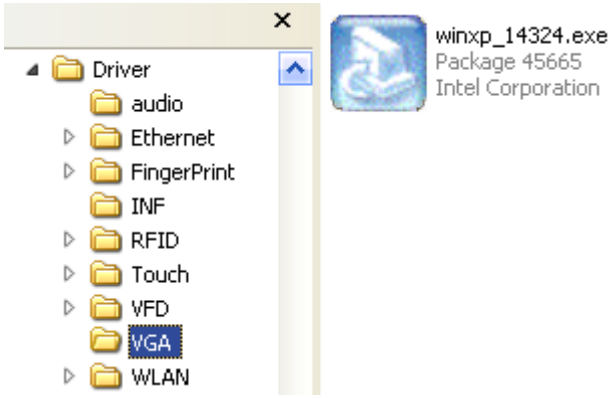
2. Click the Next button on the Welcome screen.

3. Click Yes on the License Agreement screen.

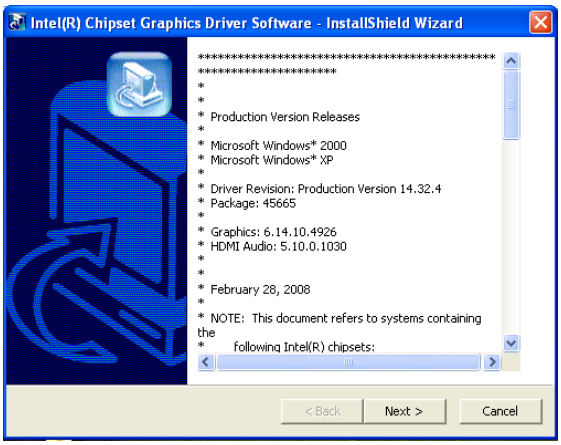
4. Click Next on the Information screen.

5. When installation is complete, click Finish.

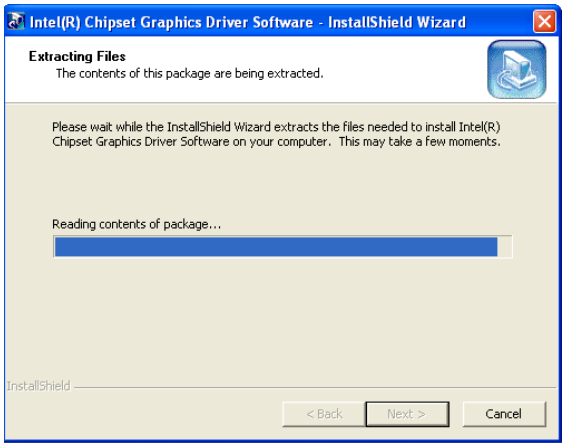
Intel Graphics Driver Installation



1. Locate and Run the winxp_14324.exe file on the CD in folder <CD>:\Driver\POS-400 II\ VGA\winxp

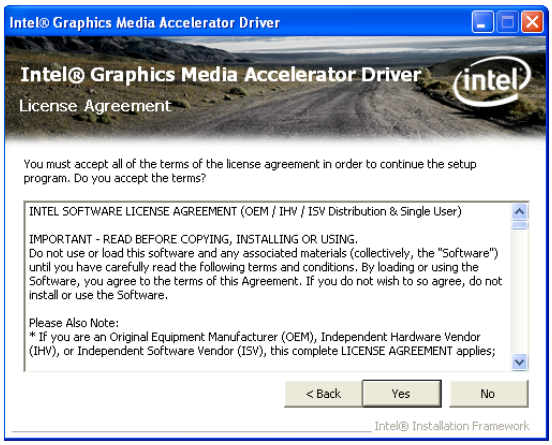


2. Click Next on the Startup screen.

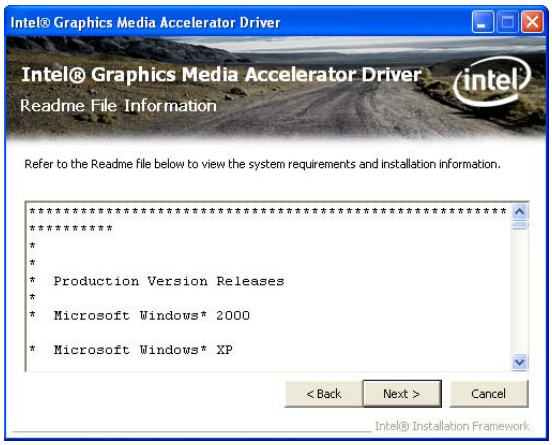


3. Wait a moment for extract install driver software on your computer.

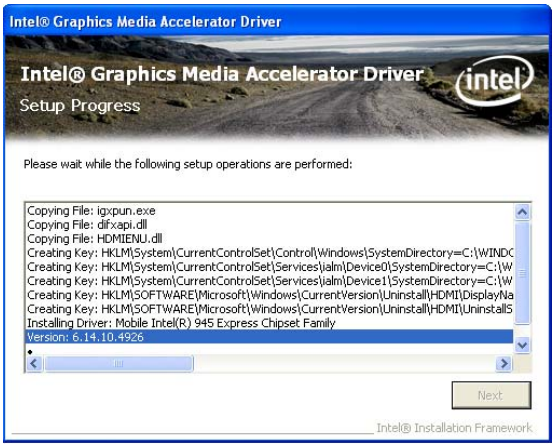
4. Click Next on the Welcome screen.



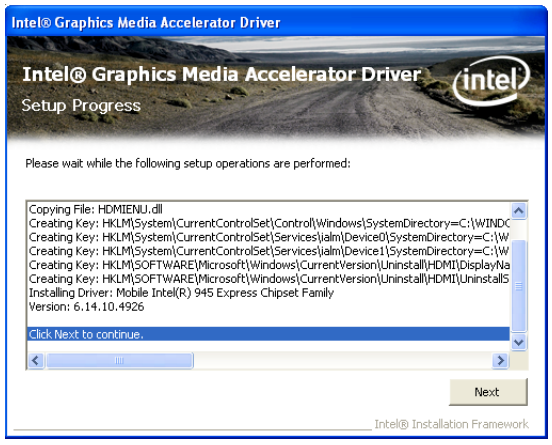
5. Click Yes on the License Agreement screen.



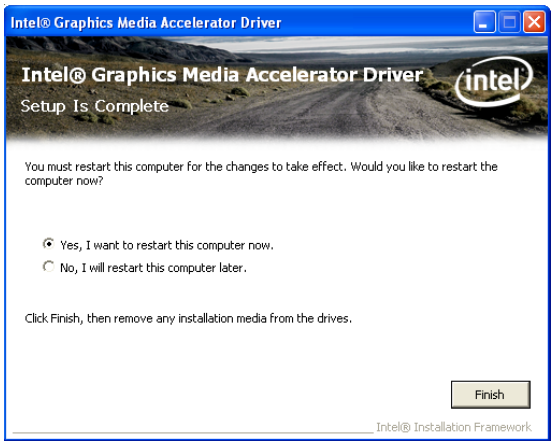
6. Click Next on the Information screen.



