ADVANPOS www.advanpos.com

HP-8500/8520
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 4.1_2011/07/04

How to Use This Manual

This manual contains information to set up and use the HP-8500/8520. 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, 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	PI-91X and AMB-6910 main board diagrams, locations of jumpers, and connectors.
Chapter 5	I/O board diagrams, locations of jumpers, and connectors.
Chapter 6	Installation instructions for the Intel chip set driver, video driver, touch screen tools, audio, LAN, RFID, Fingerprint, IC Card, AdvanPOS 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.

Copyright

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Product names mentioned herein may be trademarks and/or registered trademarks of their respective companies.

Patents and Trademarks

AdvanPOS trademark
Certificate No.: 01328466 (ROC patent)
Patent pending (European Union, Mainland China and USA)

H-POS (HP-8500/8520) Series documented list:

1. Sliding CPU Box
   Certificate No.: M 342010 (ROC patent)
   Certificate No.: ZL 2008 2 0300522.3 (Mainland China patent)

2. Detachable LCD Panel
   Certificate No.: M 342009 (ROC patent)
   Certificate No.: ZL 2008 2 0300411.2 (Mainland China patent)
   Patent pending (European Union and USA)

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-inch TFT touch screen
- Fanless operation with Intel® Luna Pier Dual core™/Penitum M/Celeron® M processor
- Magnesium-aluminum alloy shell for greater reliability
- Detachable PC box for easy maintenance
- Cable-less docking reduces clutter
- IP65 sealed front touch panel
- Convertible 2nd display options
- 6 x COM, 7 x USB (1 x 5V, 1 x 12V), 1 x CF II
- Flexible options: UPS, MSR, Fingerprint, IC card reader, I-Button, RFID, WiFi and Bluetooth
- RoHS compliant

Specifications

HP-8500/8520 System Configuration

CPU (µPGA)	HP-8500:Intel® Pentium M/Celeron M (up to 2GHz) HP-8520:Intel® Luna Pier Processor™ 1.66~1.8 GHz with 1M L2 Cache
System Chipset	HP-8500:Intel 910GME+ICH6M or Intel 915GME+ICH6M HP-8520:Intel D510+ICH8M or D525+ICH8M
System Memory	Supports maximum 2 x 1GB SO-DIMM DDR2 SDRAM (up to 2GB) for HP-8500 Supports maximum one SO-DIMM DDR2 SDRAM up to 4GB for HP-8520
Video Memory	Supports Intel DVMT, shared system memory
Compact Flash	Supports 1 x Compact Flash Card Type II
HDD	HP-8500:1 x internal 2.5-inch 160GB SATA hard disk drive (up to 250GB) HP-8520:1 x internal 2.5-inch 160GB SATA hard disk drive (up to 250GB)
Power	External 90W 19VDC power adapter (100~240VAC,50~60Hz,4.74A)
Current/Power Usage	Maximum 0.4A / 45W with 1.5G CPU, 1GB DDRII and 80G HDD Standby 0.23A / 25W with 1.5G CPU, 1GB DDRII and 80G HDD Typical 0.28A / 35W with 1.5G CPU, 1GB DDRII and 80G HDD
OS Support	Windows® 2000 / Windows® XP Pro Embedded / WEPOS® / Windows® POS Ready 2009 / Linux® / Windows® 7 Pro Embedded (for HP-8520 only)

LCD Touch Panel

Resolution Size	15-inch TFT LCD / 1024 x 768
Brightness	250 cd/m^2 or 350 cd/m^2 (adjustable)
Touch Screen Type	ELO or Abon 5-wire resistive or Surface Capacitive touch

I/O Ports

USB Ports	Supports 7 USB 2.0 ports for future expansion (3 x internal, 4 x external) Rear side x 4 (1 x 12V power USB, 1 x 5V power USB)
Serial Ports	4 x external: COM1, COM2, COM5 (D-SUB); COM6 (RJ-45) 2 x internal: COM3 for touch screen, COM4 for 2nd display
Parallel Port	1 x bi-directional parallel port (D-SUB25)
2nd Display Port	1 x display port for 2nd LCD/VFD display (on IOTR board)
Cash Drawer Port	1 x 12V or 24V RJ11 connector (maximum 2 drawers)
LAN Port	1 x Giga LAN (10/100/1000Mbps Base-T), RJ45 connector
Audio Port	1 x Line-out
Speaker	2 x internal stereo 2W speakers

Mechanics and Environment

Construction	Die-cast, magnesium-aluminum alloy housing
Dimensions	300(D) x 380(W) x 387(H) mm
Housing Color	Silver, Black, Silver/Black, Red/Black, Blue/Silver
Net Gross Weight	14 Kg (with VFD)
Operating Temperature	0 °C ~ 40 °C
EMI/Safety	CE, FCC, CB (HP-8500 only), RoHS

Lithium-ion Rechargeable Battery (optional)

Battery Type	4S – 1P 18650 cell Li-Ion pack with protection circuit	
Battery Dimensions	Height with tube	65±0.2 mm
	Thickness with tube	18.1+0.3/-0 mm
Battery Weight	40±5g	
Full Capacity	1100mAh	
Typical Capacity	1050mAh	
Charging Voltage	3.6±0.05V	
Maximum Charge Voltage	14.6V	
Maximum Current of Continuous Discharge	4.5A (5~10 minutes)	
Charging Time	Approximately 2.5 hours	
Operating Temperatures	0 °C ~ 45 °C (charging), -20 °C ~ 60 °C (discharging)	

Package Contents

The following items come standard with the HP-8500/8520:

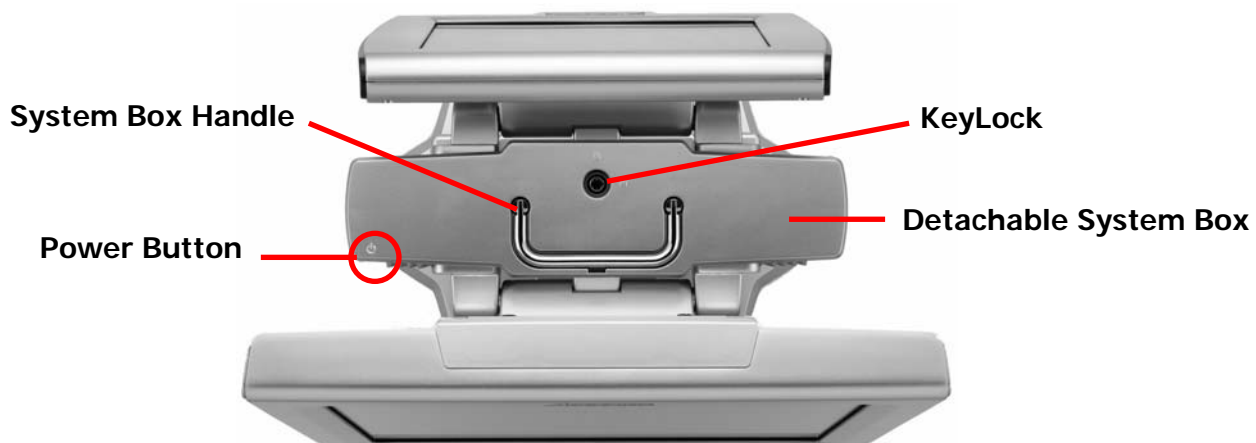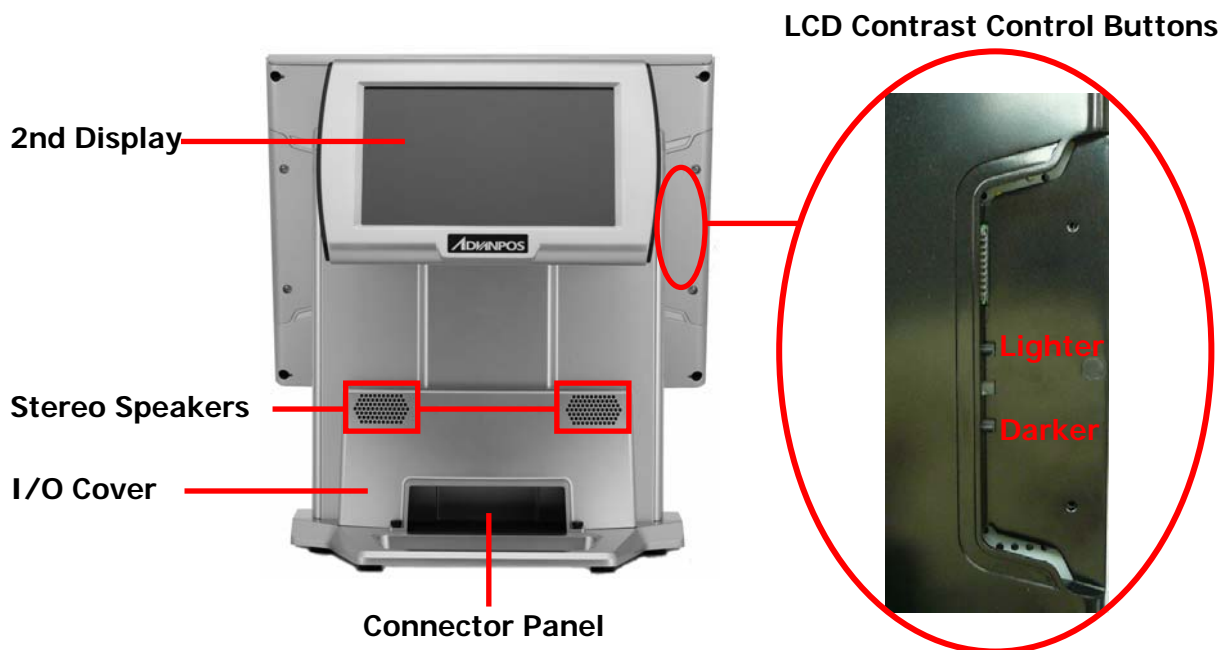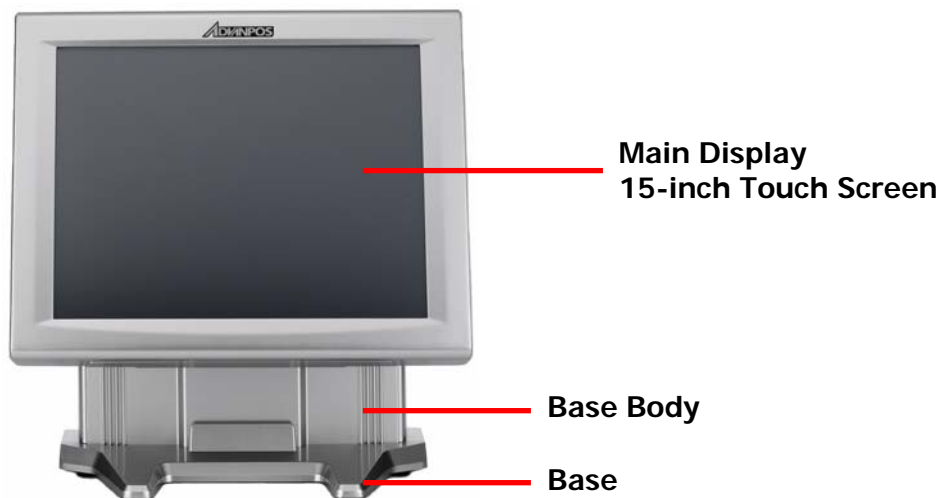|			
POS System		**Power Adaptor**	
Utility and Main Board Chipset Driver CD		**AC Power Cord**	
COM6 to RS-232C Adaptor Cable			

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 for with ISO 15693/14443A/ 14443B
- Uninterruptible Power Supply (UPS): internal battery pack (10 minutes run time after power loss)
- VFD Customer Display: 9 cm height, 2 lines 20 characters each
- 2nd Customer Display: 8.9-inch or 15-inch, tempered glass LCD or touch LCD

  * Available in front or side swipe formats.

Base System

Before you begin, take a few moments to become familiar with the HP-8500/8520.

Main Display
15-inch Touch Screen

Base Body

Base

LCD Contrast Control Buttons

2nd Display

Lighter

Darker

Stereo Speakers

I/O Cover

Connector Panel

System Box Handle

KeyLock

Power Button

Detachable System Box

Expandable Main Display

Three 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.
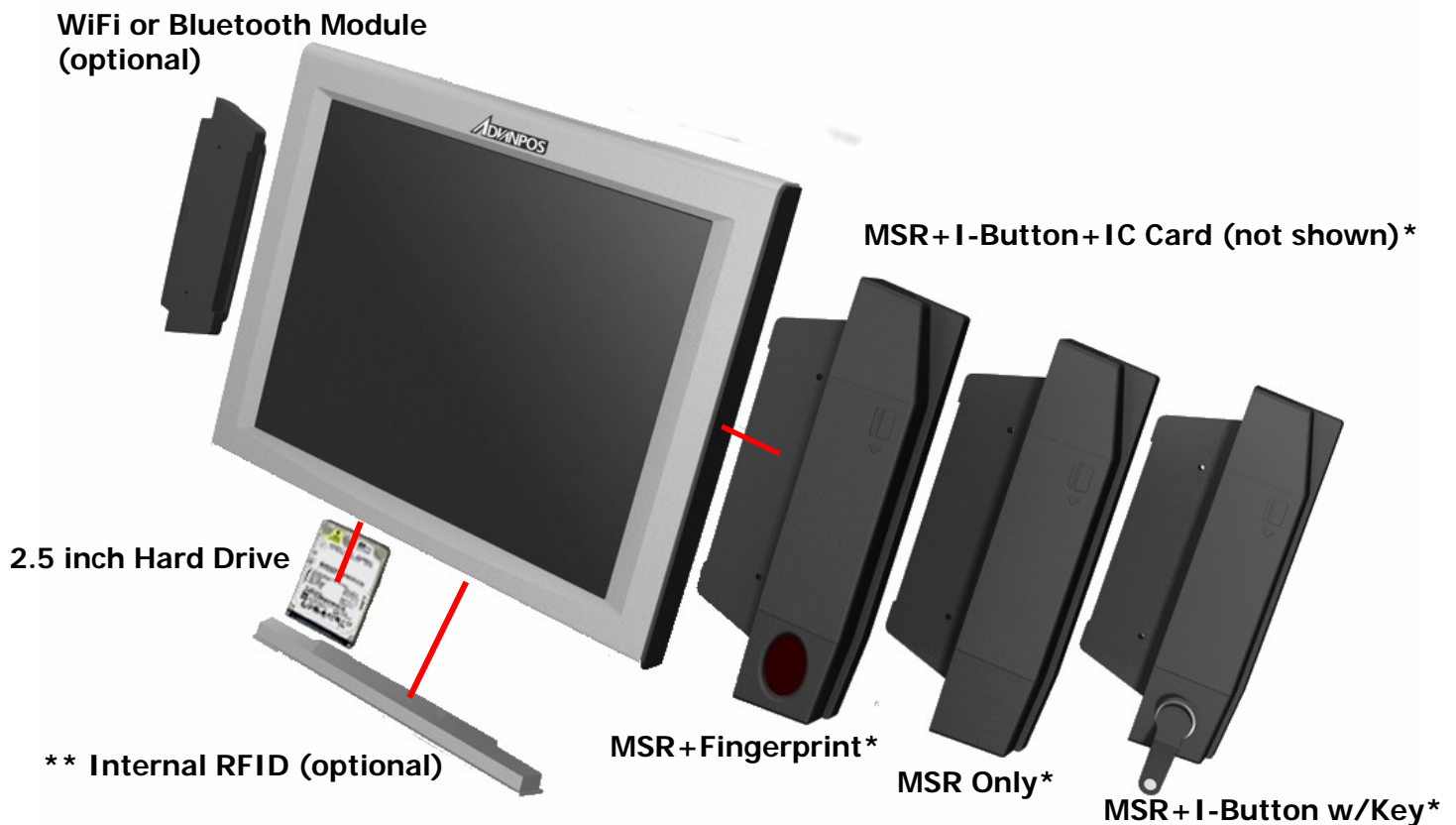
- WiFi or Bluetooth module (USB interface)
- RFID module (USB interface)
- MSR (PS/2 interface)
- MSR+ I-Button (PS/2 interface)
- MSR+ Fingerprint (MSR for PS/2 interface, Fingerprint for USB interface)
- MSR+ I-Button + IC Card Reader (MSR and I-Button for PS/2 interface, IC Card Reader for USB interface)

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.

WiFi or Bluetooth Module (optional)

MSR+I-Button+IC Card (not shown)*

2.5 inch Hard Drive

** Internal RFID (optional)

MSR+Fingerprint*

MSR Only*

MSR+I-Button w/Key*

* MSR Modules available in side or front swipe formats.
** RFID Module available in bottom or front contact format

Convertible Rear Mount 2nd Display (optional)

The rear mount 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.

Three types of rear mount display choices are available: a 8.9-inch LCD monitor, a 15-inch LCD monitor, and a 9 cm high, 2 lines with 20 characters each VFD.

The rear mount is located at the opposite side of the base body and connects with the 2nd display port for operation. Whether installing a VFD, 8.9-inch LCD or 15-inch LCD, there is no need to change any settings on the main board or I/O board.

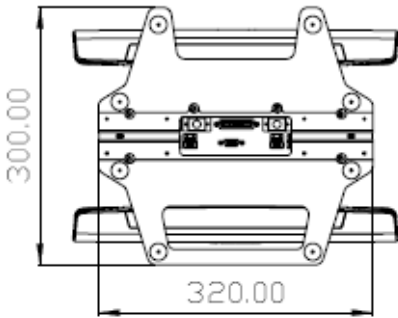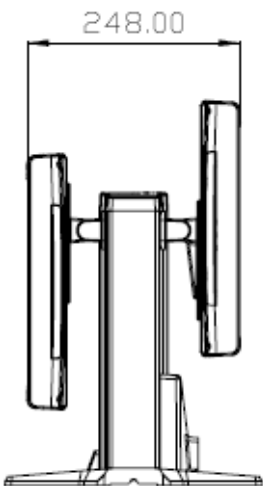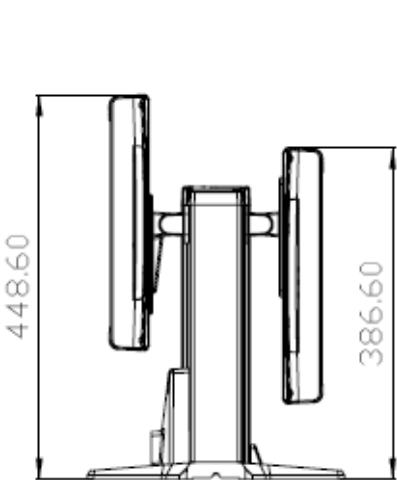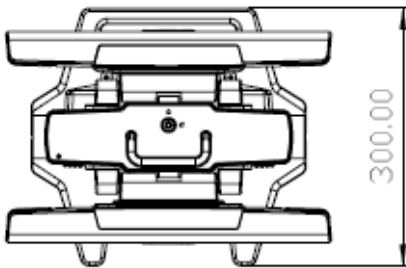**Rear Mount 2nd display choices:**
- **8.9-inch LCD (shown)**
- **15-inch LCD**
- **9 cm VFD**

8.9-inch LCD OSD Control Buttons

Lighter
Darker
Menu
Power

HP-8500/8520 with 15-inch 2nd Display Dimensions

(Unit: mm)

300.00

379.40

448.60

386.60

248.00

300.00

320.00

Connector Panel

The HP-8500/8520's primary connector panel is located at the rear. To clearly see the connector panel you must remove the I/O cover.

The 2nd display port is located on the HP-8500/8520 IOTR board. To clearly see the 2nd display port you must remove the system box. The display signals are transferred via a 2nd display cable from the port to the rear mount 2nd display.

