ADVANPOS www.advanpos.com

ABOX-122 Series

Compact POS Box System

User Manual

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

Ver 2.0_2012/08/22

How to Use This Manual

This manual contains information to set up and use the ABOX-122. In addition, instructions are included for added hardware, upgrades, software, and optional items.

Chapter 1 An introduction to what you find in the ABOX-122 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 a wall mount kit, H-2120 and H-2150.

Chapter 4 PEB-973D and PEB-973HL main board diagrams, locations of jumpers, and connectors.

Chapter 5 Transfer board diagrams, locations of connectors, and connector pin definition.

Chapter 6 Installation instructions for the Intel chip set driver, video driver, audio, LAN, 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

First Edition March 2010

Patents and Trademarks

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

- Robust aluminum housing
- Supports VGA, 2-CH audio and Giga LAN
- 5 x COM, 7 x USB, 1 x CF II
- RoHS compliant

Specifications

ABOX-122 System Configuration		
CPU		Intel® Atom™ Luna Pier Dual Core Processor 1.66/1.8 GHz w/1MB L2 Cache fanless
System Chipset		Intel D510/D525+ICH8M
System Memory		Supports maximum 4GB with DDR2 800 MHz SO-DIMM Supports maximum 4GB with DDR3 1333 MHz SO-DIMM
Video Memory		Supports Intel DVMT, shared system memory
Compact Flash		Supports 1 x Compact Flash Card Type II
HDD		1 x internal 2.5" 160GB SATA hard disk drive (up to 250GB)
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®/ Windows®7 Pro Embedded
I/O Ports		
Serial Ports	ABOX-122	5 external: COM1, COM2, COM5, COM6 D-SUB pin 9 with +5V/+12V and COM4
	ABOX-122-DV	4 external: COM1, COM2, COM5 D-SUB pin 9 with +5V/+12V and COM4
	ABOX-122-S	3 external: COM1, COM2, COM5 D-sub pin 9 with +5V/+12V 3 internal: COM3 for touch screen, COM4 for AdvanBUS LVDS, COM6 reserved
	ABOX-122-3	5 external: COM1, COM2, COM5, COM6 D-SUB pin 9 with +5V/+12V and COM4
	ABOX-122R-3	4 external: COM1, COM2, COM5, COM6 D-SUB pin 9 with +5V/+12V
VGA Port	Others	1 x VGA port (D-SUB15)
	ABOX-122-DV	2 x VGA ports (D-SUB15)
PS/2	ABOX-122	1 x Keyboard
	ABOX-122-DV	1 x Keyboard
	ABOX-122-S	PS/2 reserved
	ABOX-122R-3	PS/2 reserved
	ABOX-122-3	1 x Keyboard
USB Ports	Others	Supports 7 USB 2.0 ports for future expansion (front x 1, rear x 6)
	ABOX-122R-3	Supports 5 USB 2.0 ports for future expansion (front x 1, rear x 4) - 3 x Normal USB ports - 1 x 12V powered USB port - 1 x 24V powered USB port
Parallel Port		1 x bi-directional parallel port (D-SUB25)

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
Mechanics and Environment	
Construction	Aluminum enclosure
Dimensions	235(L) x 204(W) x 64(H) mm (w/o rubber foot)
Housing Color	Red/Black and Black
Net Gross Weight	2.7 Kg
Operating Temperature	0 °C ~ 40 °C
EMI/Safety	CE, FCC, RoHS

Package Contents

The following items come standard with the ABOX-122 series:

POS System		**Power Adaptor**	
Utility and Main Board Chipset Driver CD		**AC Power Cord**	
Wall Mount Kit and Mounting Accessories (optional)	 		