7. Click Next on the Setup Progress screen.

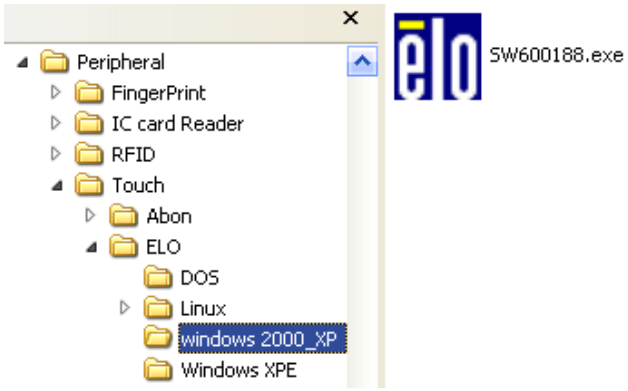


8. Click Next on the Setup Progress screen.

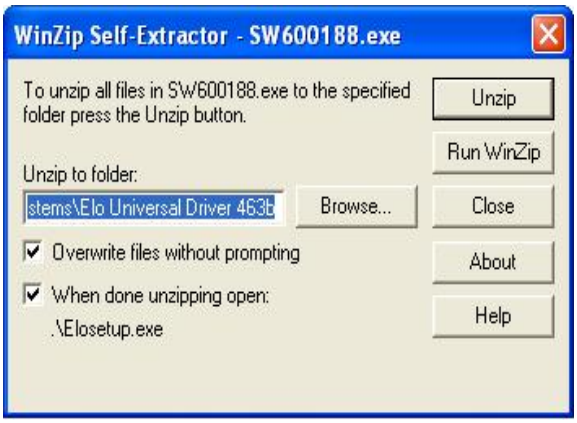


9. When installation is complete, click Finish and restart the system.

ELO Touch Screen Driver Installation

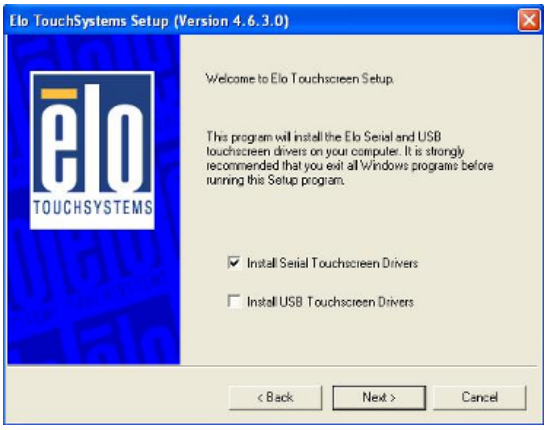


1. Locate and Run the sw600188.exe file on the CD in folder <CD>:\Driver\ POS-400 II\Touch\Elo

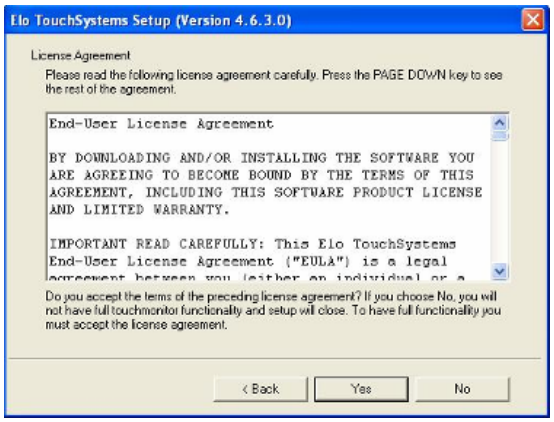


2. Click Unzip on the WinZip Self-Extractor window.

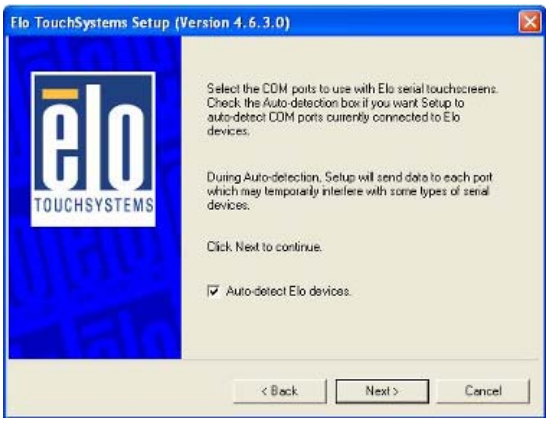
3. Select Default installation language then click Next.



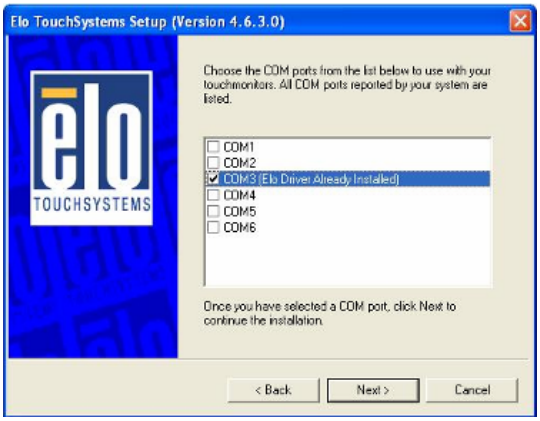
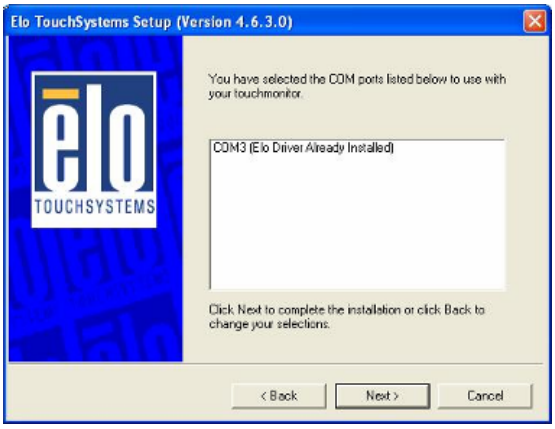
4. Select Install Serial Touchscreen Drivers and then click Next.



5. Click Yes on the License Agreement screen.



6. Select Auto-detect Elo devices then click Next.

<table>
<tr><td> 
</td><td> 
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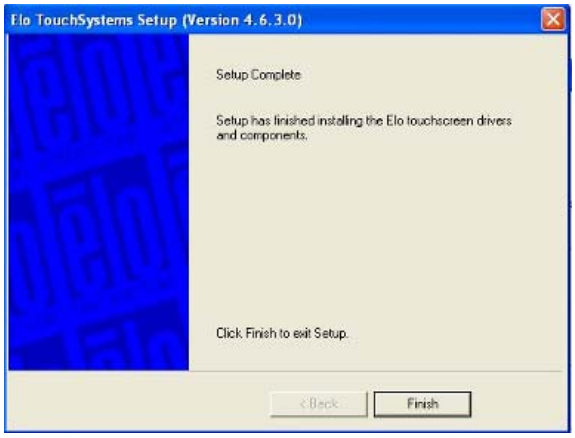
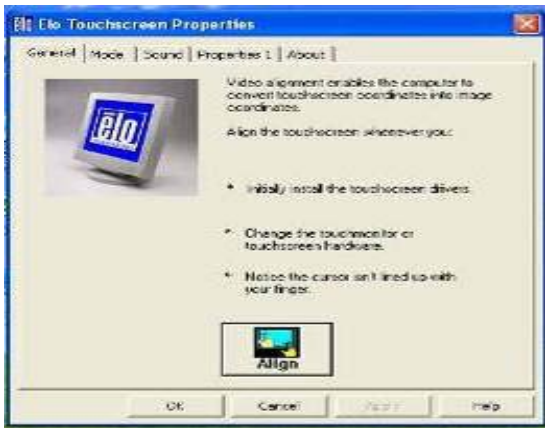
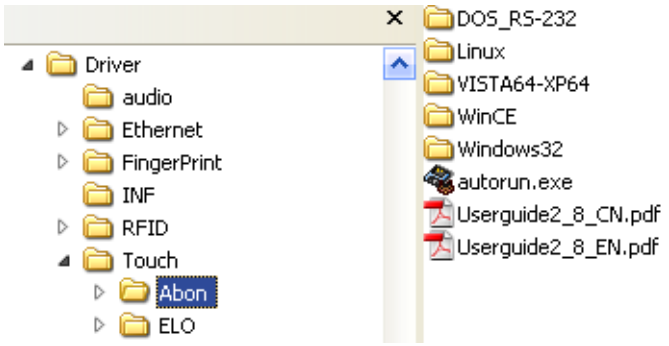
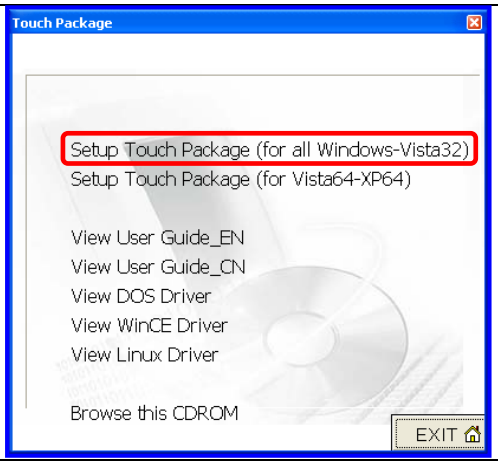
<tr><td>7. Select COM3 then click Next.</td><td>8. Click Next.</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>9. When installation is complete, click Finish and restart the system.</td><td>10. After the computer has restarted, click the Align button on the Elo Touchscreen Properties screen.</td></tr>
<tr><td>
</td><td></td></tr>
<tr><td>11. Calibrate the three red points as instructed.</td><td></td></tr>
</table>