2nd Display Port
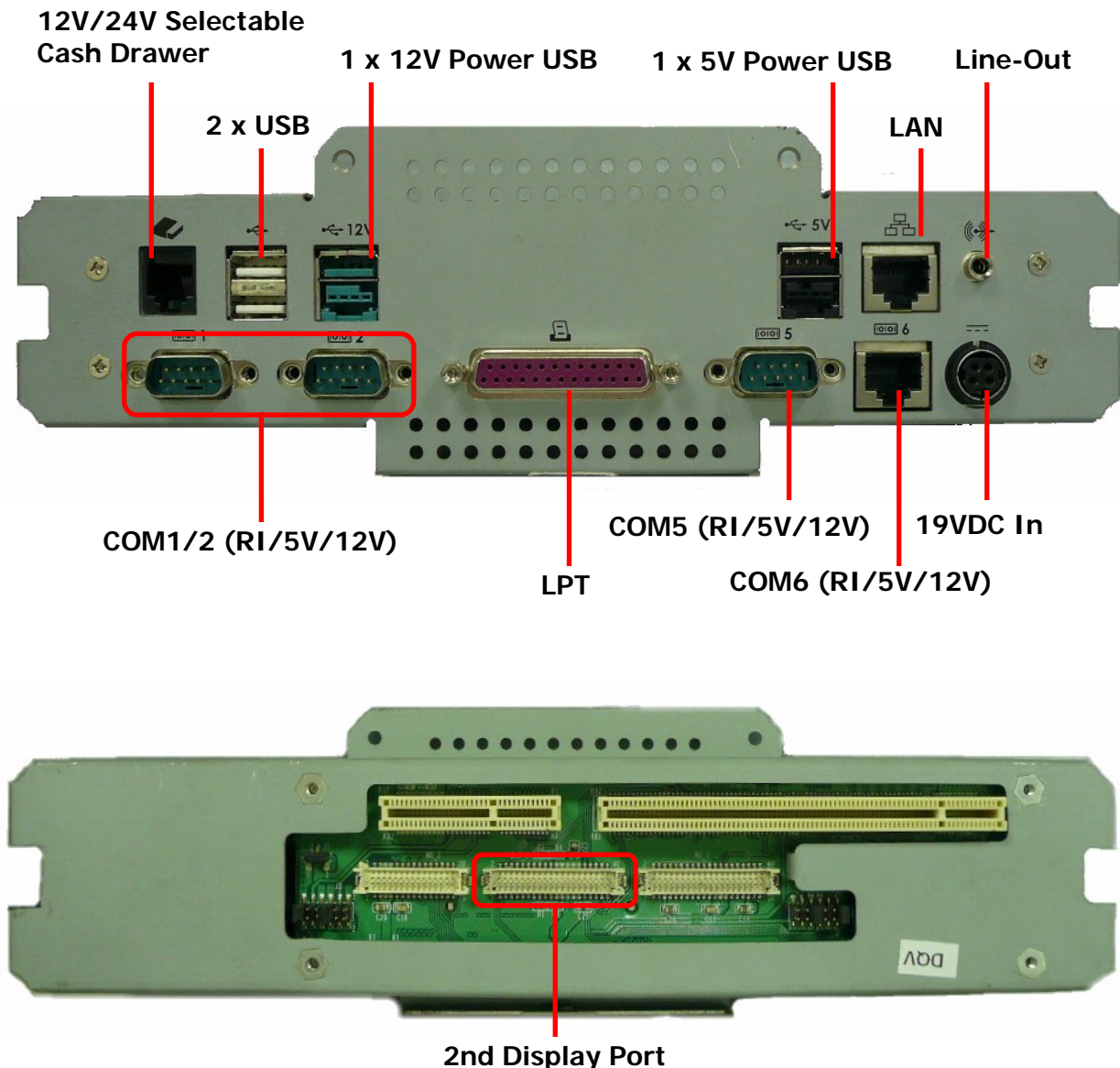
Chapter 2   Standard Hardware and Upgrades

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.

# Removing and 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.
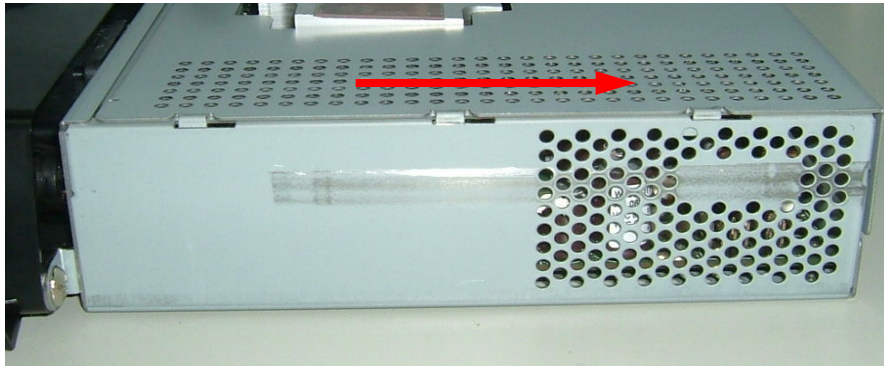
3. Unlock the system box.
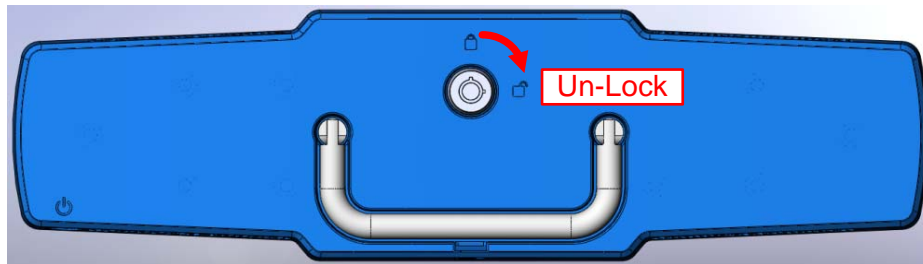
4. Raise and slowly pull on the handle to remove the system box in the direction of the arrow.

5. Remove the two screws indicated at the rear of the system box.

6. Slide the system box cover in the direction of the arrow, then lift off and set aside.

Clearing CMOS

The HP-8500/8520's configuration (CMOS) may occasionally be corrupted. If it is, it will be necessary to clear the CMOS memory using jumper JP4 for HP-8500 or jumper J2 for HP-8520. Please refer to Chapter 4 for the exact JP4 or J2 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 JP4 jumper box on the PI-91X main board for HP-8500 or the J2 jumper box on the AMB-6910 main board for HP-8520.

5. For HP-8500:
Remove the jumper shunt from pins 2-3 and place over pins 1-2. Wait 60 seconds to allow the CMOS to clear, then remove the jumper shunt and place it back in its original position over pins 2-3.

    For HP-8520:
Remove the jumper shunt from pins 1-2 and place over pins 2-3. 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.

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

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.

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3. Remove the system box and cover.

4. Locate the Compact Flash (CF) card socket in the side of the system box.

5. Insert the CF card into the socket, pressing firmly until the card release button is fully extended.

6. Replace the system cover and box.

7. 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.

Additional Memory Installation

The memory sockets on the main board can be populated with up to two industry-standard DIMMs. The HP-8500/8520 comes standard with at least one preinstalled DIMM. To achieve maximum memory performance, up to 2GB (HP-8500)/4GB (HP-8520) of memory can 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.

📝 **NOTE:**   There are two DIMM sockets on the main board: U11 is located on the top side, while U23 is located on the bottom (below the RAM cover).

To replace the memory card on the main board's top side, the system box cover must be removed.

If the system has a UPS installed, the battery connector and battery pack must first be removed to gain access to the memory sockets. Please refer to the Uninterrupted Power Supply Installation section.

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3. Pull out the system box and set it upside down. Remove the indicated screw to slide the RAM cover off.


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.

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5. Insert the additional 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.
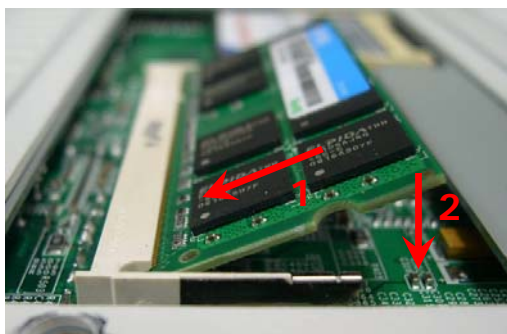
6. Replace the RAM cover, then replace the box.

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.

Changing the CPU on the PI-915 Main Board (HP-8500 only)

The HP-8500 has two main board options, one features the 910 chipset which has the CPU directly mounted on the main board, the other is the 915 chipset with a PGA socket-type CPU. Standard equipment is a Celeron M 1.5GHz CPU, but the HP-8500 is upgradable to 2GHz.

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.

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

3. Remove the system box and cover.

📝 **NOTE:**   Before installing the CPU to the PI-915 main board, please make sure the CPU FSB frequency matches the JP3 function definition. Refer to the Main Board Configuration section for the JP3 description.
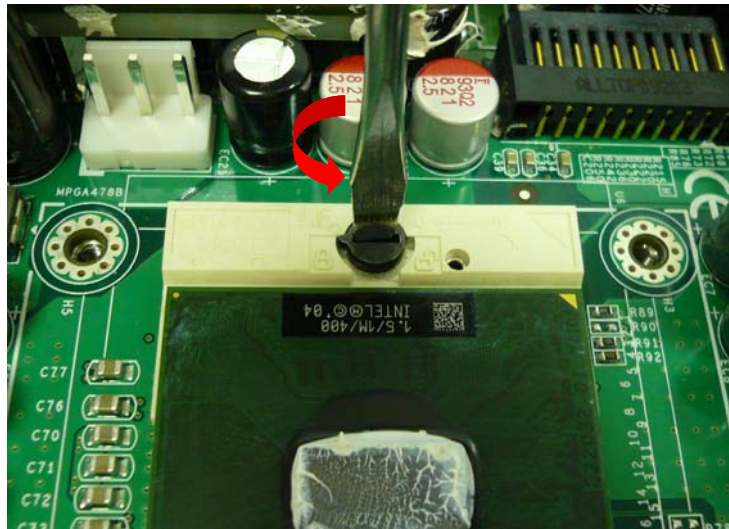
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4. Remove the 4 screws that secure the heatsink, paying special attention to its original position so that you can place it back in its exact position.
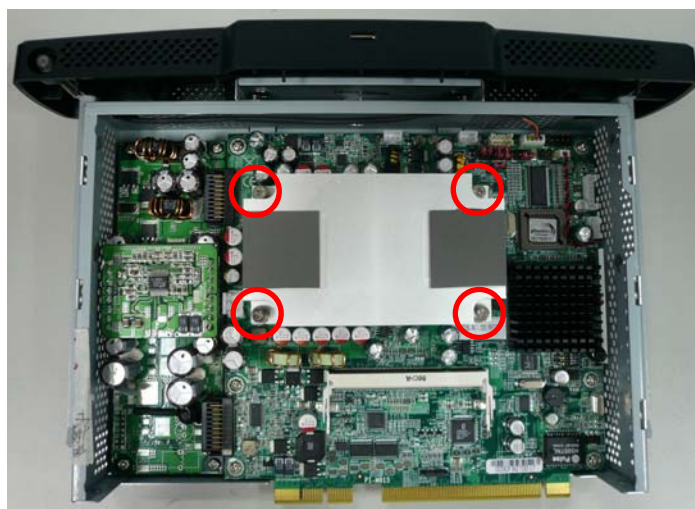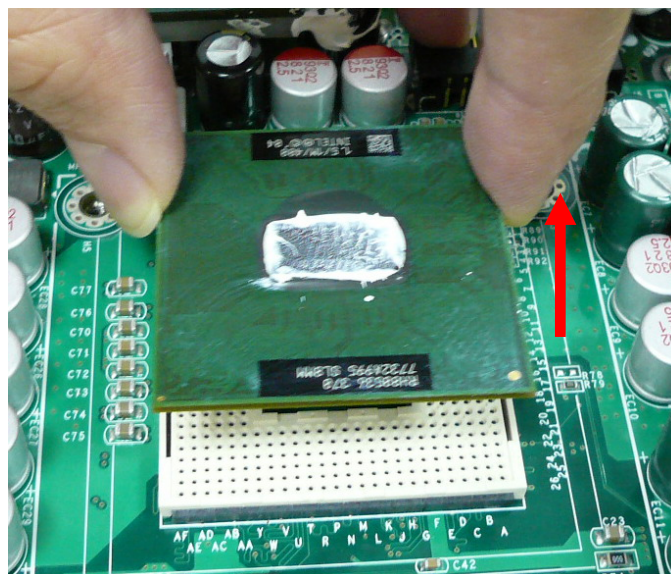
5. Locate the CPU socket. One side of the socket has a locking mechanism with a turn-screw that secures the CPU.
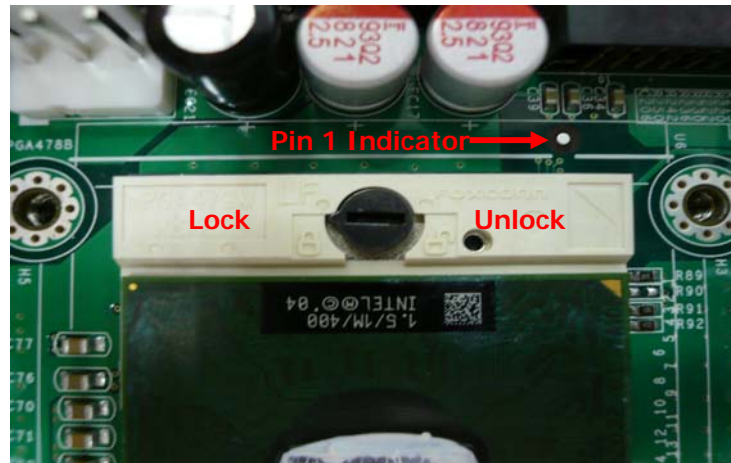
6. To release the current CPU, unlock the turn-screw with a screwdriver to the unlock position.

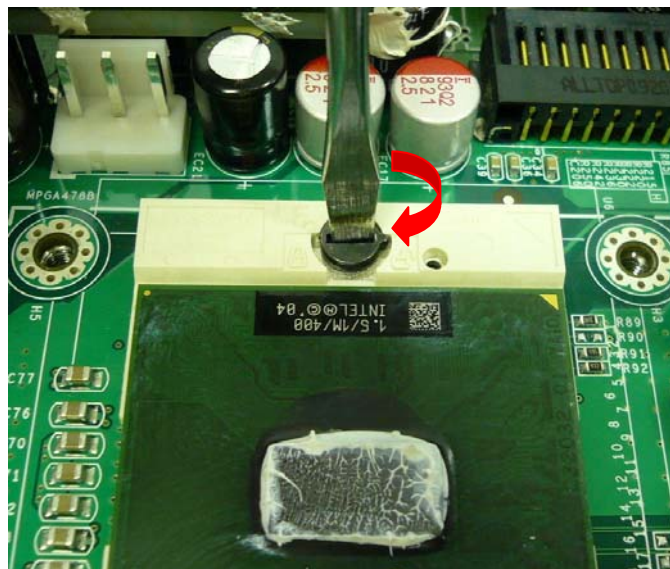7. Carefully lift the CPU straight up and out of the socket.

8. Lower the replacement CPU into the socket and make sure the Pin 1 marker on the corner of the CPU corresponds with the Pin 1 Indicator of the socket.

9. Once the CPU is firmly in place, lock the turn-screw to the lock position.

10. Reattach the heatsink, taking special care to place it in its original position, and secure with its four screws.

| | NOTE: | When the PI-915 main board's heatsink is installed, please note that the bottom of side B must be placed over the CPU. |

Ensure the heatsink and the top surface of the CPU are in total contact by using silicon gel to prevent the CPU from overheating. Overheating may result in unstable system performance.

PI-915 Heatsink Side View

11. Replace the system box and cover.

12. Reconnect the power cord and any external devices, then turn on the system. The system should automatically recognize the replacement CPU device when the system power is turned on.

| | NOTE: | Should you would like to change HP-8500 as HP-8520, please must order whole CPU BOX with Luna Pier solution to replace PI-915 CPU BOX. |

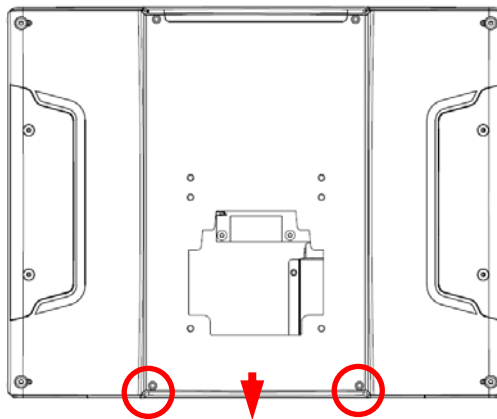# Removing and Replacing the SATA Hard Disk

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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.
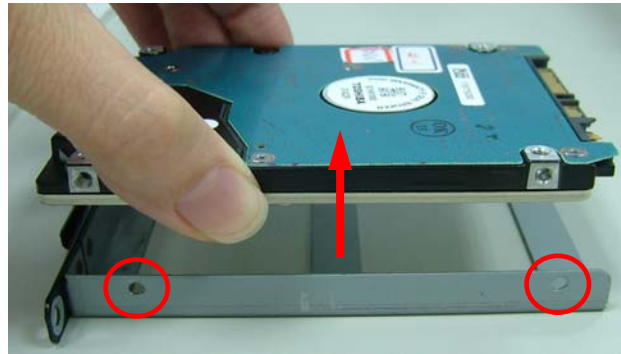

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3. From the bottom of the flat panel's rear side, remove two screws and detach the cover.

4. For easier access, tilt the panel back on its hinge. Remove the two 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

## Uninterrupted Power Supply (UPS) Installation

Adding UPS to the HP-8500 system not only requires installation of the battery pack, but also replacing the DC-DC board to one with a charger function. View the following photos to see how to distinguish between a DC-DC board with a charger and one without a charger.
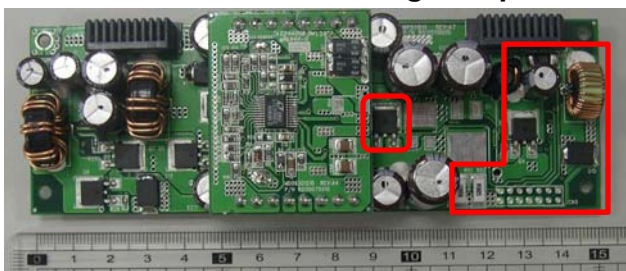
DC-DC Board without Charger Top
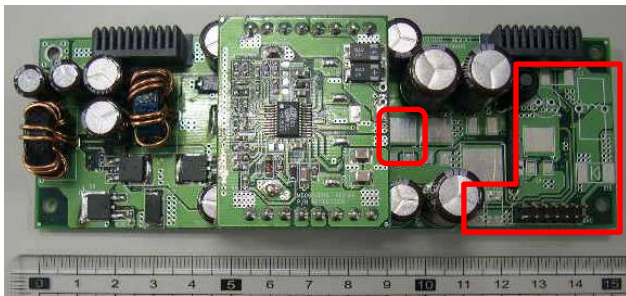
DC-DC Board without Charger Bottom
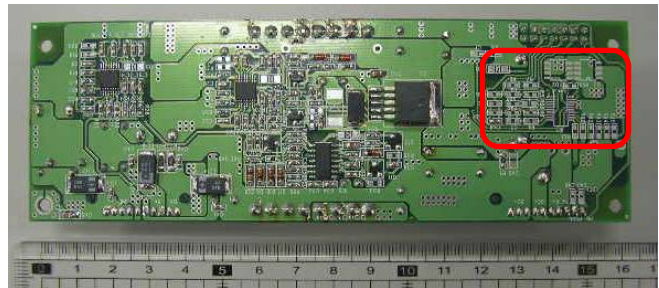
DC-DC Board with Charger Top

DC-DC Board with Charger Bottom

> **NOTE:** When the HP-8500 needs to shut down for a few days, disconnect the battery pack connector cable to avoid potential problems and extend UPS battery life.