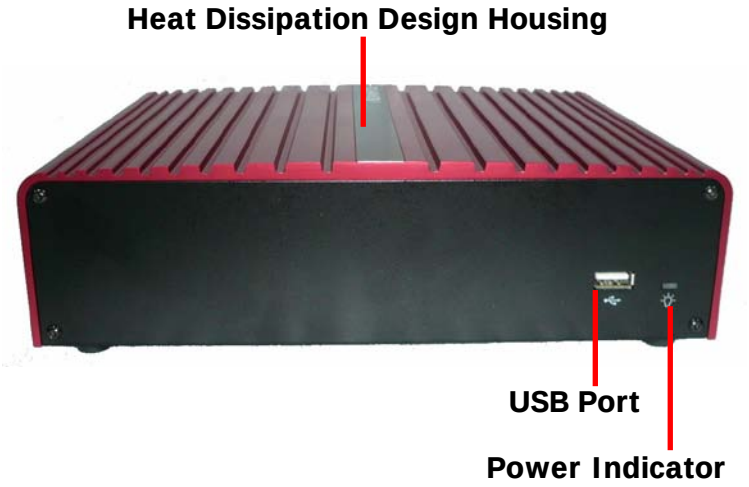
Options for ABOX-122 series

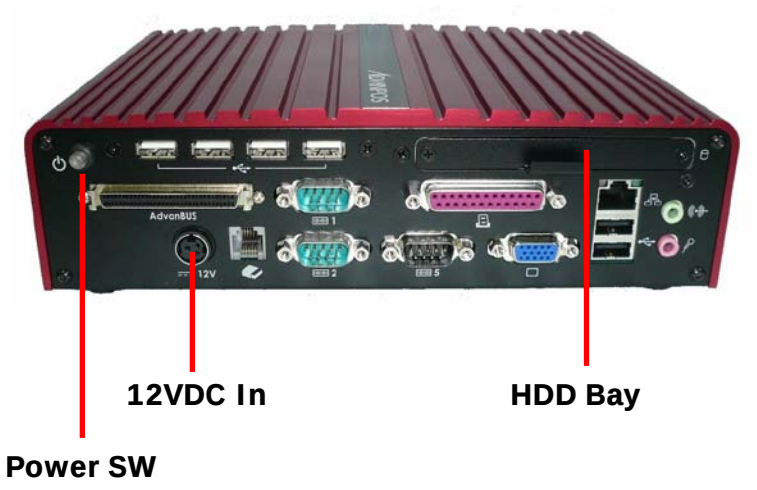
- Model H-2120 LVDS Output Monitor 1024 x768 250 nits with Touch
- Model H-2150 LVDS Output Monitor 1024 x 768 250 nits (expandable functions as below)
- Touch panel (COM type)
- Magnetic Stripe Reader (MSR) Module: triple track*
- 2-in-1 Module (Magnetic Stripe Reader + Fingerprint Reader) *
- 2-in-1 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
- LCM Customer Display: 4 lines 30 columns each (pole-type)
- VFD Customer Display: 9 mm height, 2 lines 20 characters each (rear mount type)

* Available in front or side swipe formats.