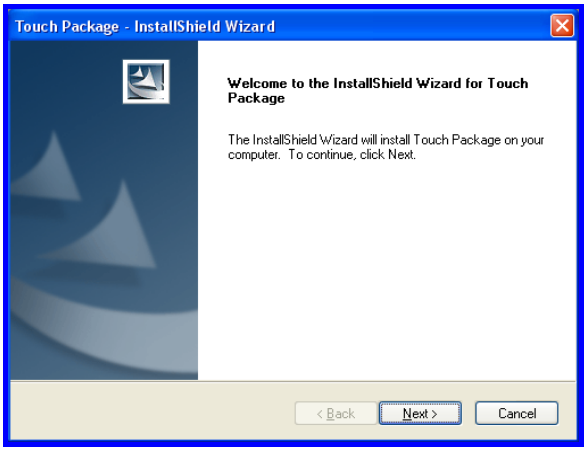
Abon Touch Screen Driver Installation



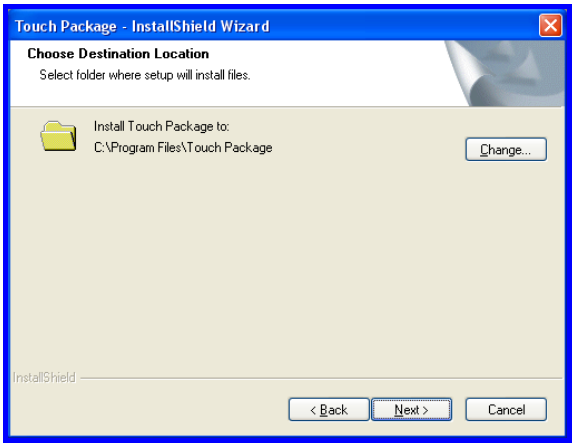
1. Locate and Run the autorun.exe file on the CD in folder <CD>:\Driver\POS-400 II\Touch\Abon



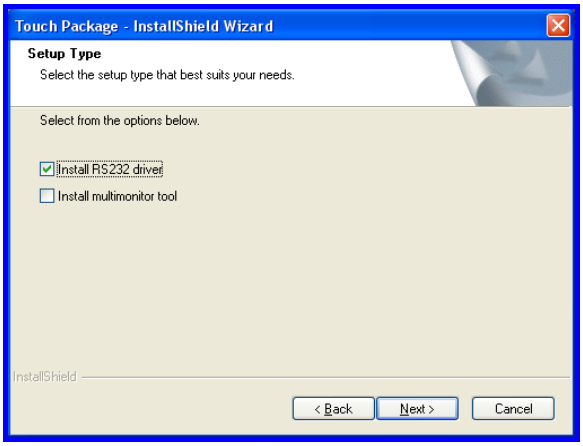
2. Select Setup Touch Package (for all Windows-Vista32.



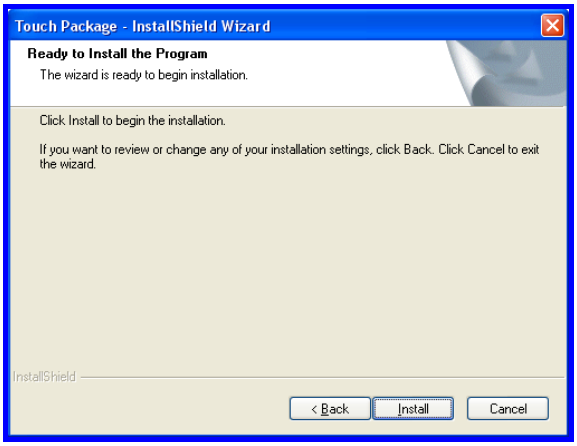
3. Click Next.



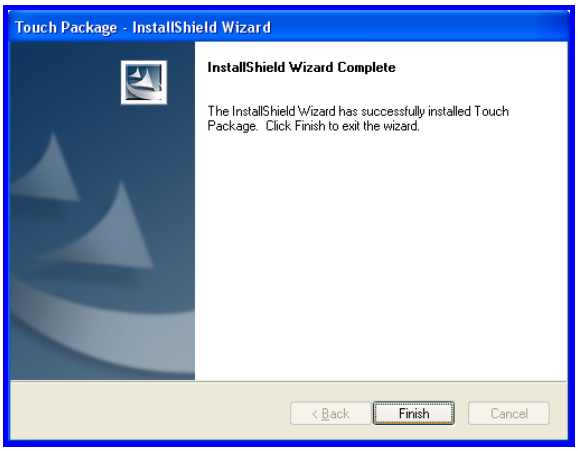
4. Click Next.



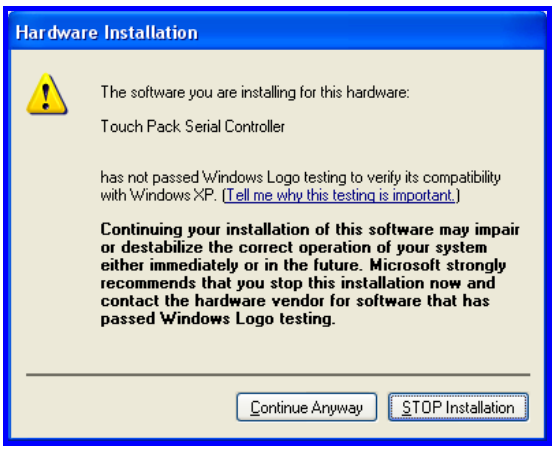
5. Select Install RS232 driver and click Next.



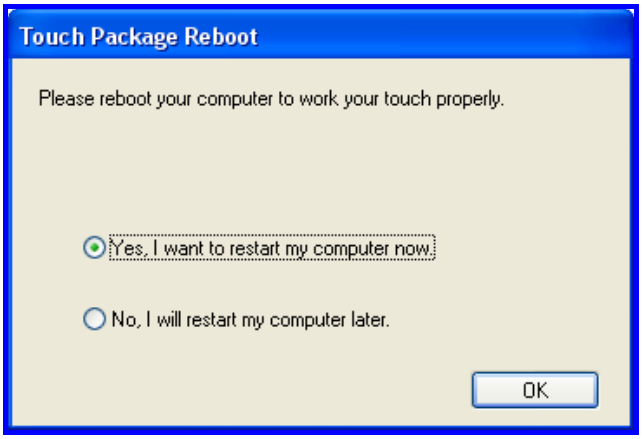
6. Click Install.