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:** 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.
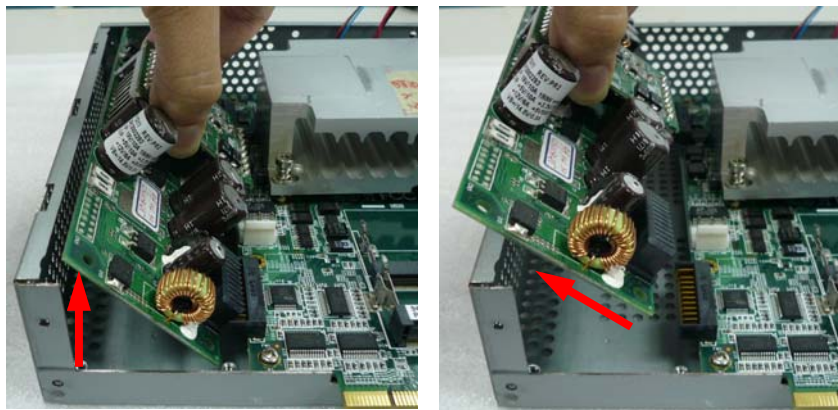
3. Remove the system box and cover.

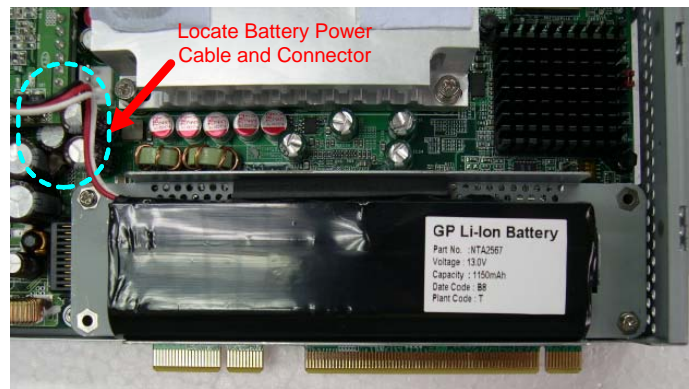4. Remove the four screws that secure the DC-DC board on the chassis.
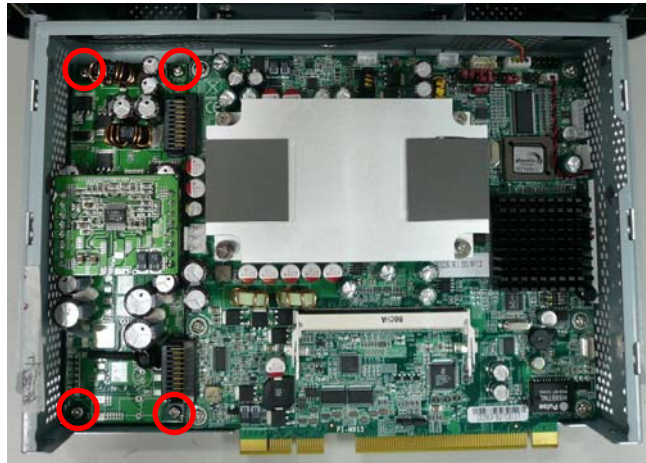
5. Gently lift up the left side of the DC-DC board and slide out it in the direction of the arrows.
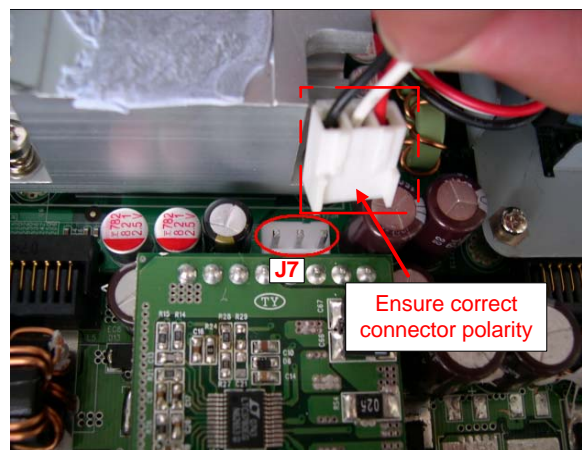

6. Insert a DC-DC board with the charger.

7. Attach the bottom of the battery holder to the main board with two screws, then affix the rubber battery cushion in the indicated location.
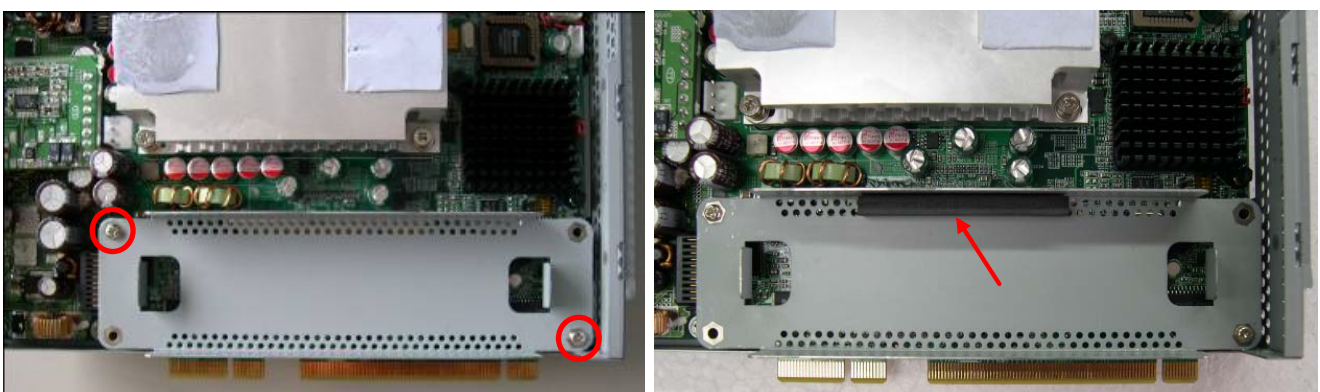
8. Place the battery pack into the battery holder, with the power cable positioned as shown.

Locate Battery Power Cable and Connector

GP Li-Ion Battery
Part No. :NTA2567
Voltage : 13.0V
Capacity : 1150mAh
Date Code : B#
Plant Code : T

9. Connect the battery pack power cable to the J7 socket on the main board.

J7

Ensure correct connector polarity

10. Put the top of the battery holder on and secure with two screws.
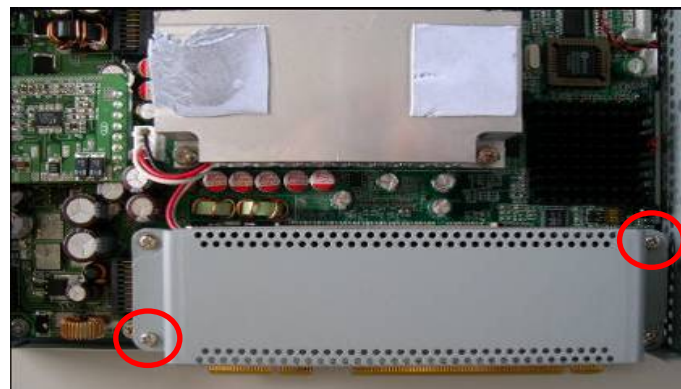
11. Cover with the system box cover and place the system box back into the system unit.

12. Reconnect the power cord and any external devices, then turn on the system.
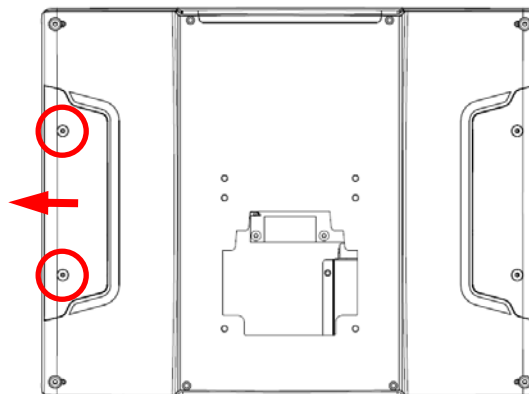
MSR/Fingerprint/I-Button Module Installation

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. 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 to secure the MSR to the main unit.
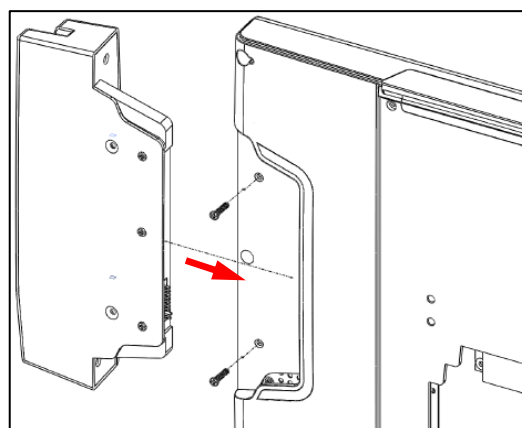
6. Reconnect the power cord and any external devices, then turn on the system.

NOTE:	The MSR module configuration tool is put under <CD>\Optional Module Data & Tool\MSR. If you need configure 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.
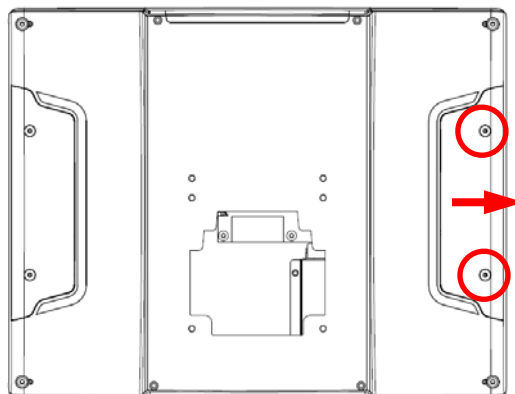
CAUTION: Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

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 to secure the wireless module to the main unit.

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

RFID Module Installation

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

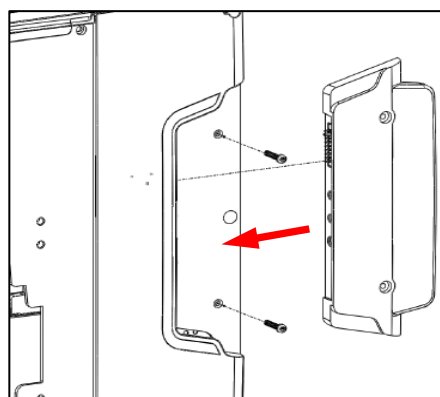2. Disconnect the power cord from the power outlet and disconnect any external devices.

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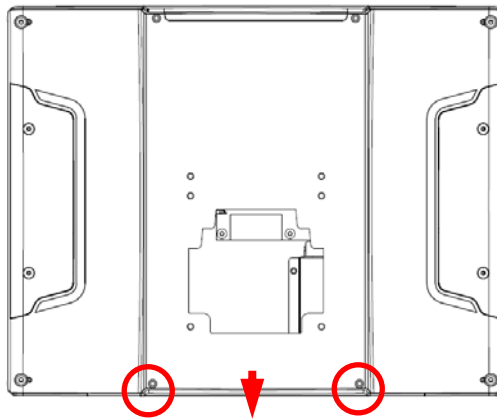
4. If the RFID components are already assembled in the custom cover module, then skip to step 6.

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

6. Fit 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.

Support ISO 15693 only

Or

Front side RFID Support ISO 15693/14443A/14443B

Cash Drawer Installation

1. Remove all removable media, such as compact discs, from the system unit.

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

3. 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.
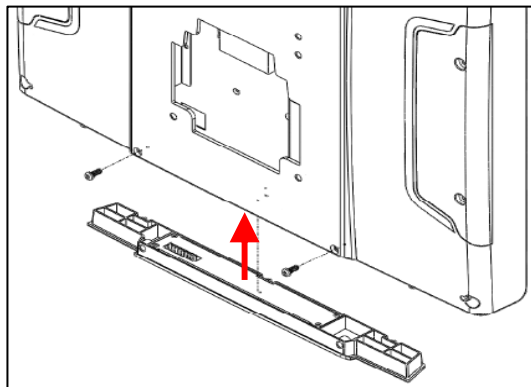
4. Plug the cash drawer cable into the cash drawer port.
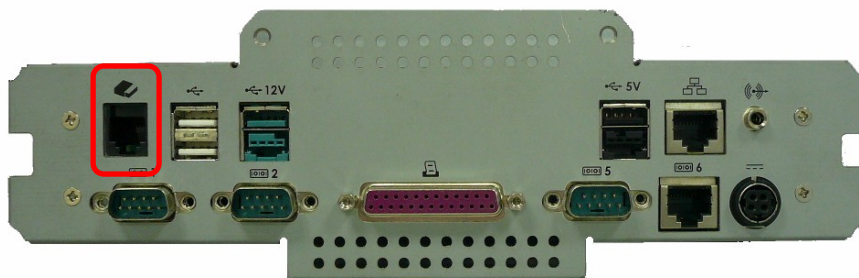
5. Reconnect the power cord and any external devices, then turn on the system.

Rear Mount 15-inch 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. Remove the system box.

4. The internal connectors (on the IOTR board) are now visible. Locate and expose the 2nd display signal cable. Pass the end of the cable with the connector through the guide hole as indicated.

Interior Housing

2nd display cable guide hole

5. From the guide hole, next pass the 2nd display signal cable through the display module's hinged support hole as shown.

6. Secure the hinge support on the base body with six screws as indicated.
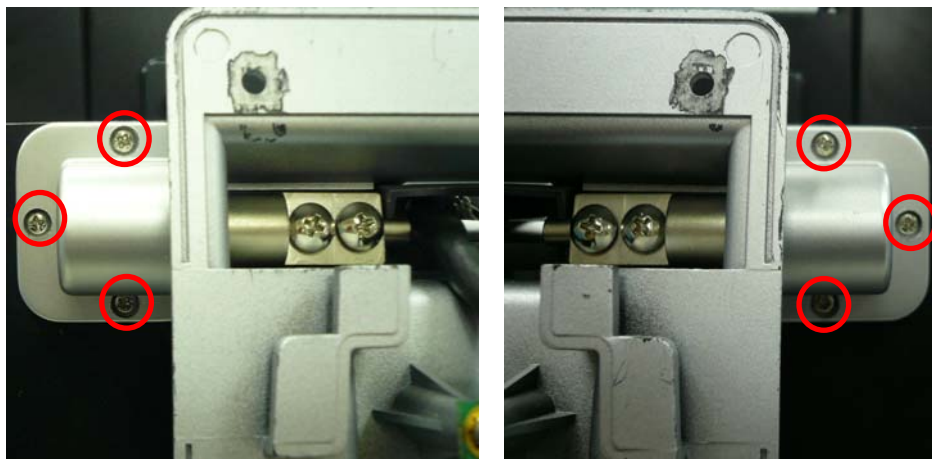
7. Connect the signal cable to the VGA hinge board and secure the board to the hinged support with four screws.
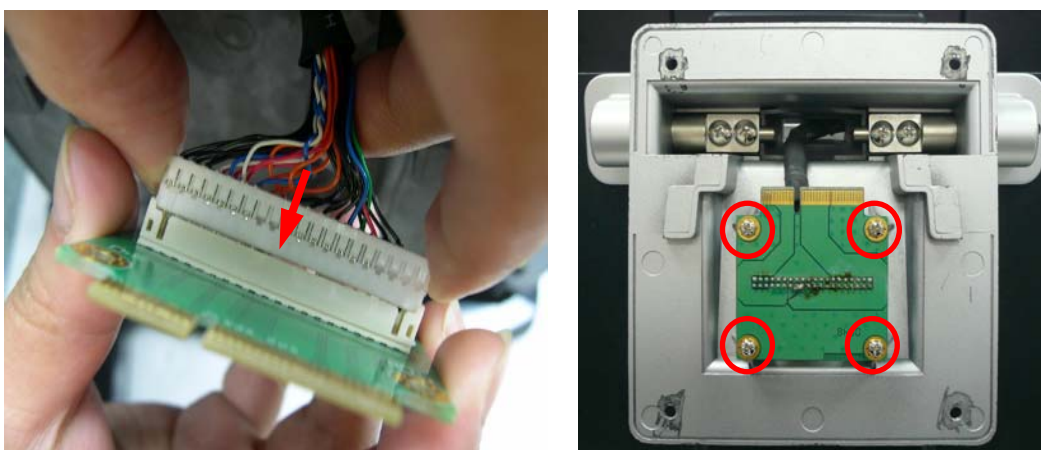
8. Slide the 2nd LCD display on to the hinged support as shown.

Top Display

Step 1   Step 2   Step 3
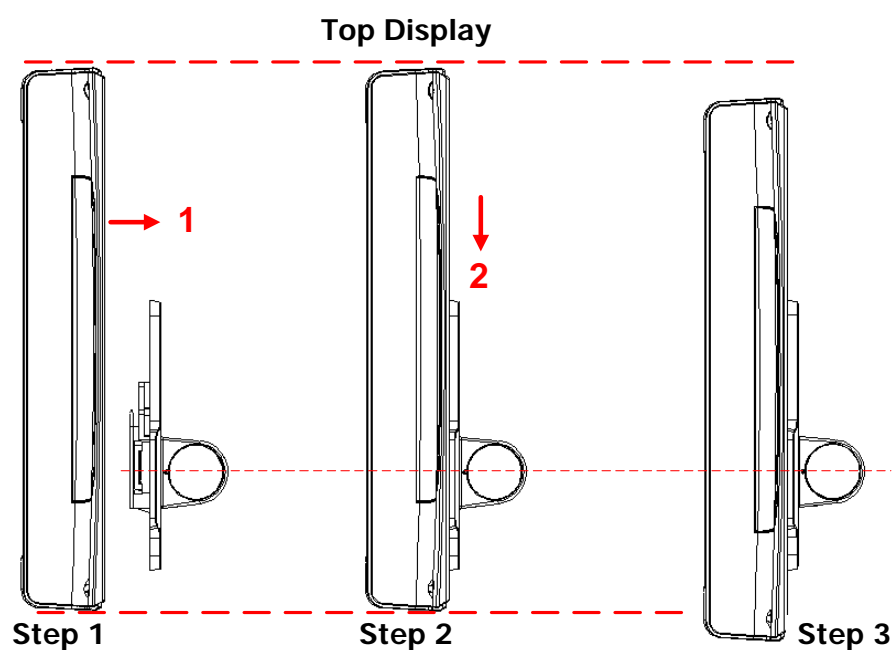
9. The four locking thumb screws should be installed to ensure that the 15-inch 2nd display is secure.

10. Replace the system box.

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

Rear Mount 8.9-inch 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. Remove the system box.

4. The internal connectors (on the IOTR board) are now visible. Locate and expose the 2nd display signal cable. Pass the end of the cable with the connector through the guide hole as indicated.

Interior Housing

2nd display cable guide hole

5. From the guide hole, next pass the 2nd display signal cable through the display module's hinged support hole as indicated. Note the hinged support must be hooks side up.

6. Secure the hinged support to the body base with six screws.
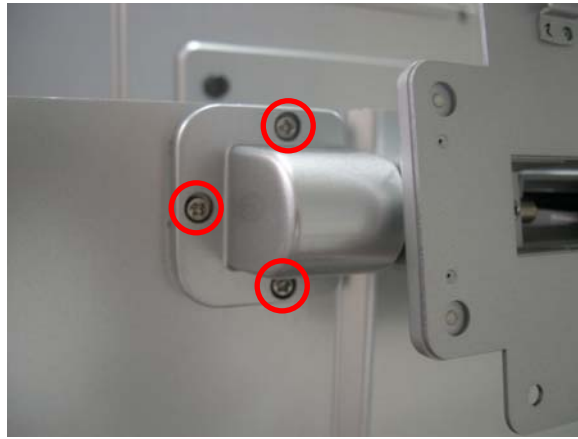
7. Connect the 2nd display signal cable to the 8.9-inch signal connector.
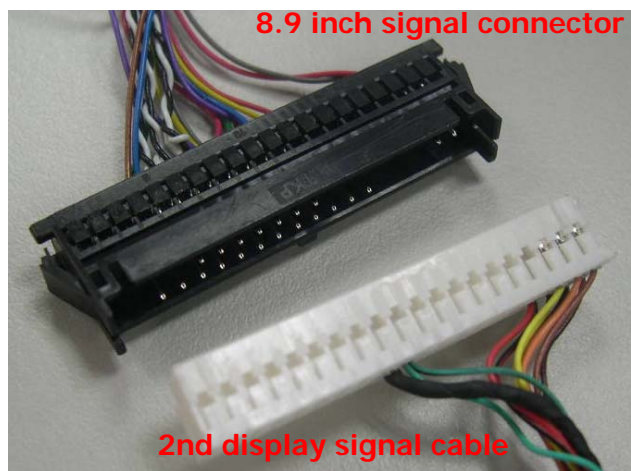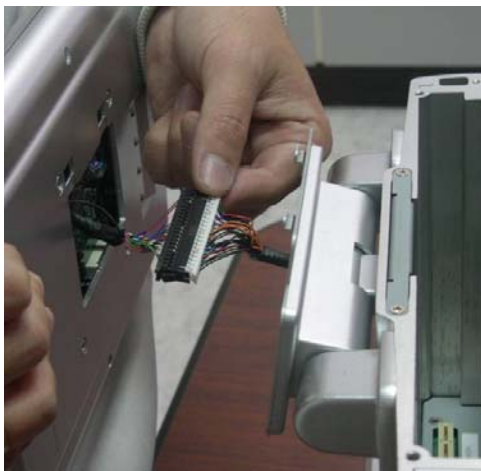
8. Slide the 8.9-inch 2nd display on to the holder hooks.

9. Secure two locking thumb screws to the 8.9-inch 2nd display module's lower side in the locations indicated to ensure that the module is secure.

10. Replace the system box.

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

Rear Mount VFD Module Installation

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

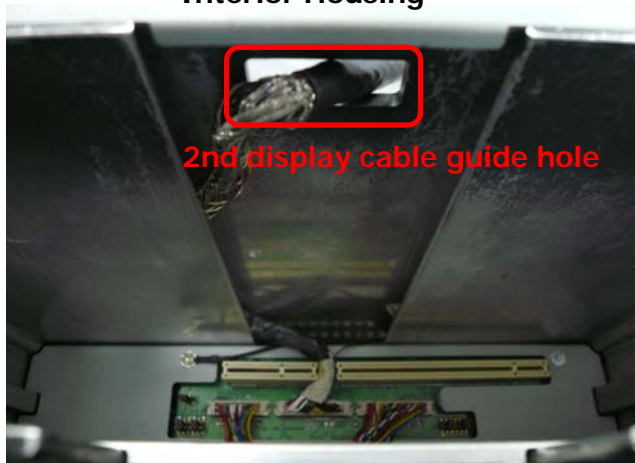2. Disconnect the power cord from the power outlet and disconnect any external devices.

⚠️ **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. Remove the system box.

4. The internal connectors (on the IOTR board) are now visible. Locate and expose the 2nd display signal cable. Pass the end of the cable with the connector through the guide hole as indicated.

Interior Housing

2nd display cable guide hole

5. From the guide hole, next pass the 2nd display signal cable through the VFD's hinged support hole as shown. Note the hinged support must be hooks side up.
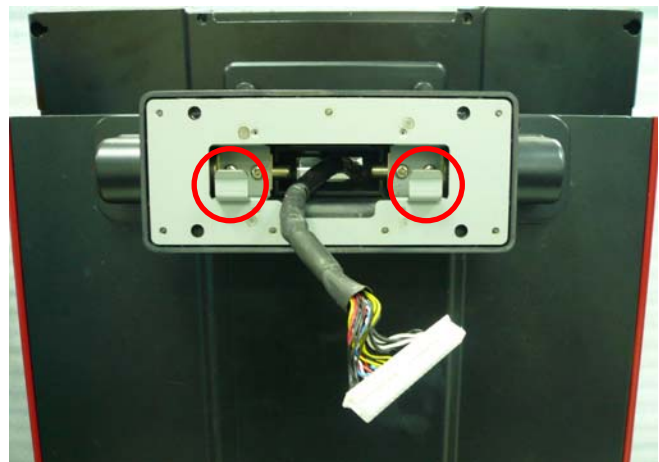
6. Secure the hinged support to the body base with six screws.
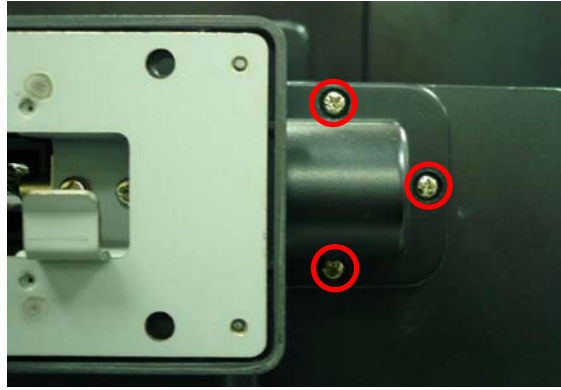
7. Connect the 2nd display signal cable to the VFD signal connector.

VFD signal connector

2nd display connector
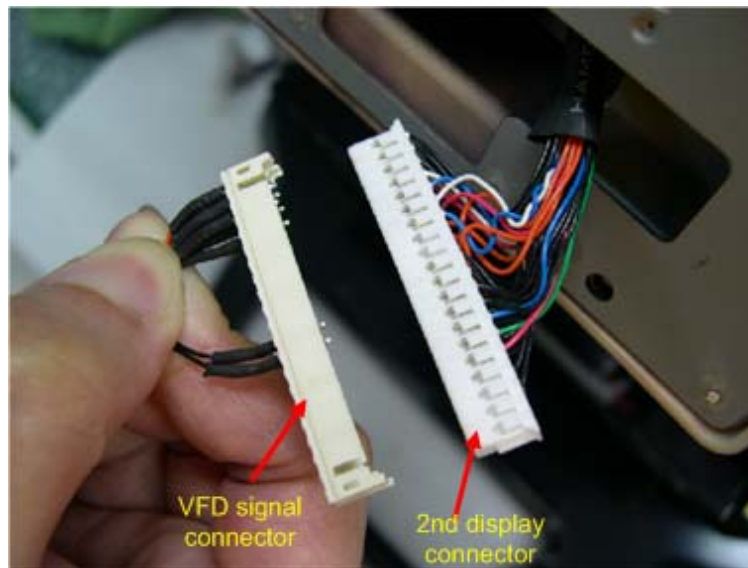
8. Slide the VFD module on to the holder hooks.

9. The two locking screws should be installed to ensure that the unit is secure.
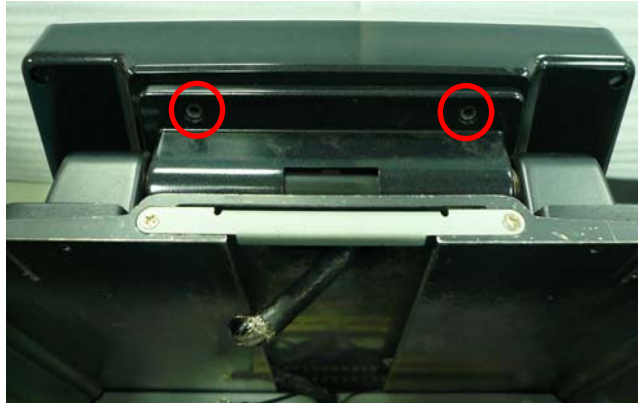
10. Replace the system box.

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

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

Chapter 4   Main Board Configuration

Jumper and Connector Locations (For PI-91X)
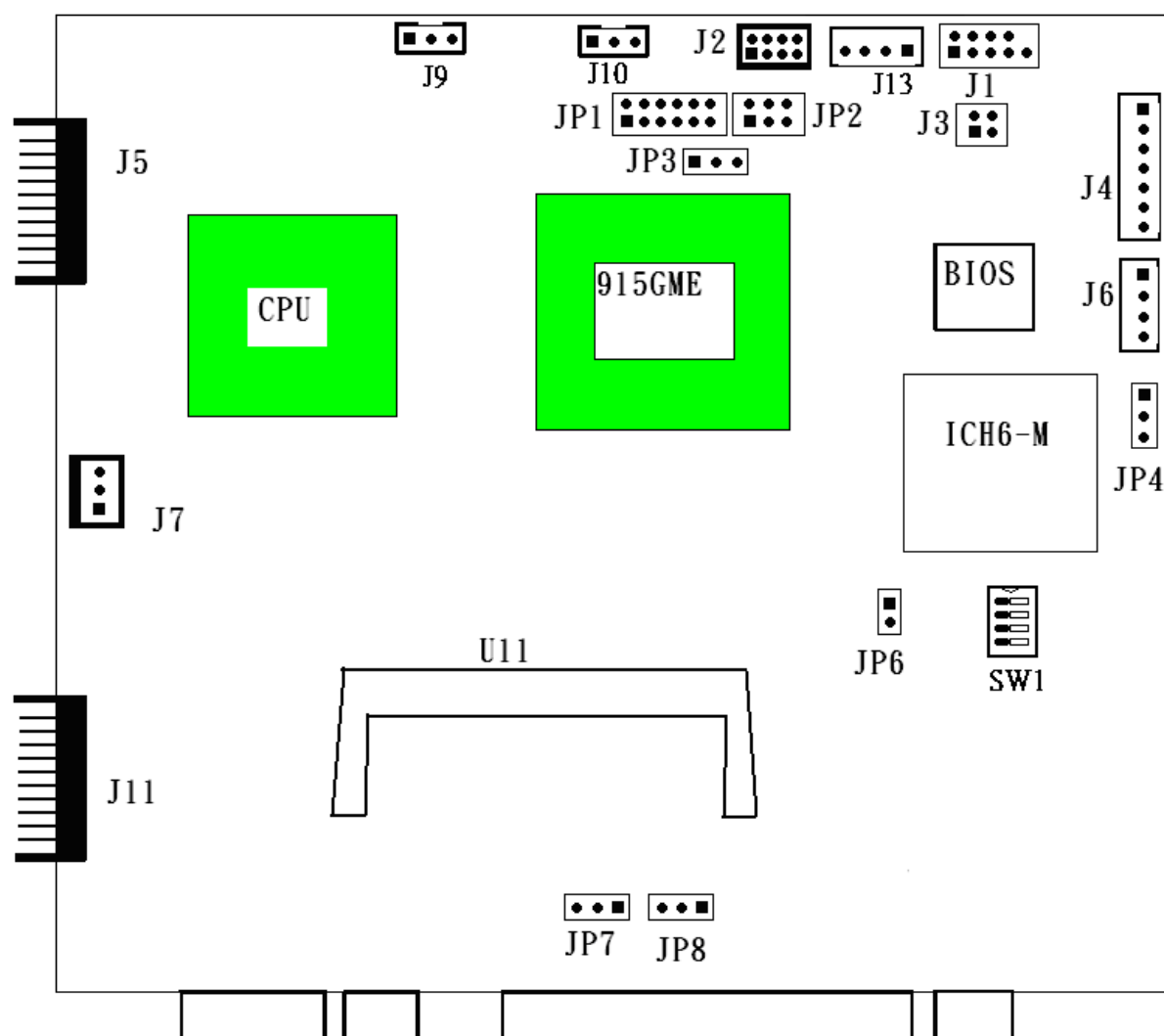
Connector Allocation

Connector	Function
J1	LPC Interface connector
J2	Power LED & HDD LED & power switch & reset connector
J4	LVDS Panel Back Light Inverter power connector
J5	ATX-power connector for DC-DC (ATX-OUT)
J6	USB connector
J7	Battery connector
J9, J10	12VDC fan connector
J12	Compact Flash socket
J13	Power switch & +3.3V output

Connectors Pin Assignments (For PI-91X)

J1   LPC Interface Connector

PIN No.	Description	PIN No.	Description
1	LAD0	2	+3.3V
3	LAD1	4	PLT_RST#
5	LAD2	6	LFRAME#
7	LAD3	8	LPC_CLK
9	NC	10	GND

J2   Power LED / HDD LED / Power Switch / Reset Connector

PIN No.	Description	PIN No.	Description
1	+5V	2	Power LED
3	+3.3V	4	HDD LED
5	GND	6	BP_PWRBTN#
7	Reset	8	GND

J4   LVDS Panel Back Light Inverter Power Connector

PIN No.	Description
1	+12V
2	GND
3	GND
4	+5V
5	NC
6	Brightness
7	Back light enable signal. Active high.

J5   ATX-Power Connector for DC-DC (ATX-OUT)

PIN No.	Description	PIN No.	Description
1	GND	2	GND
3	GND	4	GND
5	+3.3V	6	5VSB
7	+5V	8	+5V
9	+12V	10	+12V

J6 USB Connector

PIN No.	Description
1	+5V
2	USBD-
3	USBD+
4	GND
5	GND

J7 Battery Connector

PIN No.	Description
1	BAT+
2	T+
3	DC_GND

J9/J10 12VDC Fan Connector

PIN No.	Description
1	GND
2	Power Pin
3	Speed Pulse Output

J11 DC to DC Output Connector for DC-DC (DC-IN)

PIN No.	Description	PIN No.	Description
1	DC_GND	2	DC_GND
3	DC_GND	4	DC_IN
5	DC_IN	6	BAT+
7	BAT+	8	T+
9	PS_ON#	10	POWER GD

J13 Power Switch & +3.3V Output Connector

PIN No.	Description
1	GND
2	+3.3V
3	GND
4	BP_PWRBTN#

Jumper Settings (For PI-91X)

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 (★).

JP1A   **CPU VCCA Voltage Input Selection**

PIN No.	Function
2-4 Short	VCCA=1.8V (Banias)
4-6 Short	VCCA=1.5V (Dothan) ★

⚠ **CAUTION:**   Wrong voltage selection may damage the CPU. Please survey the CPU's type before selecting this jumper setting.

JP1B   **DDR2 Memory Frequency Selection**

PIN No.	Function
9-10 NC 11-12 NC	Reserved
9-10 NC 11-12 Short	The memory module is DDR2 400 ★
9-10 Short 11-12 NC	The memory module is DDR2 533
9-10 Short 11-12 Short	Reserved

JP3   **CPU FSB Frequency Selection**

PIN No.	Function
1-2 Short	CPU FSB Frequency=400MHz ★
2-3 Short	CPU FSB Frequency=533MHz

JP4   **Clear CMOS Selection**

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

Jumper and Connector Locations (For AMB-6910)