7. Click Finish.

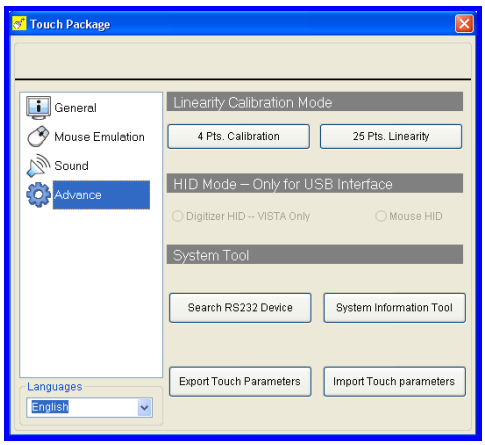


8. Click Continue Anyway.



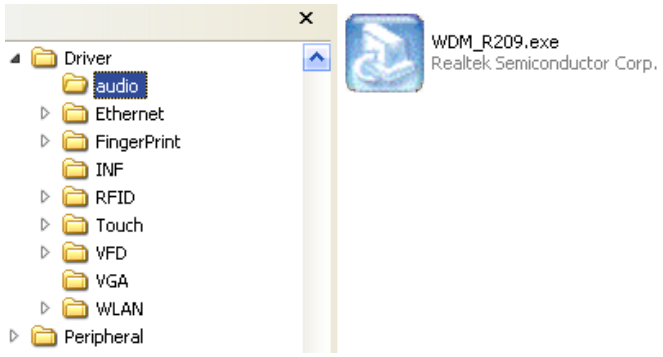
9. Click OK to reboot the system.

10. Run the Touch Tool on the desktop.

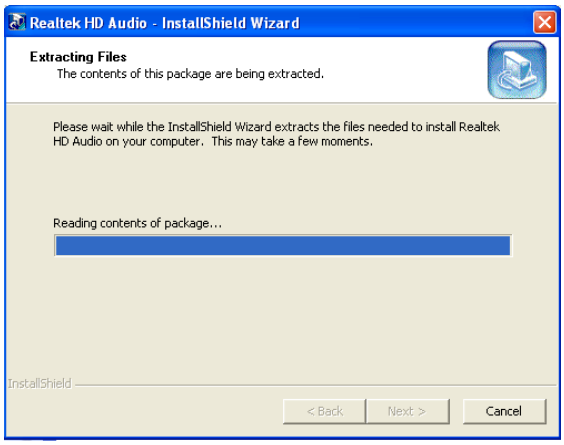


11. Select Advance, then click 4 Pts Calibration.

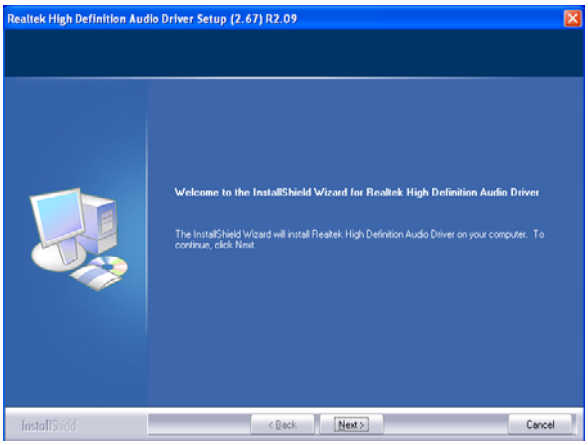
Audio Driver Installation



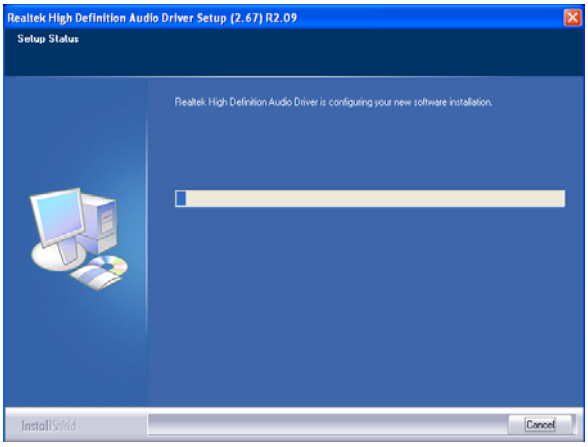
1. Locate and Run the WDM_R209.exe file on the CD in folder<CD>:\Driver\POS-400 II \ audio\WDM_R202



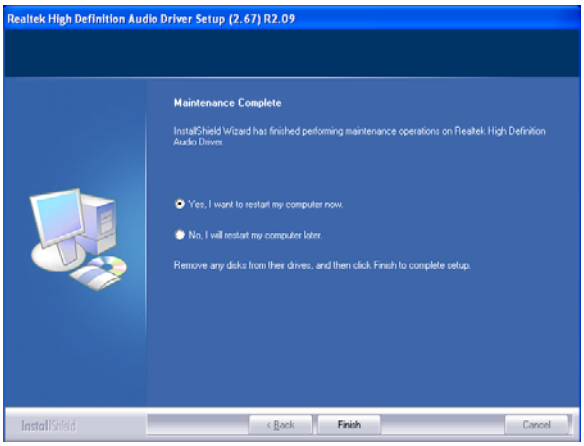
2. Wait a moment for extract install driver software on your computer.



3. .Click Next on the Welcome screen.

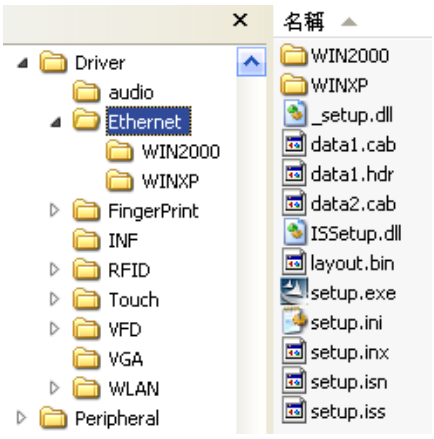


4. Wait until the Audio driver have been installed.

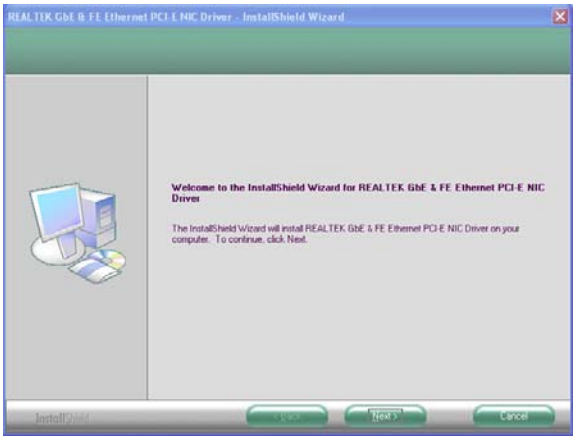


5. .When installation is complete, click Finish and restart the system.

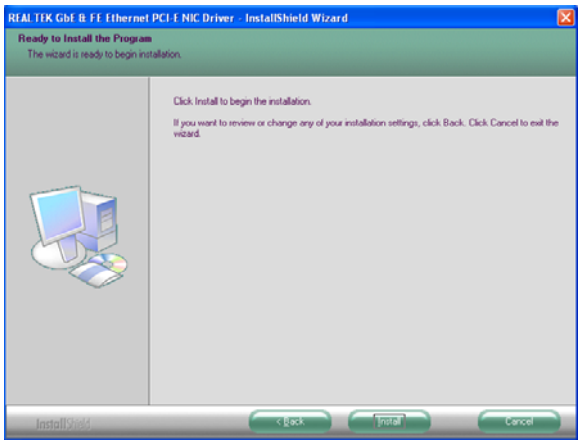
Ethernet Driver Installation



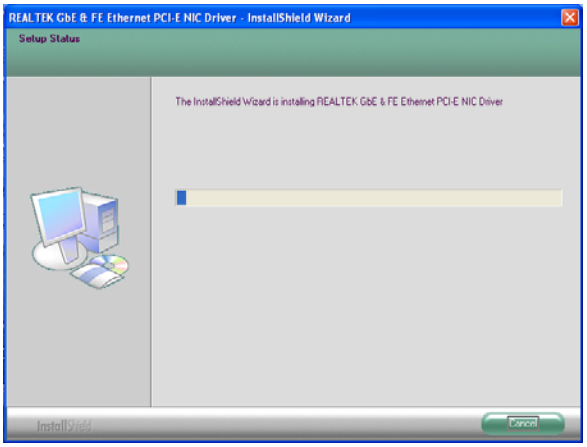
1. Locate and Run the setup.exe file on the CD in folder <CD>:\Driver\ POS-400 II\ LAN\PCIE_Install_5698_0822



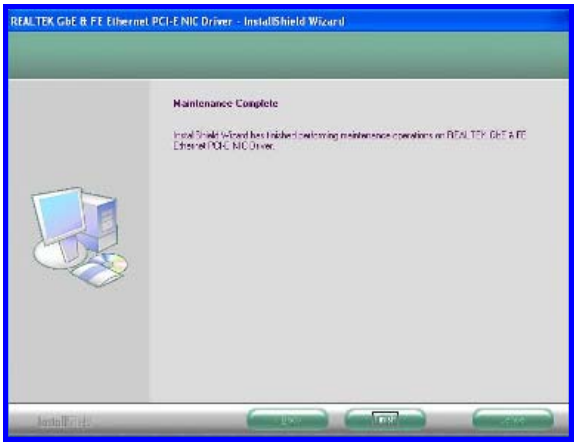
2. Click Next on the Welcome screen.