CN15 CN14 BAT1 USB2 USB3 CN18 USB1
J2 CN19 CN24

SATA2

SATA1

CN17

U43 U41 CN11
J4 JLPC1
J5 J3

U2 U6 U42 U30

U31

CN20

CN9
U46 CN10

CN16 U12 U7

J1

U38 U33 U34 U35 U44 TF1

CN3
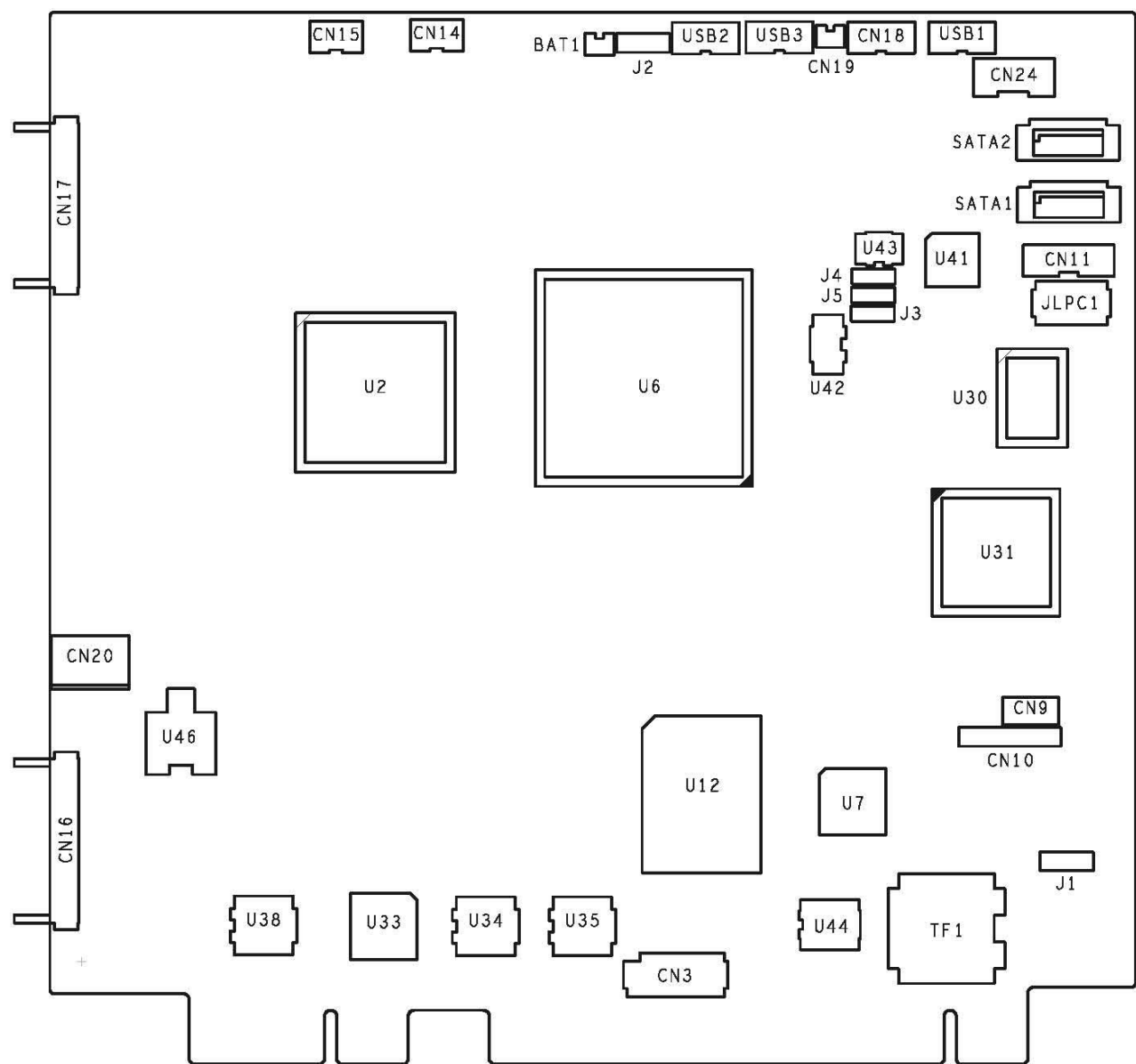
Connector Allocation

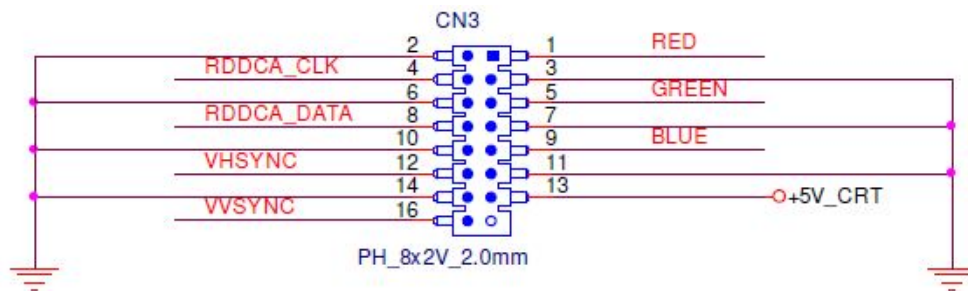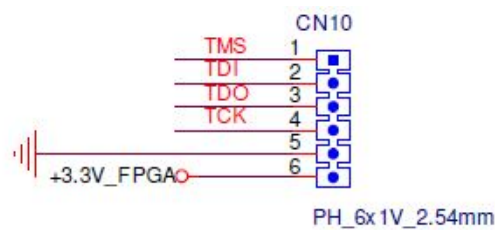| Connector	Function
BAT1	RTC Battery(07GS1600005L23)
CN1	DDR2 SODIMM
CN3	VGA Output Connector
CN10	XILINX_XC3S200A Flash Interface
CN11	Keyboard/Mouse PS2 Connector
CN12	CF Card Slot
CN14	System Fan Connector
CN15	CPU Fan Connector
CN16	DC Output Connector (to ATX Module)
CN17	DC Input Connector (from ATX Module)
CN18	Power Button Connector
CN19	System Reset Connector
CN20	Battery Package Connector
CN24	2.5" HDD Power Connector
JLPC1	Debug Port 80
SATA1	SATA RAID Connector1
SATA2	SATA RAID Connector2
USB1	USB Connector1
USB2	USB Connector2
USB3	USB Connector3
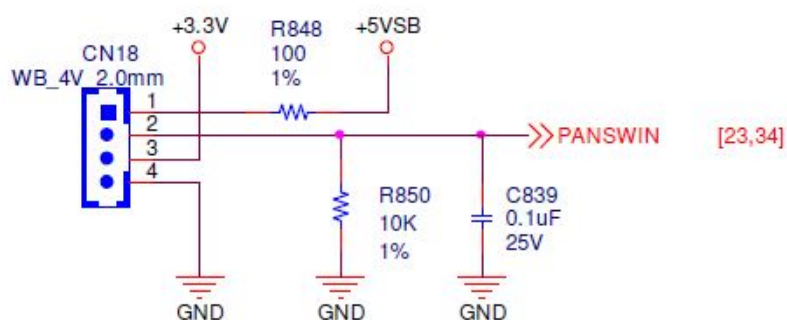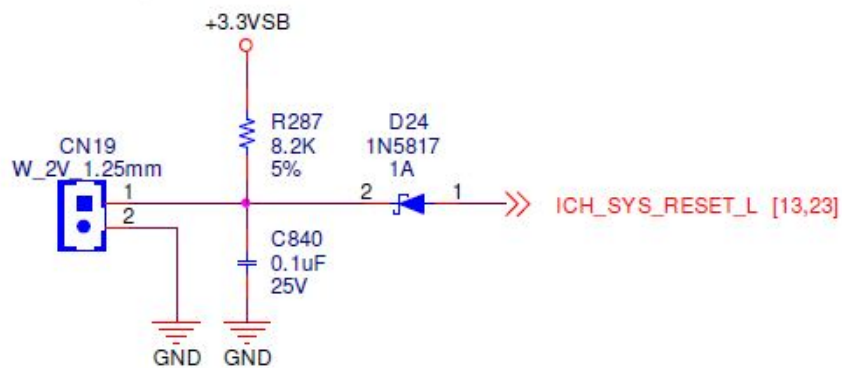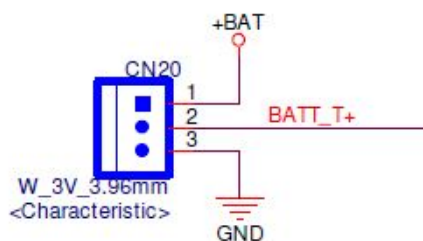
Connectors Pin Assignments (For AMB-6910)

BAT1 RTC Battery

CN3 VGA Output Connector

CN10 XILINX_XC3S200A Flash Interface

CN11 Keyboard/Mouse PS2 Connector

CN14 System Fan Connector

CN15 CPU Fan Connector

CN16 DC Output Connector (to ATX Module)

CN17

DC Input Connector (from ATX Module)

CN17
POWER_10H

+12V +5V +5VSB +3.3V GND ||| 11

GND ||| 1
2
3
4
5
6
7
8
9
10

GND ||| 12

CN18

Power Button Connector

CN18
WB_4V_2.0mm

+3.3V   R848   +5VSB
        100
        1%

1
2 —WW—
3
4

PANSWIN [23,34]

R850   C839
10K   0.1uF
1%   25V

GND   GND   GND

CN19

System Reset Connector

+3.3VSB

CN19
W_2V_1.25mm

R287   D24
8.2K   1N5817
5%   1A

1   2   1
2

ICH_SYS_RESET_L [13,23]

C840
0.1uF
25V

GND   GND

CN20

Battery Package Connector

+BAT

CN20

1
2   BATT_T+
3

W_3V_3.96mm
<Characteristic>

GND

CN24 2.5" HDD Power Connector

CN24
1
+5V
2
3
4
+5V
WB_4V_2.5mm
<Characteristic>

JLPC1 Debug Port 80

+3.3V

JLPC1
1   2
[13,23,24] LAD3   3   4   ICH_PLTRST_L [13]
[13,23,24] LAD1   5   6   LAD2   [13,23,24]
[13,23,24] LFRAME_L   7   8   LAD0   [13,23,24]
                                  10
[16] CLK_PCI_P80   11   12
PH_10x2V_2.0mm

LPC PORT 80

USB1 USB Connector1

+5V_USB4
USB1
WB_4V_2.0mm
4
USBP4-   3
USBP4+   2
1

USB2 USB Connector2

+5V_USB89
USB2
WB_4V_2.0mm
4
USBP8-   3
USBP8+   2
1

USB3　　**USB Connector3**

Jumper Settings (For AMB-6910)

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.

J1　　**LCD PANEL POWER SELECT**

Function	Default	Description
J1 Clear CMOS	J1(2-3)	J1(1-2) : Panel VDD +5V J1(2-3) : Panel VDD +3.3V

J2　　**CMOS Operation mode**

Function	Default	Description
J2 Clear CMOS	J2(1-2)	J2(1-2): Normal J2(2-3) : Clear RTC

J3　　**SATA RAID MODE SETTING**

Function	Default	Description
J3 (TBD)	J3(1-2)	J3(1-2) : RAID 1 J3(2-3): RAID 0
J4 (TBD)	J4(2-3)	J4(1-2) : (TBD) J4(2-3): Fix
J5 (TBD)	J5(1-2)	J5(1-2) : Auto Rebuild J5(2-3): By application program

Chapter 5   I/O Board Configuration

Default settings are indicated with a star sign (★). The HP-8500's I/O module has three I/O boards, including the IOTR board, a top I/O board, and a bottom I/O board.

I/O Module Front (inside, facing front of system box)
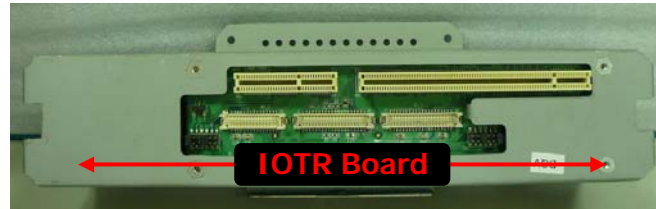
I/O Module Rear (facing the rear of the system box, actual I/O ports)

IOTR Board: Connector Pin Definitions and Jumper Settings

The IOTR board transfers signals from the PI-91X main board to the top and bottom I/O boards.

IOTR Board Top
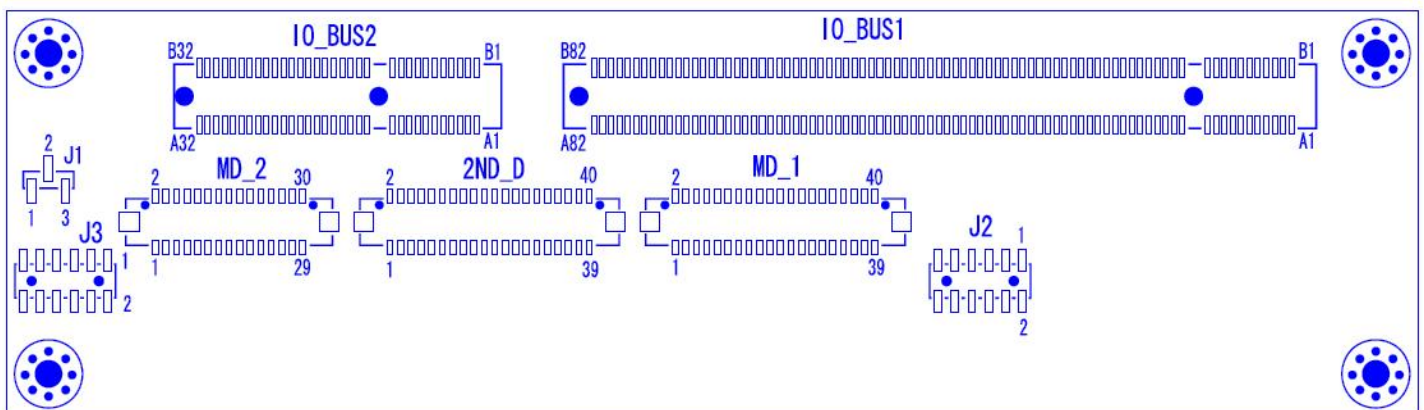
IO_BUS1   **I/O BUS1 (164 PIN) PCI Express Connector**

This connects to the system box main board.

IO_BUS2   **I/O BUS2 (64 PIN) PCI Express Connector**

This connects to the system box main board.

J1 **Cash Drawer Power Select Connector**

PIN No.	Function
1-2 Short	Cash Drawer Power=12V ★
2-3 Short	Cash Drawer Power=24V

J2A **COM1 Power Select Connector**

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

J2B **COM2 Power Select Connector**

PIN No.			Function
7-8	9-10	11-12	
Short			+5V Output
	Short		RI Function ★
		Short	+12V Output

J3A **COM5 Power Select Connector**

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

J3B **COM6 Power Select Connector**

PIN No.			Function
7-8	9-10	11-12	
Short			+5V Output
	Short		RI Function ★
		Short	+12V Output

MD_1   **Main Display I/O Connector**

PIN No.	Description	PIN No.	Description
1	NC	2	GND
3	NC	4	GND
5	PVDD	6	PVDD
7	RXO0-	8	RXO0+
9	RXO1-	10	RXO1+
11	GND	12	GND
13	RXO2-	14	RXO2+
15	RXOCLK-	16	RXOCLK+
17	GND	18	GND
19	RXO3-	20	RXO3+
21	GND	22	GND
23	12V	24	ON/OFF
25	12V	26	LCD_ADJ
27	12V	28	GND
29	UD5-	30	UD5+
31	GND	32	GND
33	UD6-	34	UD6+
35	5V	36	5V
37	NC	38	NC
39	KB-CK	40	KB-DA

MD_2   **Main Display I/O Connector**

PIN No.	Description	PIN No.	Description
1	NC	2	NC
3	5V	4	5V
5	5V	6	5V
7	5V	8	5V
9	12V	10	12V
11	UD7-	12	UD7+
13	SA0_TXP	14	SA0_TXN
15	GND	16	GND
17	SA0_RXN	18	SA0_RXP
19	TX_C	20	GND
21	RX_C	22	GND
23	RTS_C	24	GND
25	CTS_C	26	GND
27	DSR_C	28	GND
29	DTR_C	30	GND

2ND_D   2nd Display I/O Connector

PIN No.	Description	PIN No.	Description
1	SPK_R+	2	SPK_R-
3	RED	4	HSYNC
5	GRN	6	VSYNC
7	BLUE	8	GND
9	DDCDAT	10	GND
11	DDCCLK	12	GND
13	GND	14	GND
15	GND	16	GND
17	AUD7-	18	AUD7+
19	AUD6-	20	AUD6+
21	12V	22	5V
23	12V	24	5V
25	12V	26	5V
27	12V	28	5V
29	12V	30	5V
31	TX_D	32	RX_D
33	RTS_D	34	CTS_D
35	DSR_D	36	DTR_D
37	GND	38	GND
39	SPK_L+	40	SPK_L-

IOTR Board Bottom
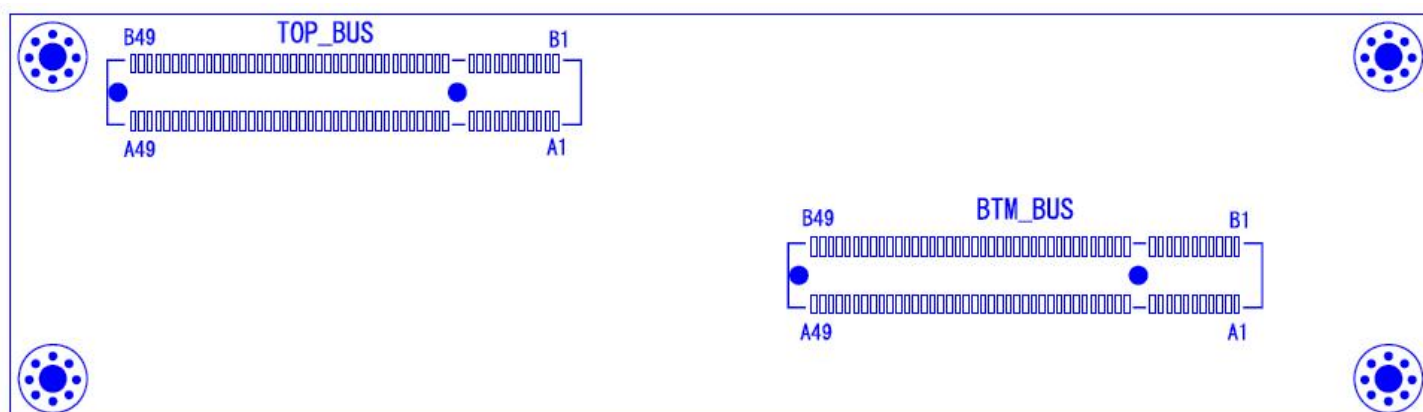
TOP_BUS   TOP_BUS 98 PIN PCI Express Connector

This connects to the top I/O board's TOP_BUS.

PIN No.	Description	PIN No.	Description
A1	GND	B1	GND
A2	GND	B2	GND
A3	NC	B3	VSYNC
A4	DTR_D	B4	HSYNC

A5	DSR_D	B5	DDCCLK
A6	CTS_D	B6	DDCDAT
A7	RTS_D	B7	BLUE
A8	RX_D	B8	GRN
A9	TX_D	B9	RED
A10	NC	B10	GND
A11	GND	B11	GND
A12	5V	B12	12V
A13	5V	B13	12V
A14	5V	B14	12V
A15	5V	B15	12V
A16	NC	B16	NC
A17	GND	B17	GND
A18	GND	B18	LINE_HP
A19	GND	B19	LINEO_L
A20	GND	B20	LINEO_R
A21	GND	B21	GND
A22	GND	B22	GND
A23	GND	B23	GND
A24	LAN_L2-	B24	GND
A25	LAN_L2+	B25	UD4+
A26	LAN_L1-	B26	UD4-
A27	LAN_L1+	B27	GND
A28	LAN3-	B28	UD3+
A29	LAN3+	B29	UD3-
A30	LAN2-	B30	GND
A31	LAN2+	B31	UD2+
A32	LAN1-	B32	UD2-
A33	LAN1+	B33	GND
A34	LAN0-	B34	UD1+
A35	LAN0+	B35	UD1-
A36	GND_LAN	B36	GND
A37	GND	B37	OUT1
A38	IN_0	B38	OUT0
A39	5V	B39	Drawer Power Select
A40	5V	B40	Drawer Power Select
A41	5V	B41	NC
A42	5V	B42	GND
A43	NC	B43	GND
A44	12V	B44	GND
A45	12V	B45	GND
A46	12V	B46	GND
A47	12V	B47	GND
A48	12V	B48	GND
A49	12V	B49	GND

BTM_BUS

BTM_BUS 98 PIN PCI Express Connector

This connects to the bottom I/O board's BTM_BUS.

PIN No.	Description	PIN No.	Description
A1	GND_FIELD	B1	DC_IN
A2	GND_FIELD	B2	DC_IN
A3	GND_FIELD	B3	DC_IN
A4	GND_FIELD	B4	DC_IN
A5	GND_FIELD	B5	DC_IN
A6	GND_FIELD	B6	DC_IN
A7	GND_FIELD	B7	DC_IN
A8	GND_FIELD	B8	DC_IN
A9	GND_FIELD	B9	DC_IN
A10	GND_FIELD	B10	DC_IN
A11	GND_FIELD	B11	DC_IN
A12	DTR_F	B12	RX_F
A13	DSR_F	B13	TX_F
A14	CTS_F	B14	DCD_F
A15	RIF	B15	RTS_F
A16	RIE	B16	RTS_E
A17	DTR_E	B17	RX_E
A18	DSR_E	B18	TX_E
A19	CTS_E	B19	DCD_E
A20	GND	B20	GND
A21	GND	B21	PSLCT
A22	PPE	B22	PBUSY
A23	PACKX	B23	PD7
A24	PD6	B24	PD5
A25	PD4	B25	PD3
A26	PSLINX	B26	PD2
A27	PINITX	B27	PD1
A28	PERX	B28	PD0
A29	PAFDX	B29	PSTBX
A30	GND	B30	GND
A31	GND	B31	GND
A32	NC	B32	NC
A33	12V	B33	5V
A34	12V	B34	5V
A35	12V	B35	5V
A36	12V	B36	5V
A37	NC	B37	NC
A38	GND	B38	GND
A39	GND	B39	GND
A40	GND	B40	GND
A41	GND	B41	GND
A42	RIB	B42	DTR_B

A43	CTS_B	B43	TX_B
A44	RTS_B	B44	RX_B
A45	DSR_B	B45	DCD_B
A46	RIA	B46	RTS_A
A47	DTR_A	B47	RX_A
A48	DSR_A	B48	TX_A
A49	CTS_A	B49	DCD_A

Top I/O Board: Connector Pin Definitions and Jumper Settings

The top I/O board transfers signals from the I/O ports to the IOTR board. These include: audio port, LAN, Cash Drawer, 5V Power USB, 12V Power USB, and USB.
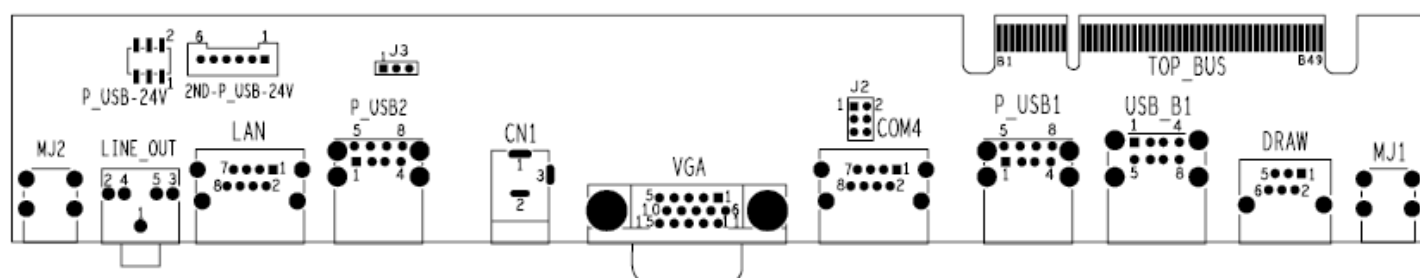
LINE_OUT

Audio line Output EAR Connector

PIN No.	Description
1	GND_SP
2	LO_R
3	LO_L
4	LO_HP
5	NC

LAN

RJ-45 LAN Port

PIN No.	Description	PIN No.	Description
1	LAN0+	2	LAN0-
3	LAN1+	4	LAN2+
5	LAN2-	6	LAN1-
7	LAN3+	8	LAN3-

P_USB2

5V Power USB Port

PIN No.	Description	PIN No.	Description
1	5V	2	UD2-
3	UD2+	4	GND
5	GND	6	5V
7	5V	8	GND

12V Power USB Port

PIN No.	Description	PIN No.	Description
1	5V	2	UD1-
3	UD1+	4	GND
5	GND	6	12V
7	12V	8	GND

USB_B1

USB Port

PIN No.	Description	PIN No.	Description
1	5V	2	UD3-
3	UD3+	4	GND
5	5V	6	UD4-
7	UD4+	8	GND

DRAW

RJ-11 Cash drawer Port

PIN No.	Description	PIN No.	Description
1	GND	2	DGO_0
3	IN_0	4	V_DRAW
5	DGO_1	6	GND

Bottom I/O Board: Pin Definitions and Jumper Settings
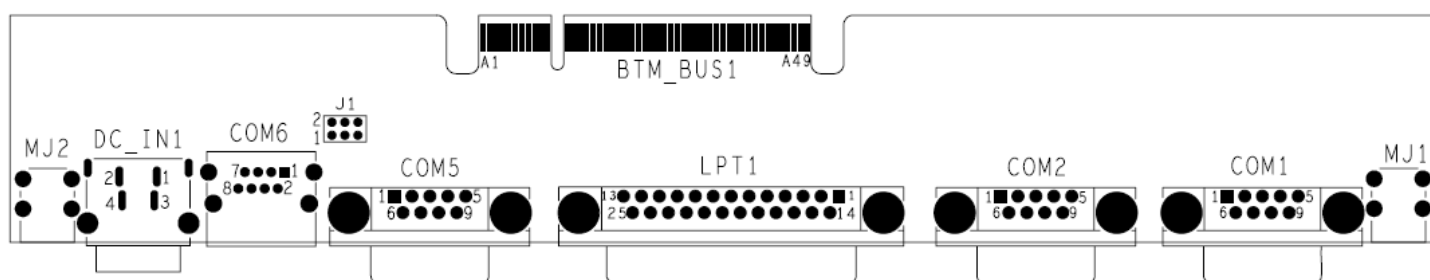
The bottom I/O board transfers signals from the I/O ports to the IOTR board. These include: DC IN, RJ-45, COM6, COM1, COM2, COM5, and LPT1.

J1

COM6 & VFD Select Connector

PIN No.	Description	PIN No.	Description
1	RTS_F	2	CTS_F
3	RTSF	4	CTSF
5	GND	6	RI_F

COM6

COM6 uses the RJ-45 connector to accept the VFD customer display. If the customer display is not required, this port may function as an RS-232C port. An adapter cable to convert RJ-45 to DB-9 is included in the HP-8500's package contents. Jumpers on the circuit board must also be reconfigured as shown in the table.

Mode1: RJ-45 connector used for RS232 device (Default)

J3 (IOTR Board)	
7-8	Short (+5V)

J1 (Bottom I/O Board)	
1-3	Short
2-4	Short
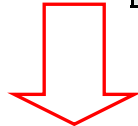
RJ-45 Pin Definitions

PIN No.	Description	PIN No.	Description
1	+5V	2	CTSF
3	GND	4	RTSF
5	DTRF	6	DSRF
7	TXF	8	RXF

Mode2: RJ-45 connector used for VFD device

J3 (IOTR Board)	
11-12	Short (+12V)

J1 (Bottom I/O Board)	
3-5	Short
4-6	Short
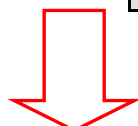
RJ-45 Pin Definitions

PIN No.	Description	PIN No.	Description
1	+12V	2	+12V
3	GND	4	GND
5	DTRF	6	DSRF
7	TXF	8	RXF

DC_IN1 DC Power Jack Connector

PIN No.	Description
1	GND
2	DC_IN
3	GND
4	DC_IN

COM1 & COM2 & COM5

RS232 Port COM1, COM2, and COM5 D-Sub Connector

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

LPT1

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_LPT
19	GND_LPT	20	GND_LPT
21	GND_LPT	22	GND_LPT
23	GND_LPT	24	GND_LPT
25	GND_LPT		

Chapter 6   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\MB\PI-91X\Intel INF for HP-8500` or `<CD>:\Driver\MB\Luna Pier\Intel INF HP-8520`
Intel Graphics	`<CD>:\Driver\MB\PI-91X\VGA for HP-8500` or `<CD>:\Driver\MB\Luna Pier\VGA for HP-8520`
ELO Touch Screen	`<CD>:\Driver\Peripheral\Touch\ELO`
Abon Touch Screen	`<CD>:\Driver\Peripheral\Touch\Abon`
RealTek Audio	`<CD>:\Driver\MB\PI-91X\Audio for HP-8500` or `<CD>:\Driver\MB\Luna Pier\Audio for HP-8520`
PCI-E Ethernet	`<CD>:\Driver\MB\PI-91X\GLAN for HP-8500` or `<CD>:\Driver\MB\Luna Pier\GLAN for HP-8520`
802.11b/g/n Wireless	`<CD>:\Driver\Peripheral\WLAN\ LR802UKN3_802.11bgn`
USB RFID	`<CD>:\Driver\Peripheral\RFID\USB driver`
Fingerprint Reader	`<CD>:\Driver\Peripheral\FingerPrint\URU4000B\DP Plat frsw 3.2`
IC Card Reader	`<CD>:\Driver\Peripheral\IC Card Reader\EZ100PU Driver`
Cash Drawer and UPS	`<CD>:\Driver\ MB\PI-91X\System Driver for HP-8500` or `<CD>:\Driver\ MB\Luna Pier\System Driver\Z_H for HP-8520`
OPOS CCOs	`<CD>:\Driver\OPOS\CCOs`
AdvanPOS OPOS Driver	`<CD>:\Driver\OPOS\OPOS Driver`
VFD Configure tool	`<CD>:\Optional Module Data & Tool\VFD\ RearMount VFD\LD220SetupAP_V2.3`
MSR Configure tool	`<CD>:\Optional Module Data & Tool\MSR`
RFID Configure tool	`<CD>:\Optional Module Data & Tool\RFID\C type`

Intel Chipset Driver Installation

1. Run the setup.exe file on the CD in folder <CD>:\Driver\MB\PI-91X\Intel INF for HP-8500 or <CD>:\Driver\MB\ Luna Pier\Intel INF for HP-8520	

|	
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 win2k_xp1425.exe file on the CD in folder
   <CD>:\Driver\MB\PI-91X\VGA for HP-8500 or
   <CD>:\Driver\MB\Luna Pier\VGA for HP-8520
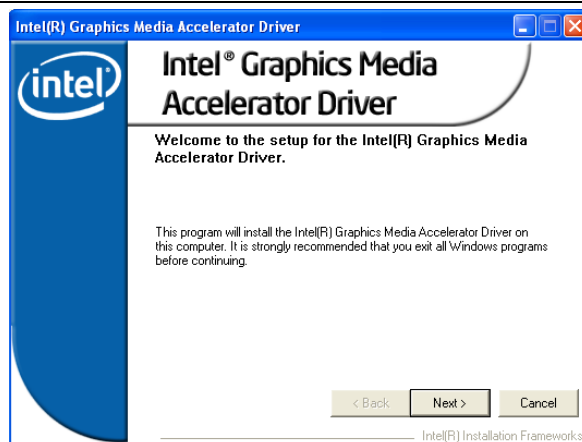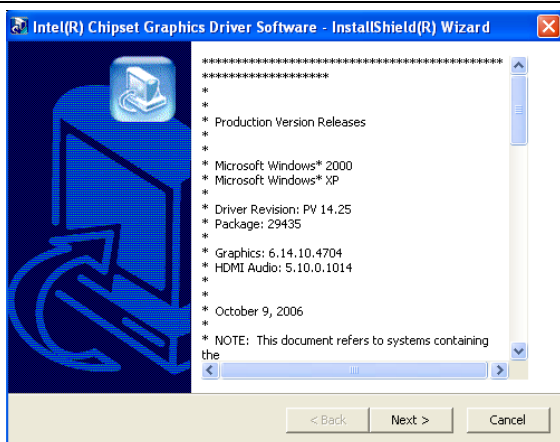
2. Click Next on the Wizard screen.	3. Click Next on the Welcome screen.
4. Click Yes on the License Agreement screen.	5. Click Next on the Information screen.
6. When installation is complete, click Finish to restart the system.	
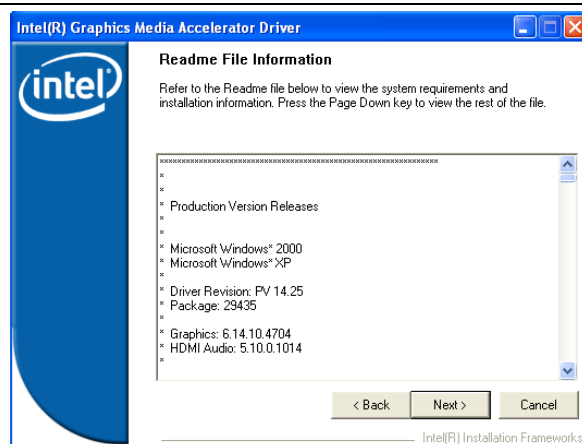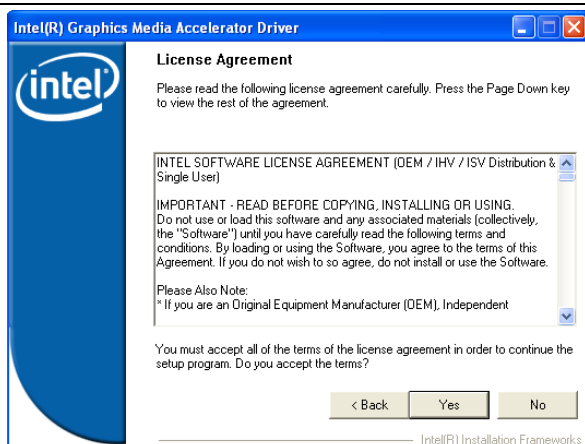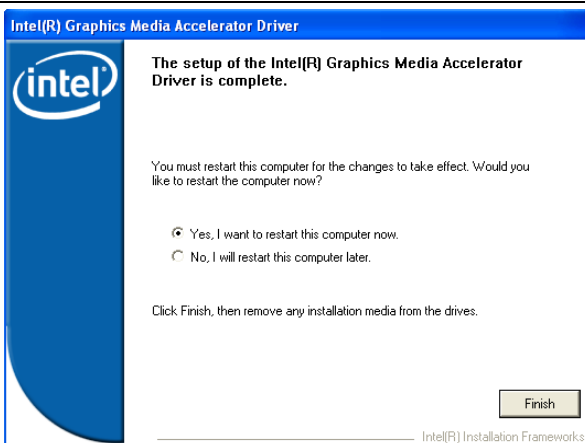
ELO Touch Screen Driver Installation

1. Locate and Run the sw600188.exe file on the CD in folder <CD>:\Driver\Peripheral\Touch\ELO	
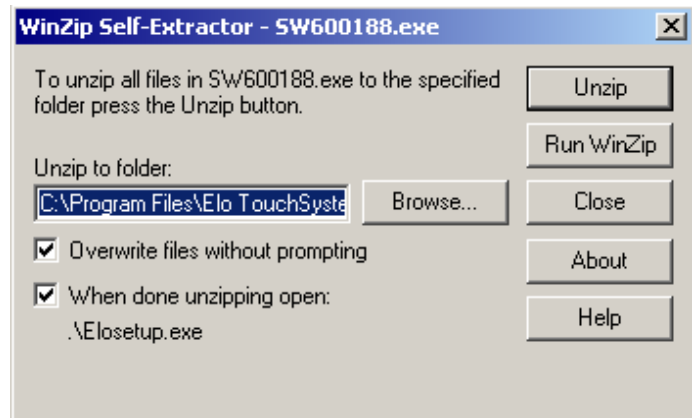
2. Click OK on the Welcome screen.	3. Click Unzip on the WinZip Self-Extractor screen.
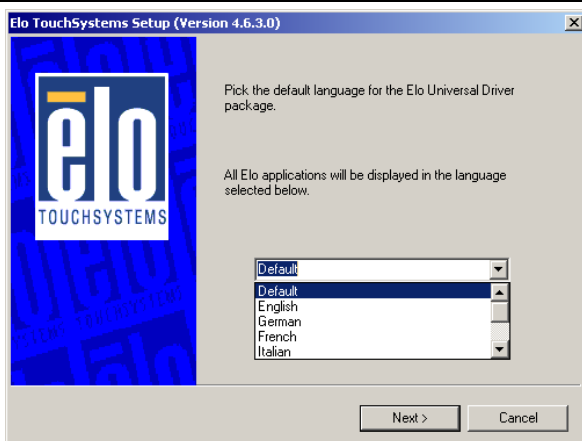
4. Select Default installation language, click Next.	5. Select Install Serial Touchscreen Drivers, click Next.
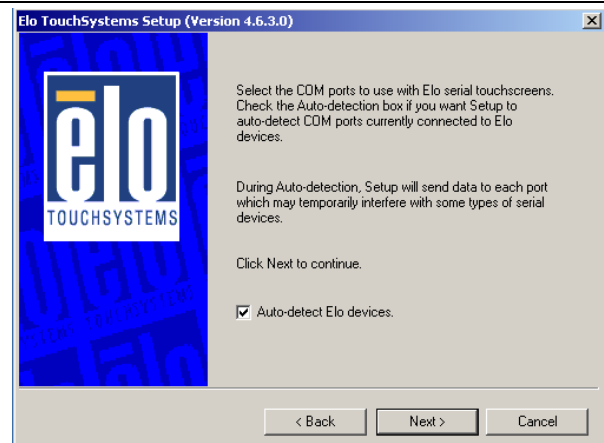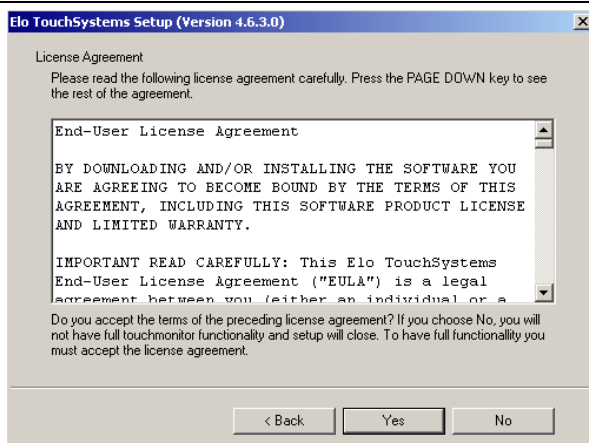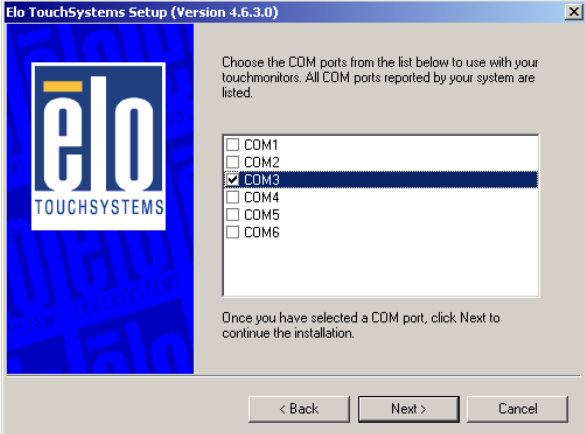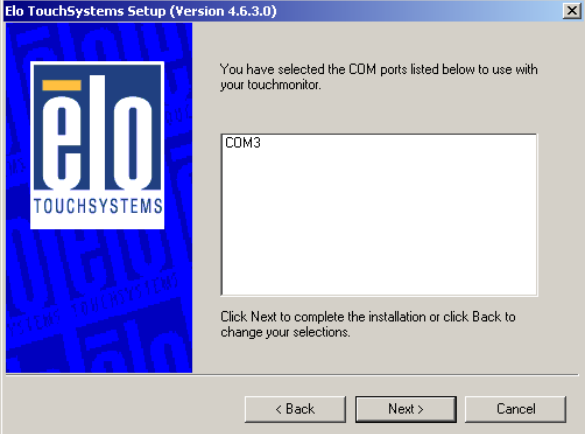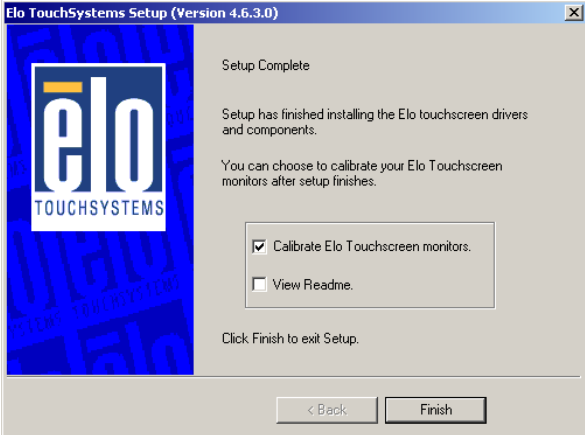
6. Click Yes on the License Agreement screen.	7. Select Auto-detect Elo devices, click Next.

8. Select COM3, click Next.	9. Click Next to confirm COM port selection.
10. Select Calibrate Elo Touchscreen monitors, click Finish.	11. Calibrate the three red points as instructed.
12. Click the green checkmark button to complete Elo Touch installation.	