3. Click Install on the Ready to install screen.



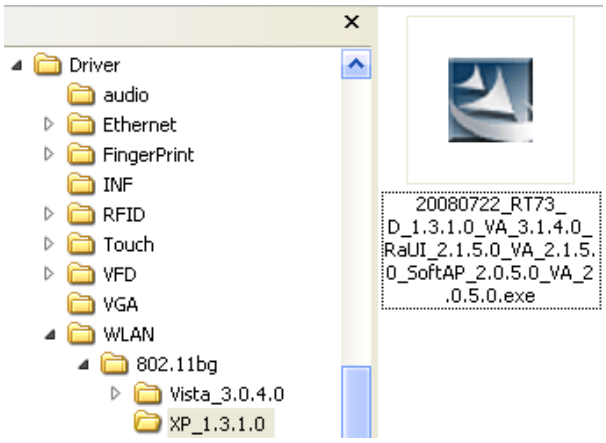
4. Wait until the Ethernet PCI-E NIC driver has been installed.



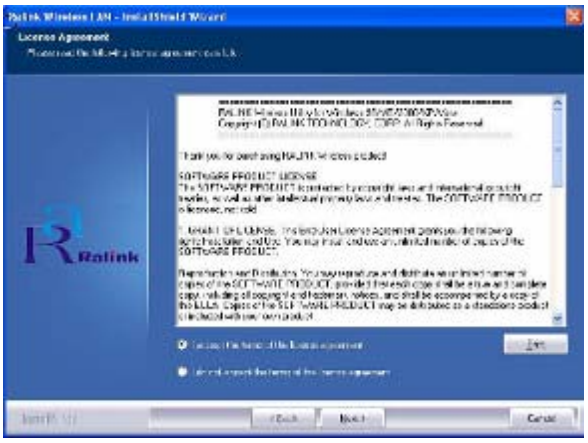
5. When installation is complete, click Finish.

Wireless LAN Driver Installation (optional)

1. First, plug in the USB WLAN Interface Module.

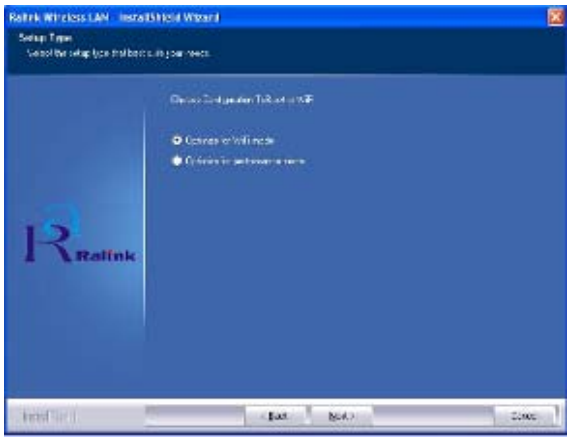


2. Locate and Run the setup.exe file on the CD in folder <CD>:\Driver\ Optional Module driver\ WLAN\802.11bg

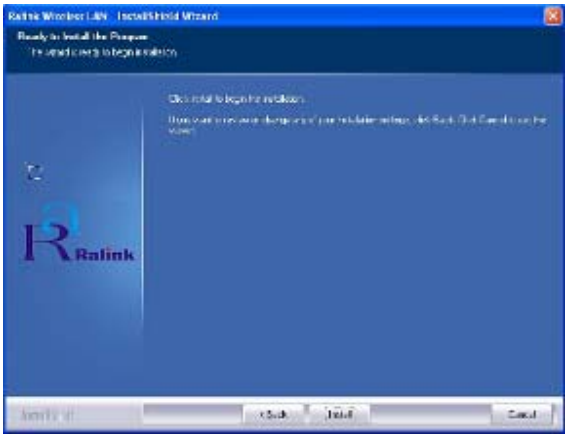


3. Click Next on the License Agreement screen.

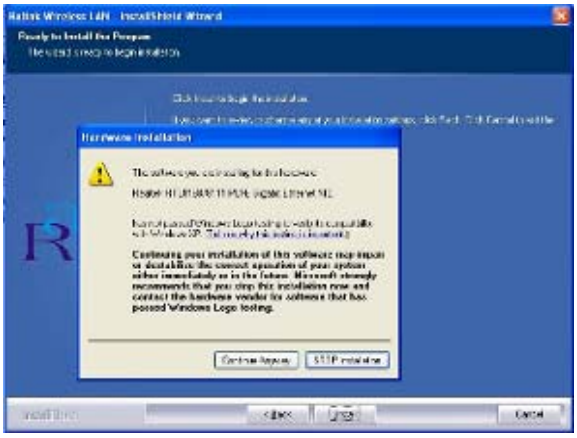
4. Select Ralink Configuration Tool then click Next.



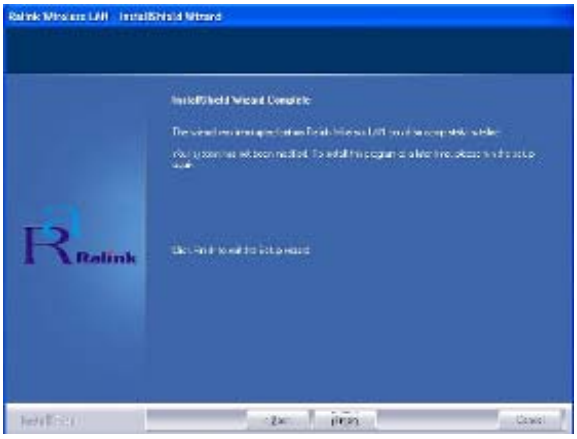
5. Select Optimize WiFi mode then click Next.



6. Click Install.



7. Click Continue Anyway on the Hardware Installation screen.

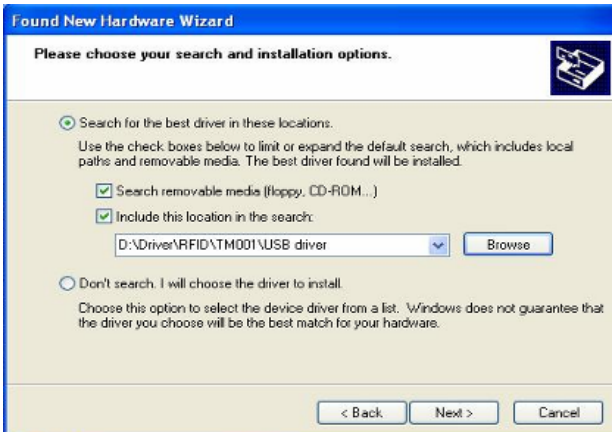
	
8. When installation is complete, click Finish.	

RFID Driver Installation (optional)

1. Plug in the USB RFID Module and wait for the following screen.

2. Select Yes, this time only and then click Next.

3. Select Install from a list specific location then click Next.



4. Click Next.

5. Click Finish to complete the USB Serial Converter installation.

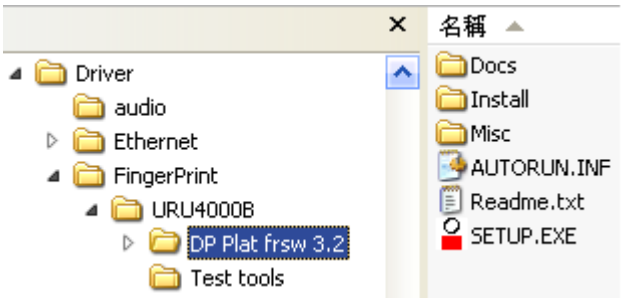
6. Repeat for the USB Serial Port installation.