Abon Touch Screen Driver Installation

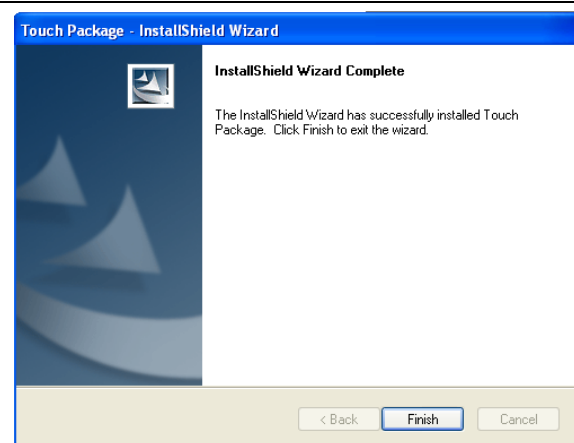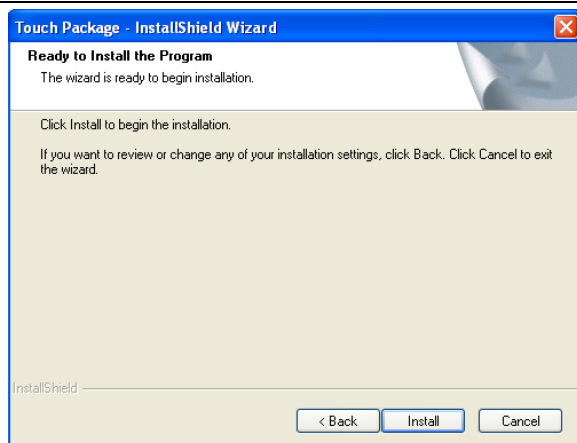|	
1. Locate and Run the autorun.exe file on the CD in folder <CD>:\Driver\Peripheral\Touch\Abon	
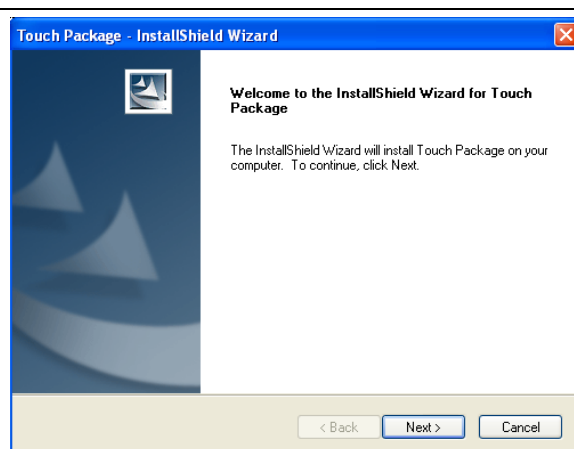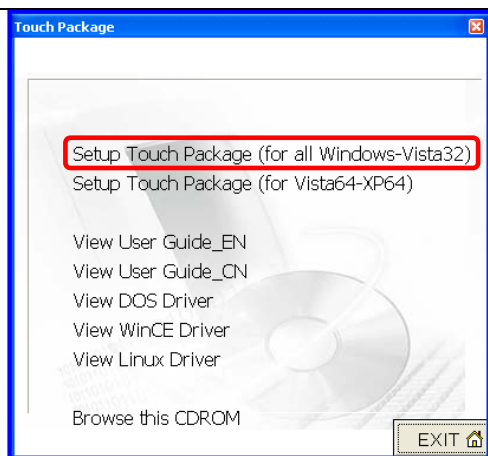
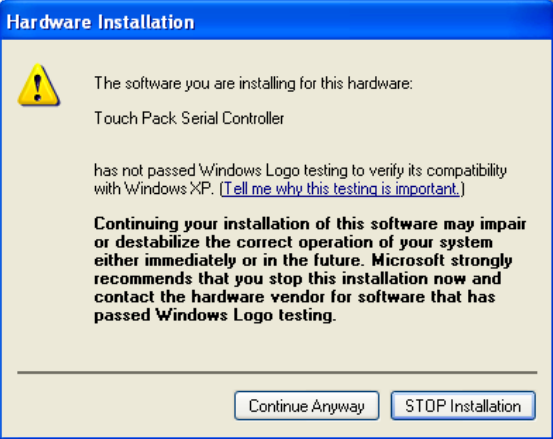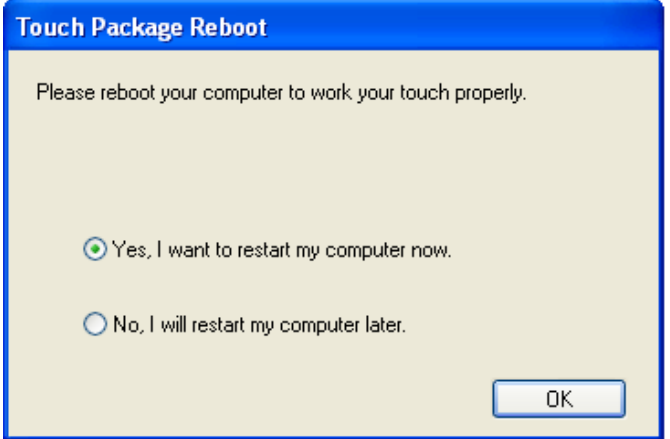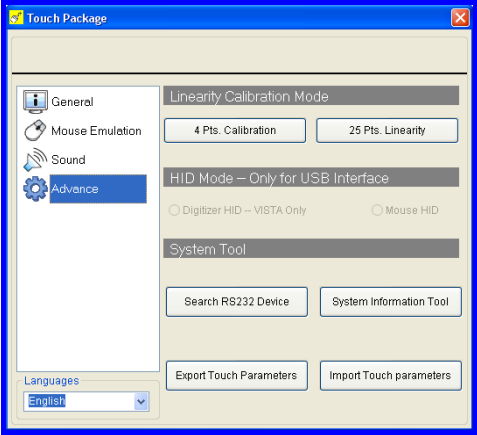|	
2. Select Setup Touch Package (for all Windows-Vista32).	3. Click Next on the Welcome screen.
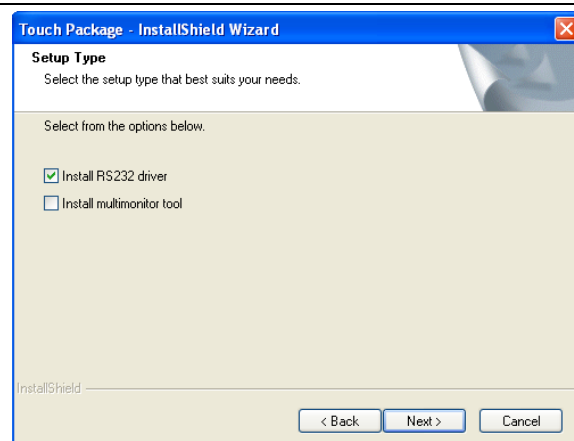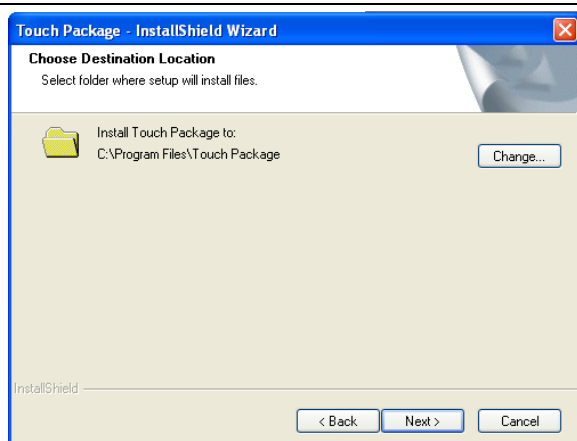
|	
4. Click Next to confirm destination location.	5. Select Install RS232 driver and click Next.

6. Click Install to begin installation.	7. Click Finish to complete.

Hardware Installation ⚠ The software you are installing for this hardware: Touch Pack Serial Controller has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.) **Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.** [Continue Anyway] [STOP Installation]	**Touch Package Reboot** Please reboot your computer to work your touch properly. ⦿ Yes, I want to restart my computer now. ○ No, I will restart my computer later. [OK]
8. Click Continue Anyway.	9. Click OK to reboot the system.
My Computer My Documents My Network Places Touch Tool	**Touch Package** General Mouse Emulation Sound Advance Linearity Calibration Mode [4 Pts. Calibration] [25 Pts. Linearity] HID Mode – Only for USB Interface ○ Digitizer HID – VISTA Only ○ Mouse HID System Tool [Search RS232 Device] [System Information Tool] [Export Touch Parameters] [Import Touch parameters] Languages English
10. Run the Touch Tool on the desktop.	11. Select Advance and click on the 4 Pts. Calibration button.

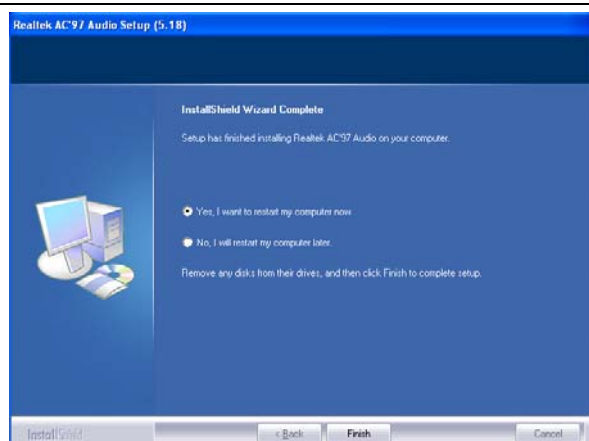# Audio Driver Installation

1. Locate and Run the WDM_A381.exe file on the CD in folder
     <CD>:\Driver\MB\PI-91X\Audio for HP-8500 or
     <CD>:\Driver\MB\Luna Pier\Audio for HP-8520	
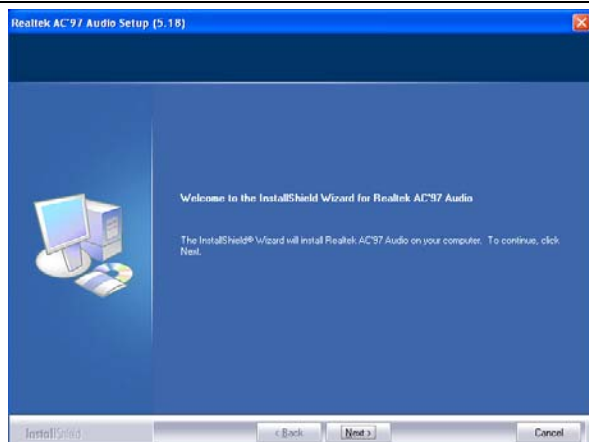
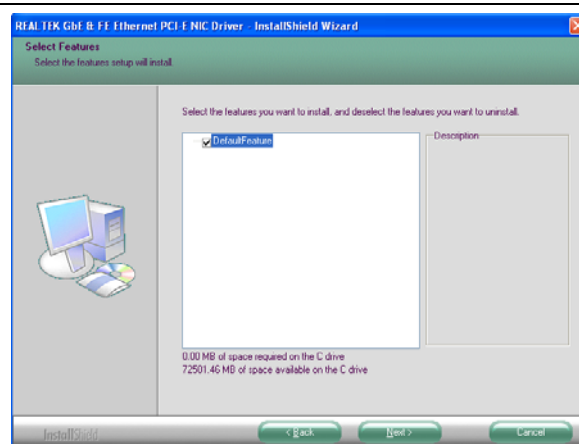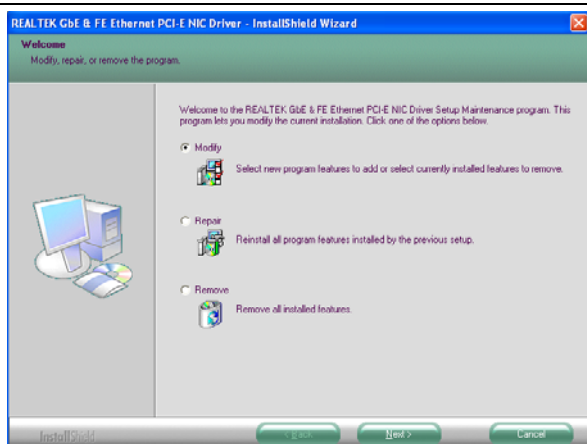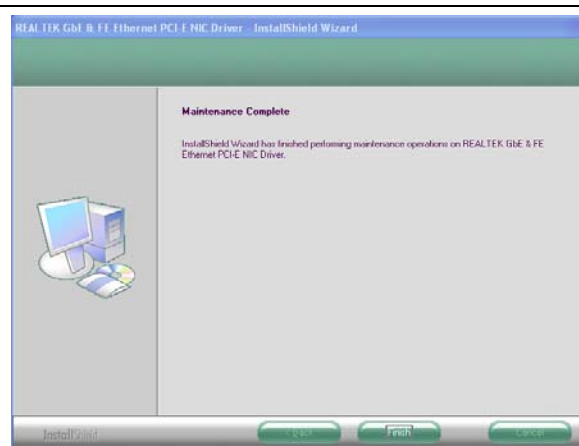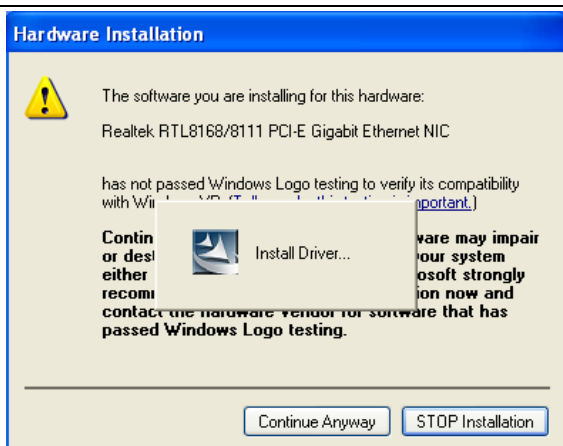|	
2. Click Next on the Welcome screen.	3. Click Continue Anyway on the Hardware Installation screen.
4. When installation is complete, click Finish to restart the system.	

Ethernet Driver Installation

1. Locate and Run the setup.exe file on the CD in folder
     <CD>:\Driver\MB\PI-91X\GLAN for HP-8500 or
     <CD>:\Driver\MB\Luna Pier\GLAN for HP-8520	

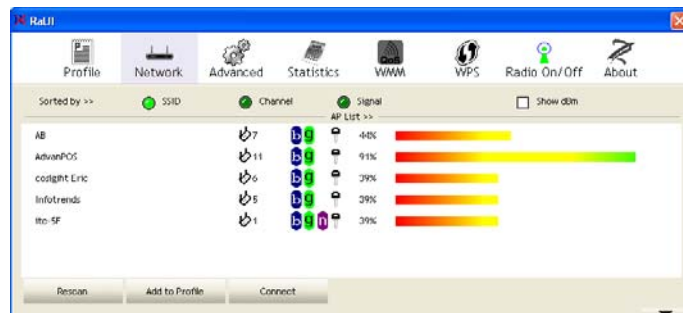|	
2. Select Modify, click Next.	3. Select Default Feature and click Next.
4. Click Continue Anyway on the Hardware Installation screen.	5. When installation is complete, click Finish.

Wireless LAN Driver Installation (optional)

1. First, plug in the USB WLAN Interface module. Locate and Run the setup.exe file on the CD in folder <CD>:\Driver\Peripheral\WLAN\LR802UKN3_802.11bgn
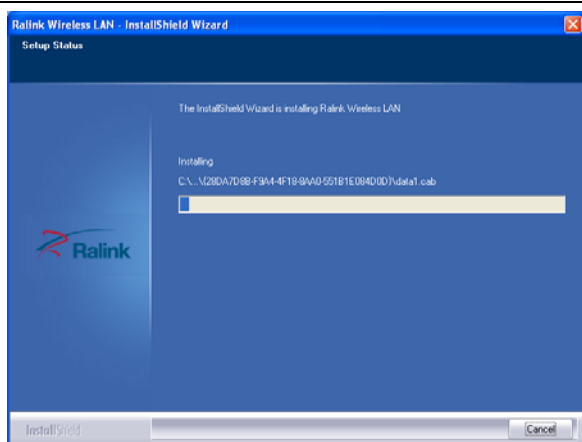
2. Wait as the WLAN driver is installed.

3. When installation is complete, the WLAN utility will automatically appear on the desktop.

RFID Driver Installation (optional)

1. Plug in the USB RFID Module and wait for the following screen.
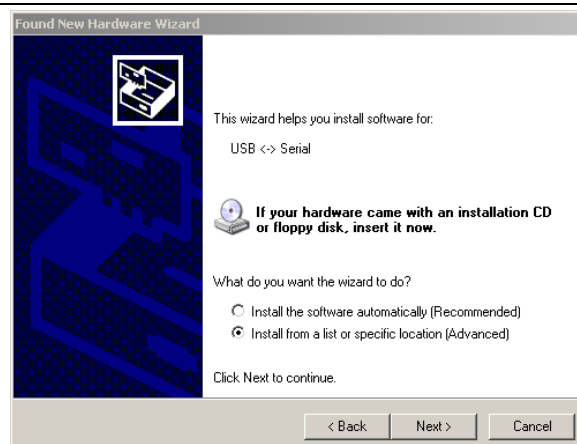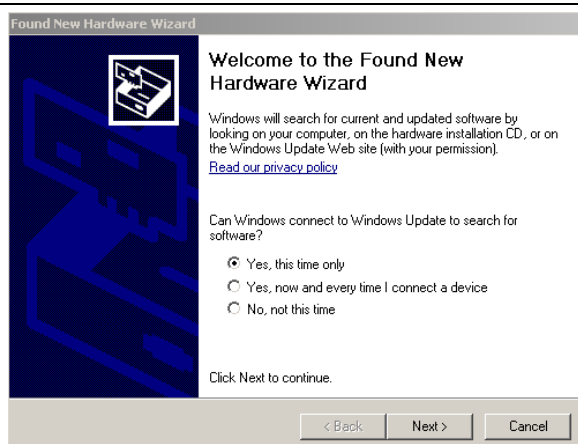
2. Select Yes, this time only and then click Next.

3. Select Install from a list specific location (Advanced), click Next.
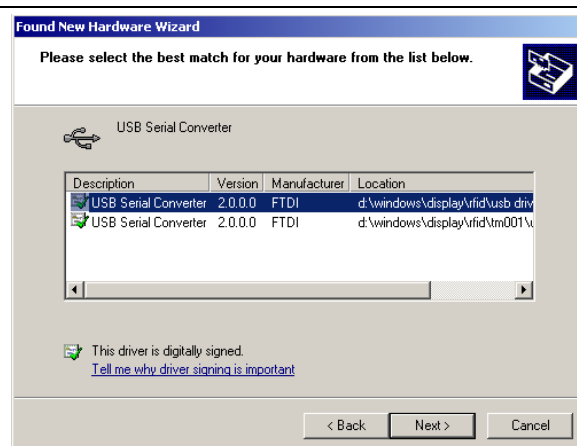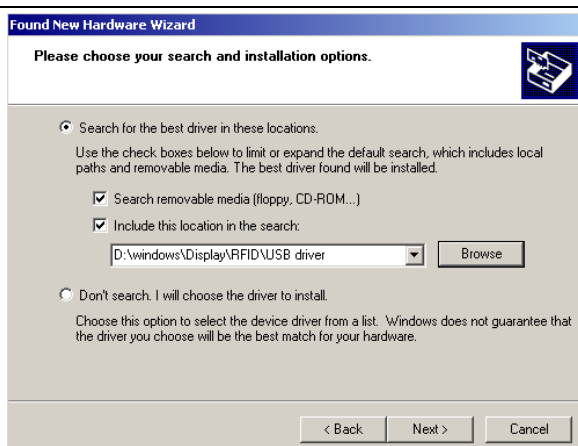
4. Click Next after making sure the check boxes shown are marked.