MSR Driver Installation (optional)

1. First, plug-in the MSR module.
2. Reboot system to complete installation.

Fingerprint Reader Driver Installation (optional)

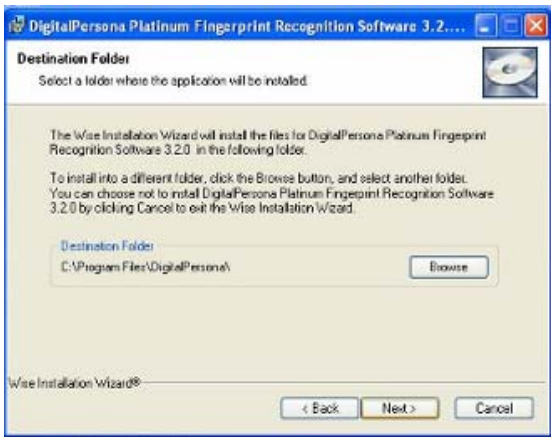
1. Plug in the 2-in-1 Fingerprint Reader and MSR module.



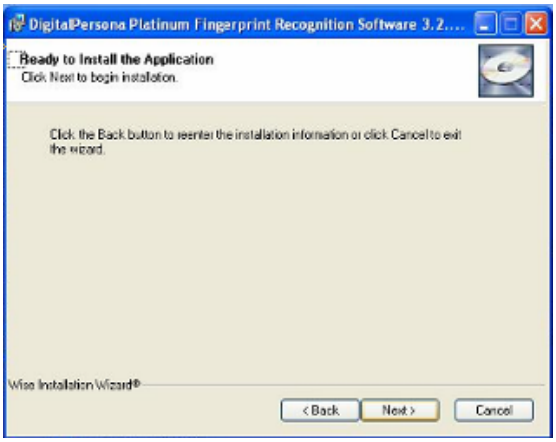
2. Locate and Run the setup.exe file in folder <CD>:\Driver\Optional Module driver\ FingerPrint\URU4000B\DP Plat frsw 3.2

3. Click Next on the Welcome screen.

4. Click Next on the License Agreement screen.

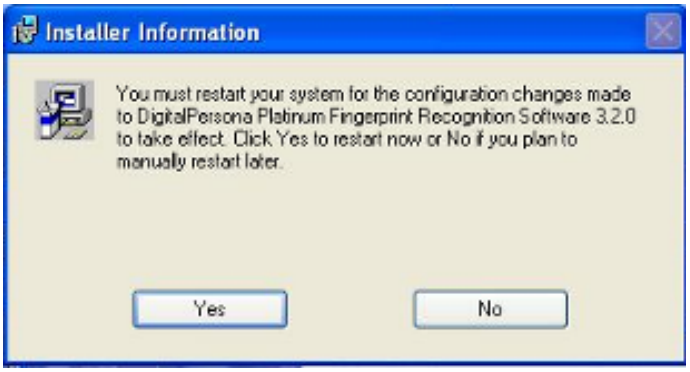


5. Click Next.



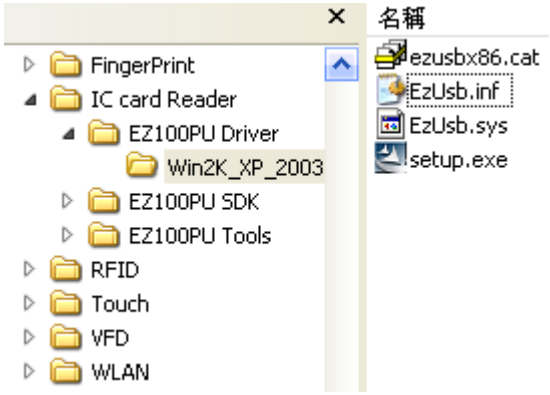
6. Click Next to begin installation.

7. Click Finish.

	
8. Click Yes to restart the system (required).	

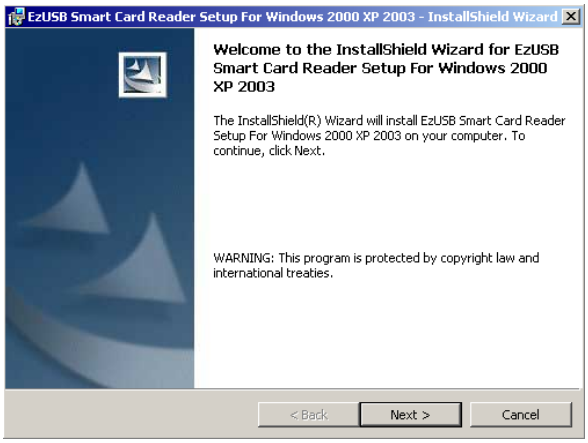
IC Card Reader Driver Installation (optional)

1. Plug in the 3-in-1 MSR, I-Button and IC Card Reader module.

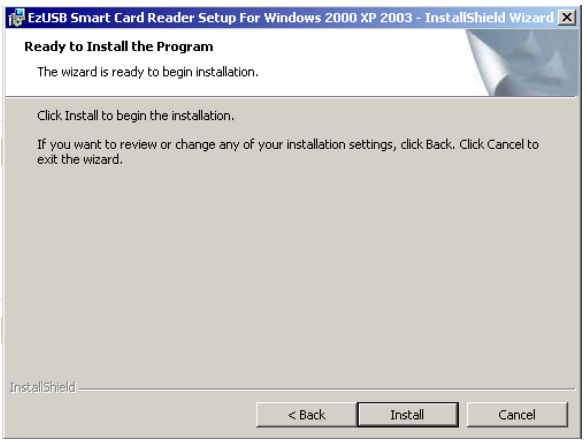


2. Locate and Run the setup.exe file in folder <CD>:\Driver\Optional Module driver\ IC Card Reader\EZ100PU Driver

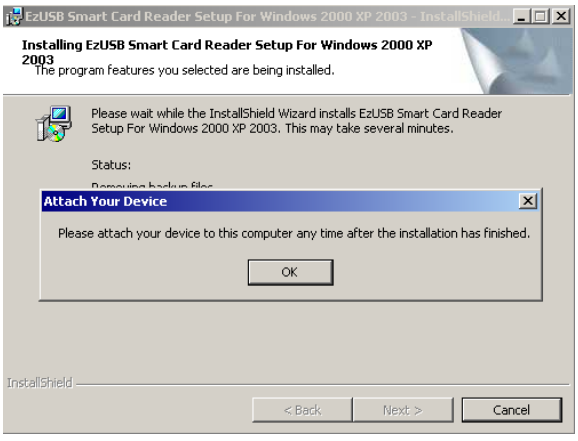
3. Select language, then click OK.



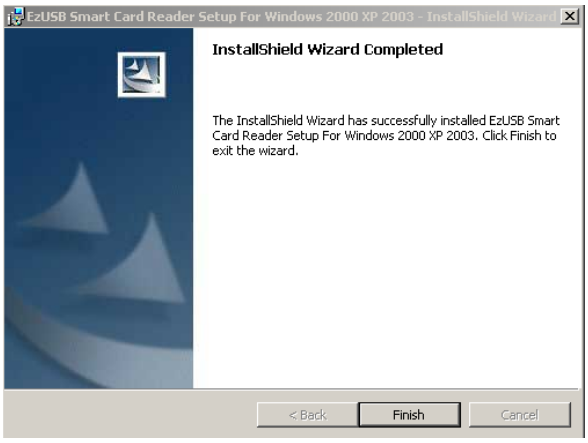
4. Click Next on the Welcome screen.



5. Click Install.

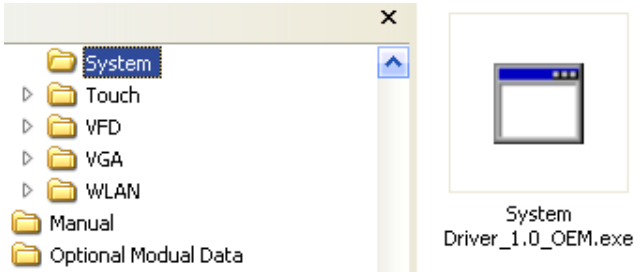


6. Click OK on the Note screen.

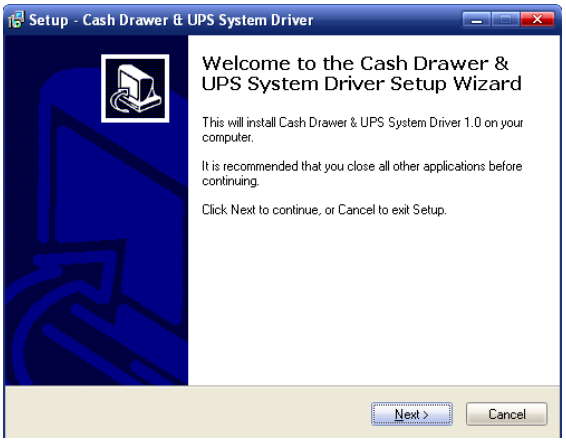


7. Click Finish.

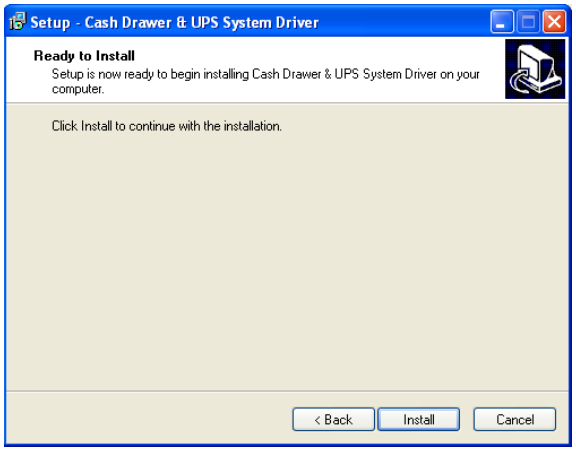
System Driver Installation (Required for Cash Drawer)



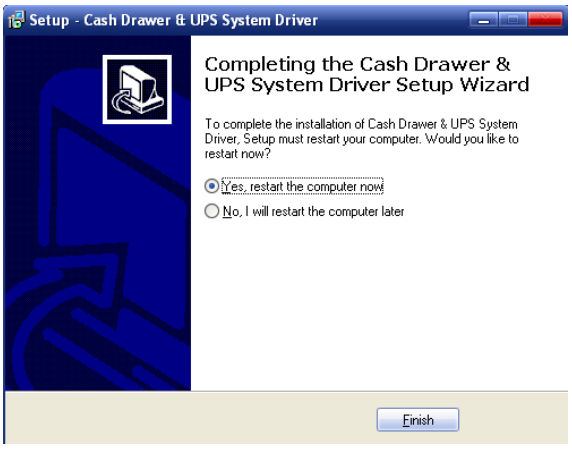
1. Locate and Run the setup.exe file in folder <CD>:\Driver\POS-400 Expander II\ System Driver



2. Click Next on the Welcome screen.



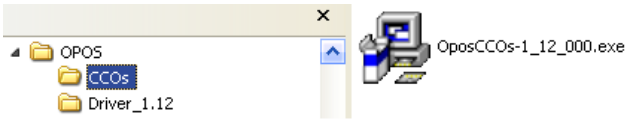
3. Click Install on the Ready to Install screen.



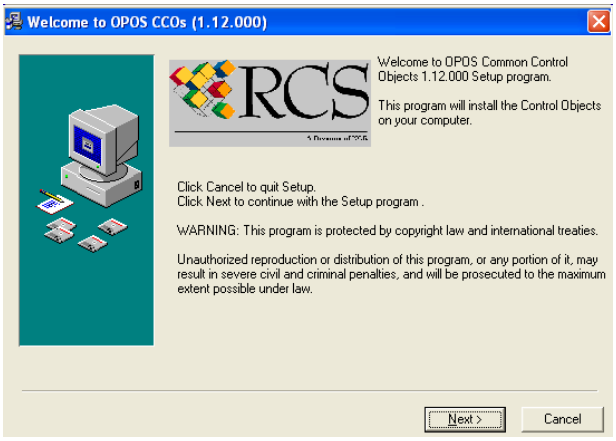
4. Click Finish on the Completing installation screen. A system restart is required to complete the installation.

OPOS CCO Driver Installation

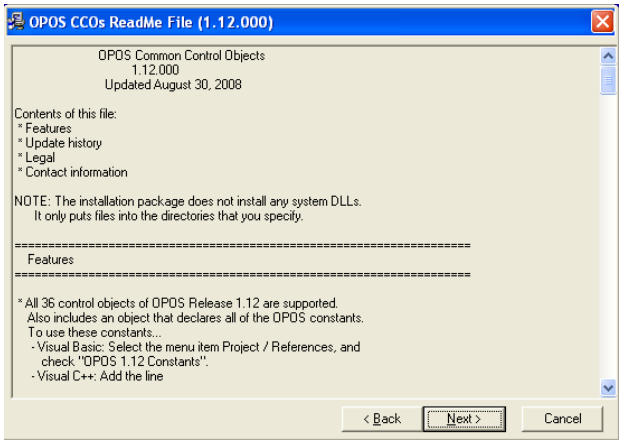
Before installing the OPOS CCO driver, please make sure the system driver has been installed.



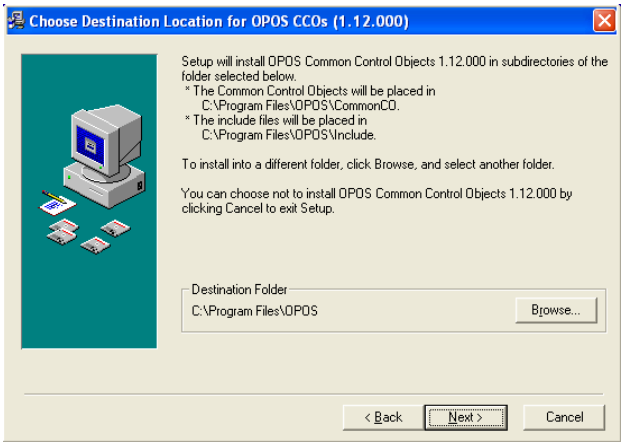
5. Locate and Run the OposCCOs-1_12_000.exe file in folder <CD>:\Driver\OPOS\CCOs



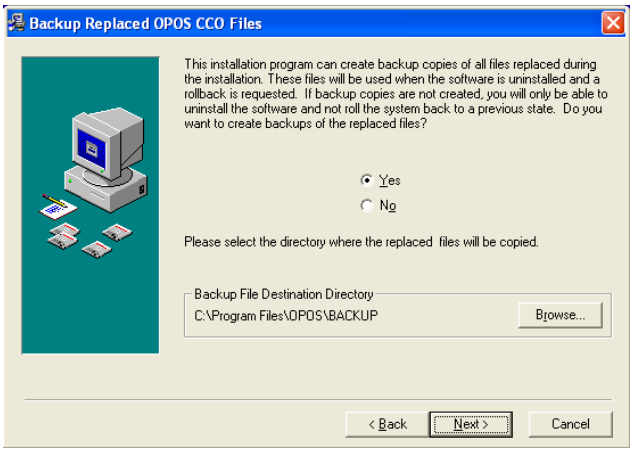
6. Click Next on the Welcome screen.