5. Click Next to accept the selection.

6. Click OK.

7. Locate or confirm the driver directory, click OK.

Found New Hardware Wizard **Completing the Found New Hardware Wizard** The wizard has finished installing the software for: USB Serial Converter Click Finish to close the wizard. < Back Finish Cancel	**Found New Hardware Wizard** **Completing the Found New Hardware Wizard** The wizard has finished installing the software for: USB Serial Port The hardware you installed will not work until you restart your computer. Click Finish to close the wizard. < Back Finish Cancel
8. Click Finish to complete the USB Serial Converter installation.	9. Repeat for the USB Serial Port installation.
System Settings Change Windows has finished installing new devices. The software that supports your device requires that you restart your computer. You must restart your computer before the new settings will take effect. Do you want to restart your computer now? Yes No	
10. Click Yes to restart the system.	
11. There are RFID test tool under <CD>:\Optional Module Data & Tool\RFID\C Type	
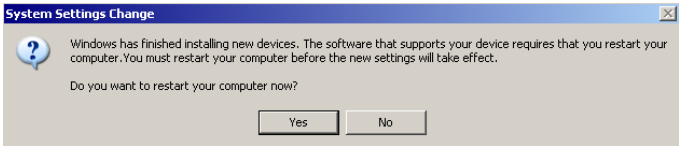
MSR Driver Installation (optional)

1. First, install the MSR module.

2. Reboot system to automatically complete MSR driver installation.

3. Please execute MSRCfgSetup_V1.36.exe under <CD>:\Optional Module Data\MSR for MSR testing.

Fingerprint Reader Driver Installation (optional)

1. Plug in the 2-in-1 Fingerprint Reader and MSR module.
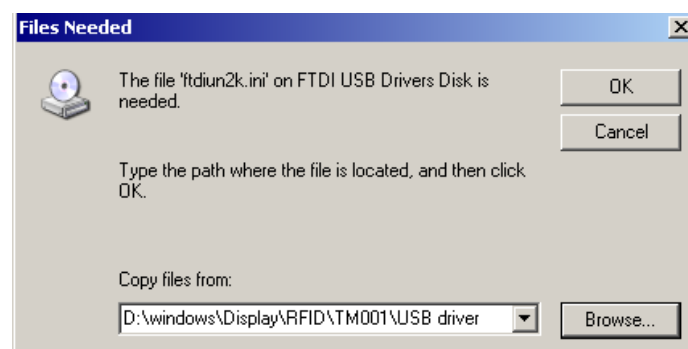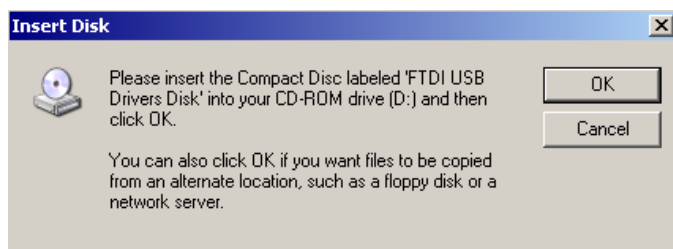2. Locate and Run the setup.exe file in folder <CD>:\Driver\Peripheral\FingerPrint\URU4000B\DP Plat frsw 3.2
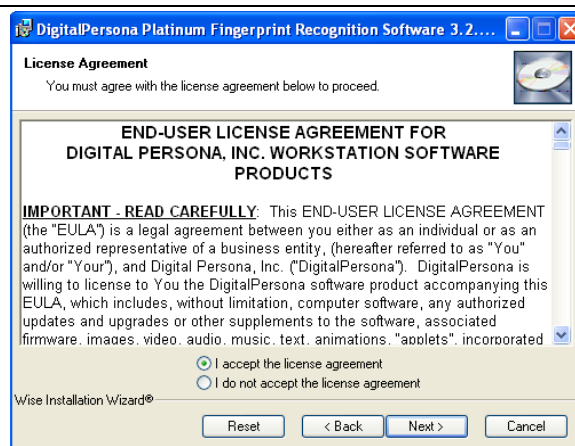
3. Click Next on the Welcome screen.

4. Click Next on the License Agreement screen.
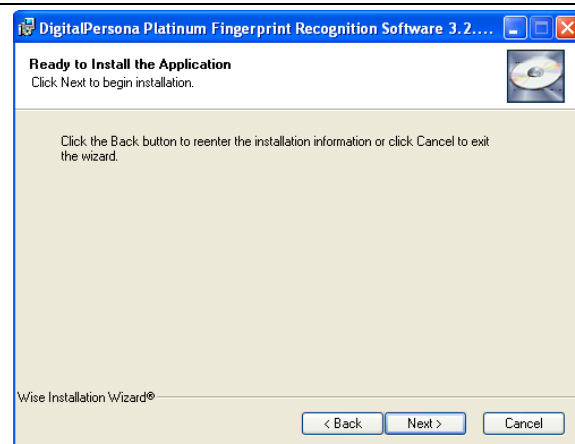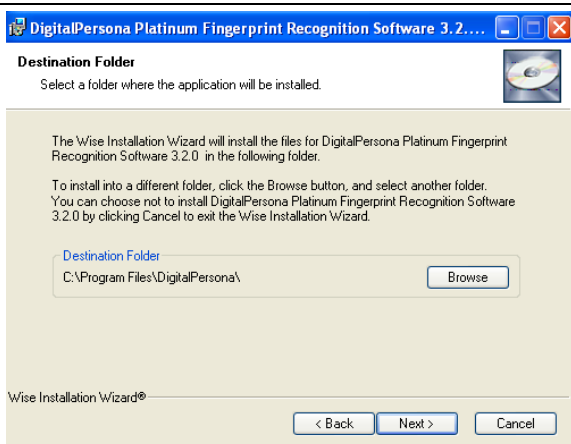
5. Click Next to accept the destination folder.

6. Click Next to begin installation.
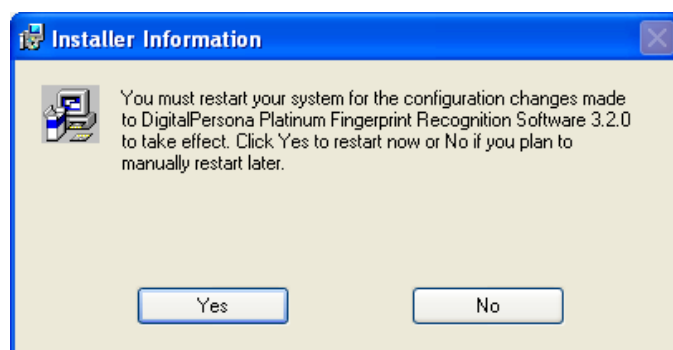
7. Click Finish.

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

IC Card Reader Driver Installation (optional)

1. Plug in the 3-in-1 MSR/I-Button/IC Card Reader module.
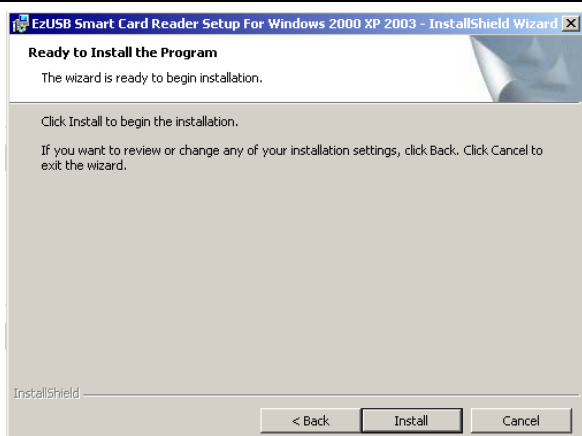2. Locate and Run the setup.exe file in folder <CD>:\Driver\Peripheral\IC Card Reader\EZ100PU Driver
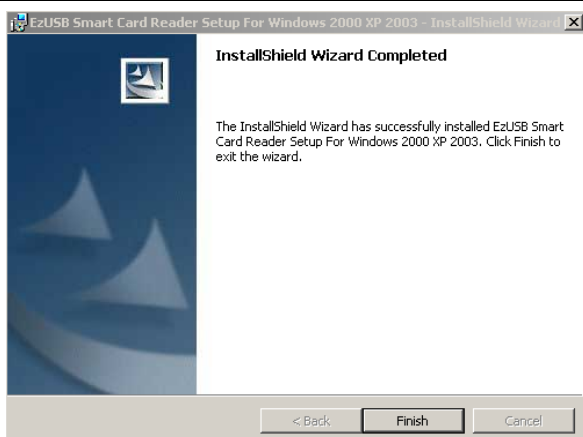

3. Select language, click OK.

4. Click Next on the Welcome screen.

5. Click Install to begin installation.

6. Click OK on the Note screen.

7. Click Finish.

AdvanPOS System Driver Installation (required for Cash Drawer and UPS)

1. Locate and Run the setup.exe file in folder <CD>:\Driver\System Driver\MB\Intel 91X for HP-8500 or <CD>:\Driver\System Driver\Z_H for HP-8520	

Setup - AdvanPOS System Driver Welcome to the AdvanPOS System Driver Setup Wizard This will install AdvanPOS System Driver 1.0 on your computer. It is recommended that you close all other applications before continuing. Click Next to continue, or Cancel to exit Setup. Next > Cancel	**Setup - AdvanPOS System Driver** **Ready to Install** Setup is now ready to begin installing AdvanPOS System Driver on your computer. Click Install to continue with the installation. < Back Install Cancel
2. Click Next on the Welcome screen.	3. Click Install on the Ready to Install screen.
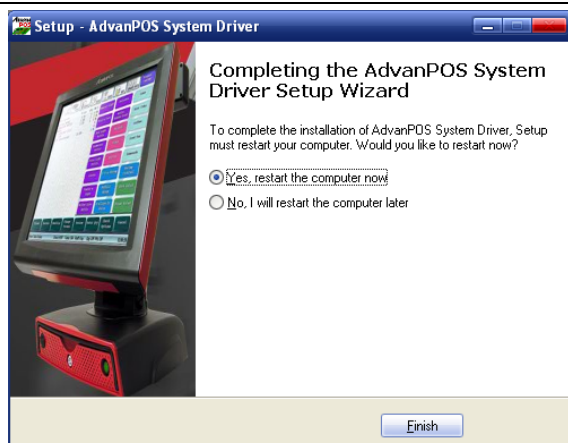
Setup - AdvanPOS System Driver Completing the AdvanPOS System Driver Setup Wizard To complete the installation of AdvanPOS System Driver, Setup must restart your computer. Would you like to restart now? ⦿ Yes, restart the computer now ◯ No, I will restart the computer later Finish	
4. Click Finish on the Completing installation screen. A system restart is required to complete the installation.	

OPOS CCO Driver Installation

Before installing the OPOS driver, please make sure the AdvanPOS System Driver has been installed. The OPOS driver for the HP-8500/8520 supports the Cash Drawer, MSR, I-Button (KeyLock), RFID, VFD (Line-Display), and UPS (Power).

1. Locate and Run the OposCCOs-1_12_000.exe file in folder <CD>:\Driver\OPOS\CCOs	
2. Click Next on the Welcome screen.	3. Click Next on the ReadMe screen.
4. Click Next to confirm the Destination Location.	5. Click Yes to backup the CCO files and select backup file destination directory, then click Next.
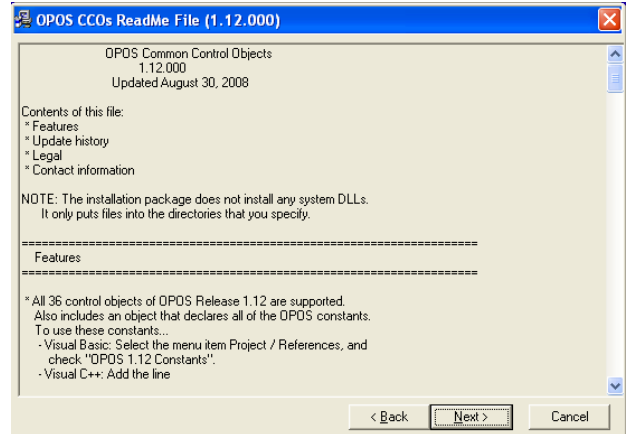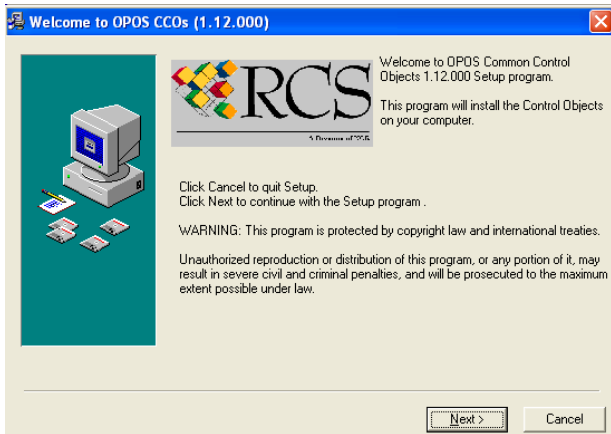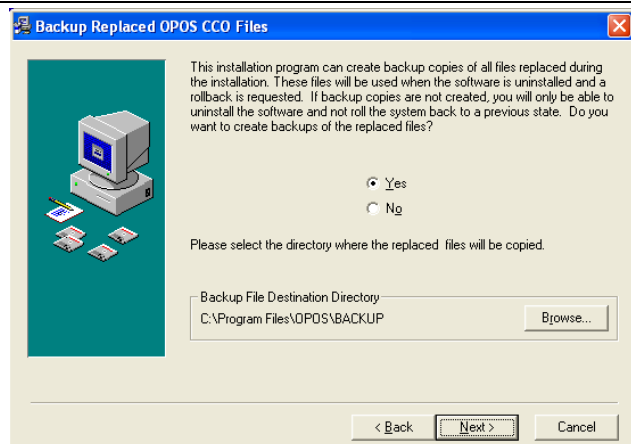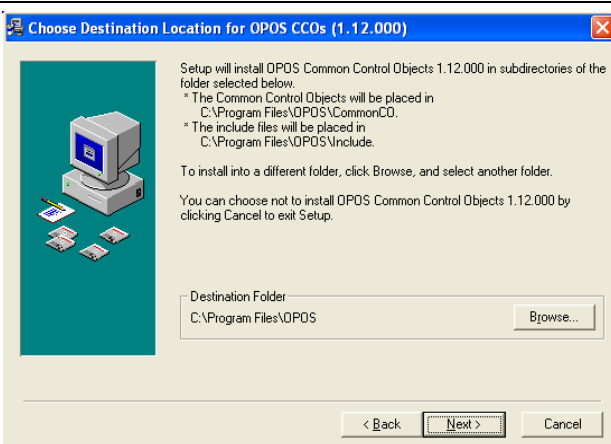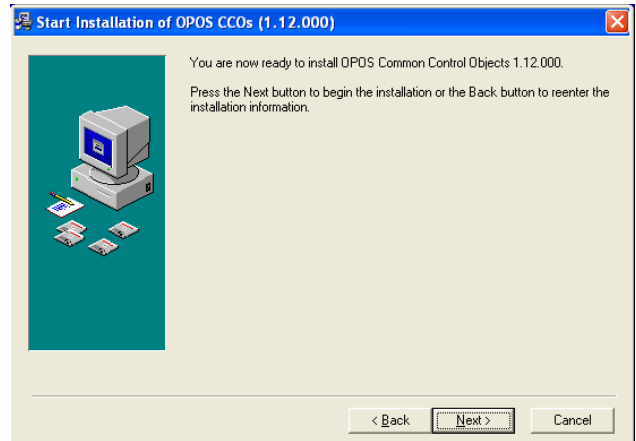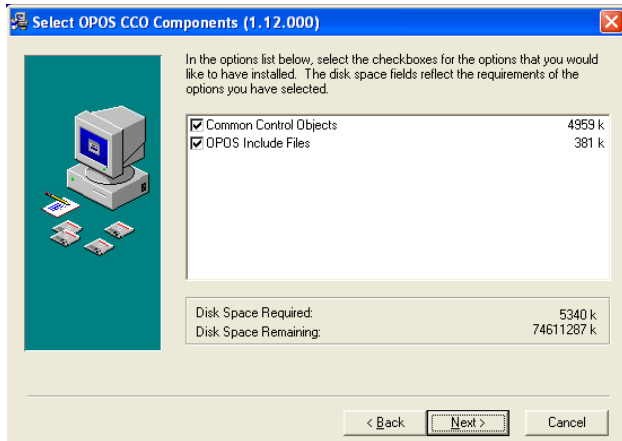
6. Select Common Control Objects and OPOS Include Files, click Next.	7. Click Next on the Start Installation screen.
8. Click Finish on the Installation Complete screen.	
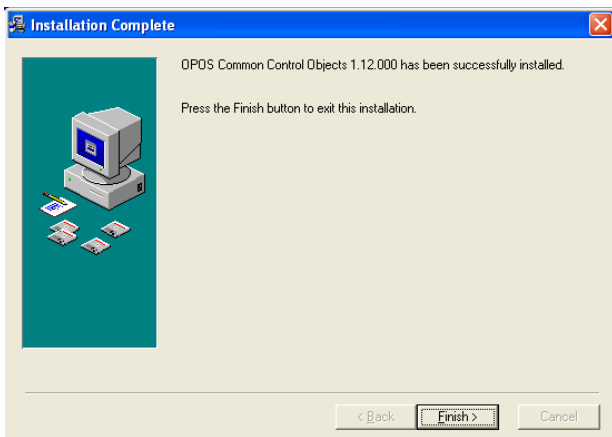
AdvanPOS OPOS Driver Installation

1. Locate and Run the setup.exe file in folder <CD>:\Driver\OPOS\Driver_1.12
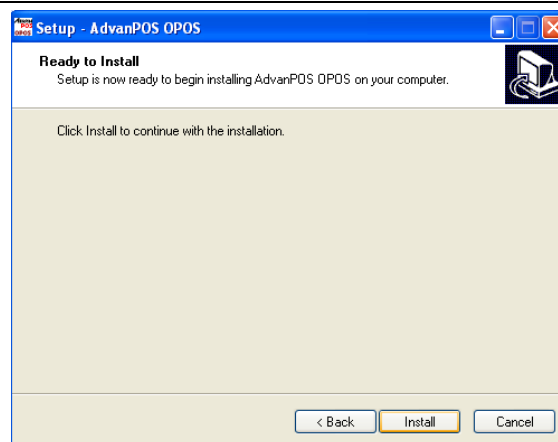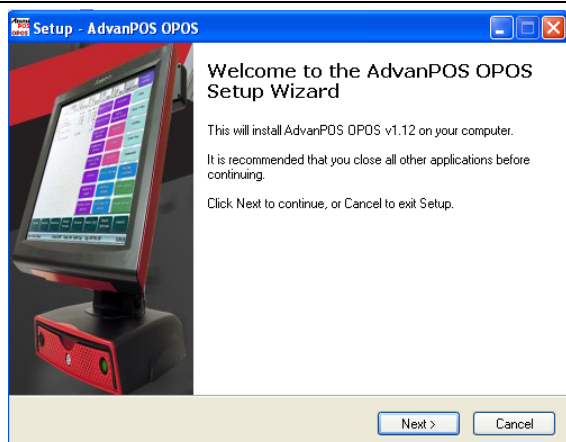
2. Click Next on the Welcome screen.	3. Click Install on the Setup screen.
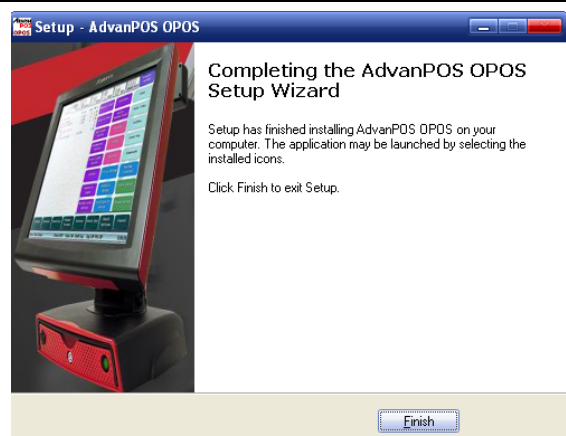
4. Click Finish on the Completing installation screen.	

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

```cpp
// 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

```cpp
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 VB.NET Cash Drawer Code for Windows

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

```vb
' 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
```

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.

```vb
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
```

```vb
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
```