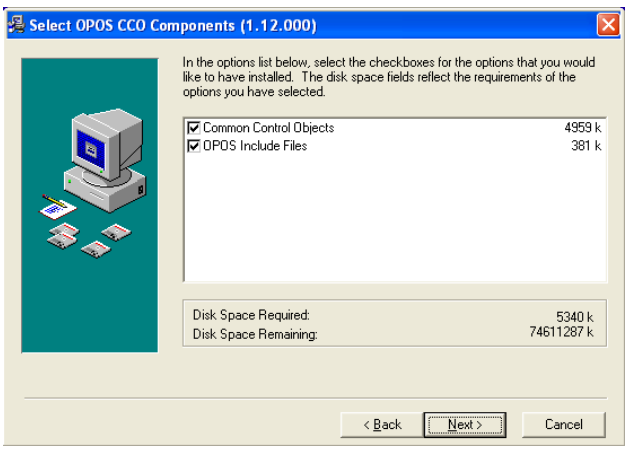
7. Click Next on the ReadMe screen.



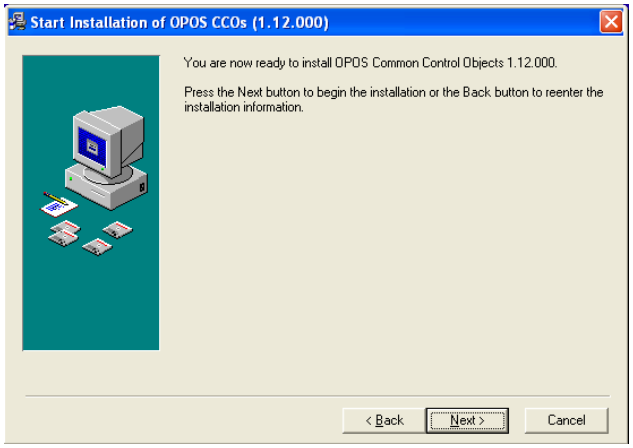
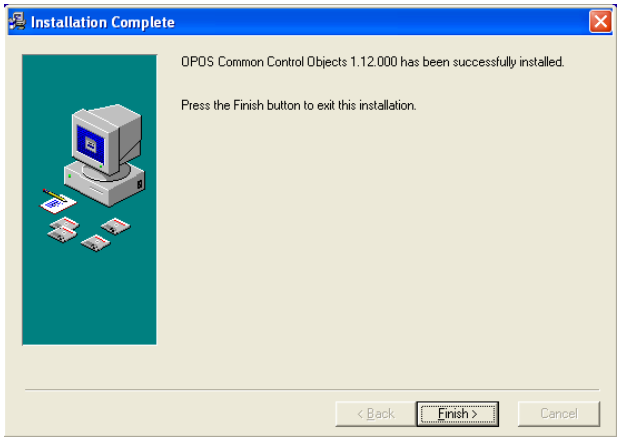
8. Select the Destination Location and click Next.



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

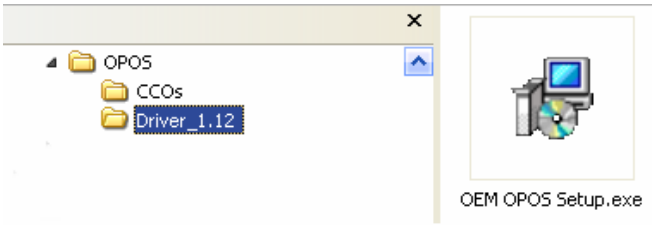
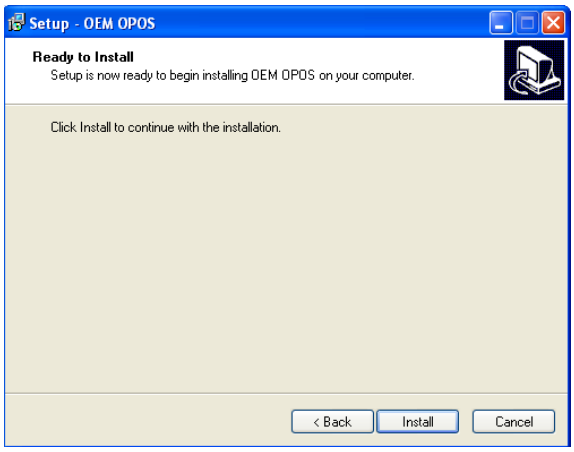


10. Select Common Control Objects and OPOS Include Files, then Click Next.

	
11. Click Next on the Start Installation screen.	12. Wait system registering the control object
	
13. Click Finish on the Installation Complete screen.	

OPOS Driver Installation

The OPOS driver for the POS-400 Expander II supports the Cash Drawer, MSR, I-Button (KeyLock), RFID, VFD (Line Display), UPS (Power). Before installing the OPOS driver, please make sure the system driver and OPOS CCO driver have been installed.

<table>
<tr>
<td> 
</td>
<td>
</td>
</tr>
<tr>
<td>14. Locate and Run the setup.exe file in folder <CD>:\Driver\OPOS\Driver_1.12</td>
<td>15. Click Next on the Welcome screen.</td>
</tr>
<tr>
<td> 
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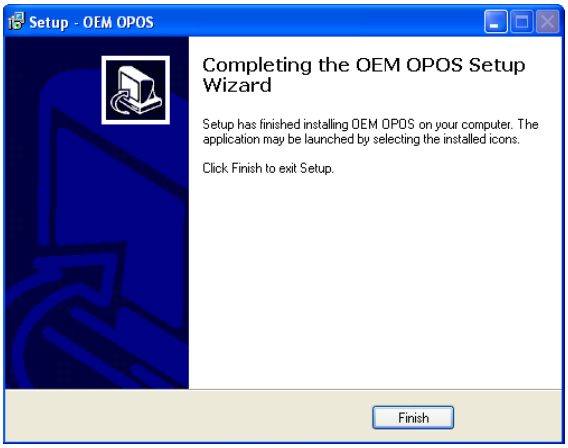
<td> 
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</tr>
<tr>
<td>16. Click Install on the Setup screen.</td>
<td>17. Click Finish on the Completing installation screen.</td>
</tr>
</table>

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 56053
#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_CD_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_CD_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 Visual Basic Cash Drawer Code for Windows

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

```
‘ Use inside a form’s code section and use Option Explicit
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

‘ A Form with a single button and one static text box
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click

        Dim DeviceHandle As Integer = 0, iBytesRtn As Integer
        Dim iRet As Integer, iDrawer As Integer, iStatus 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 ADV_OPEN_CTL_CODE As Long = &HDAF52400
        Const ADV_STATUS_CTL_CODE As Long = &HDAF52480

        Err.Clear()

        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
                Debug.Print("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
        Else
                ' Open Drawer #1
                iDrawer = 1
                iRet = DeviceIoControl(DeviceHandle, ADV_OPEN_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, 0)

                If (iRet = 0 Or iBytesRtn <> 1) Then
                        Debug.Print("Error writing to Cash Drawer Driver. Error" & Err.LastDllError)
                End If

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

                If (iRet = 0 Or iBytesRtn <> 1) Then
                        Debug.Print("Error writing to Cash Drawer Driver. Error" & Err.LastDllError)
                End If
```

```
                ' Get Drawer Status
                iRet = DeviceIoControl(DeviceHandle, ADV_STATUS_CTL_CODE, 0, 0, iStatus, 4, iBytesRtn, 0)

                If (iRet = 0 Or iBytesRtn <> 1) Then
                        Debug.Print("Error writing to Cash Drawer Driver. Error" & Err.LastDllError)
                End If

                If (iStatus = 0) Then
                        StatusText.Text = "Cash Drawer(s) Closed"
                Else
                        StatusText.Text = "Cash Drawer(s) Open"
                End If

                CloseHandle(DeviceHandle)
        End If
End Sub
```