Base System

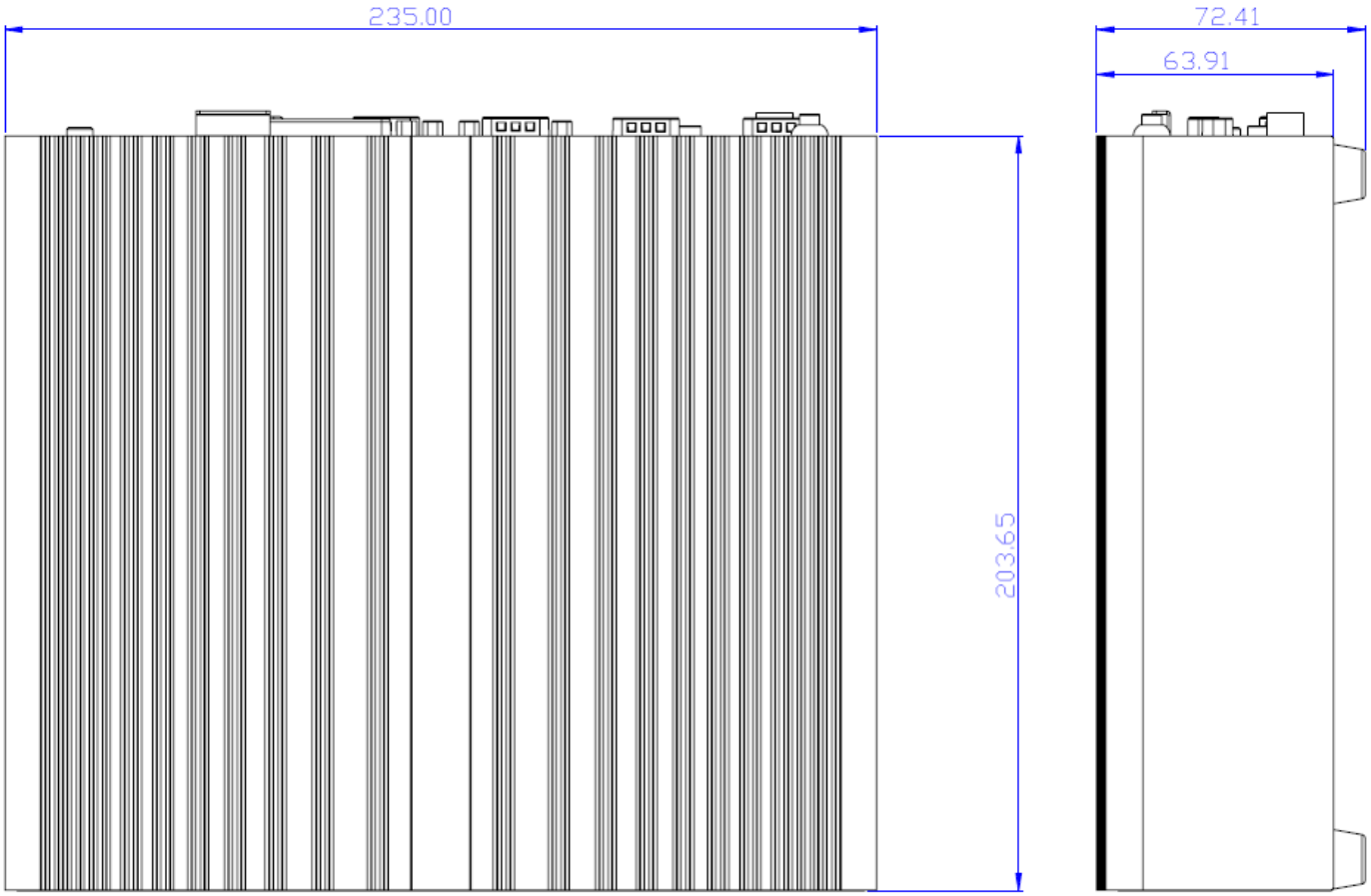
Before you begin, take a few moments to become familiar with the ABOX-122 series. Exterior I/O ports may vary according to model versions.

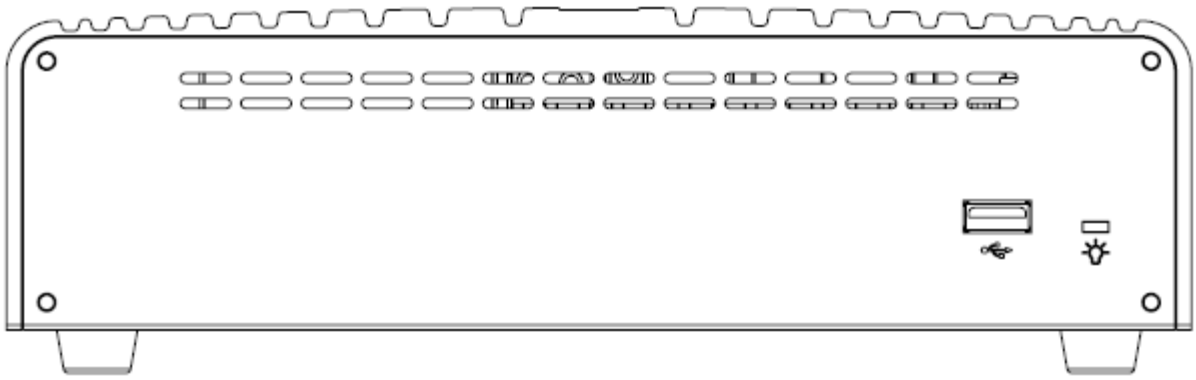




Dimensions

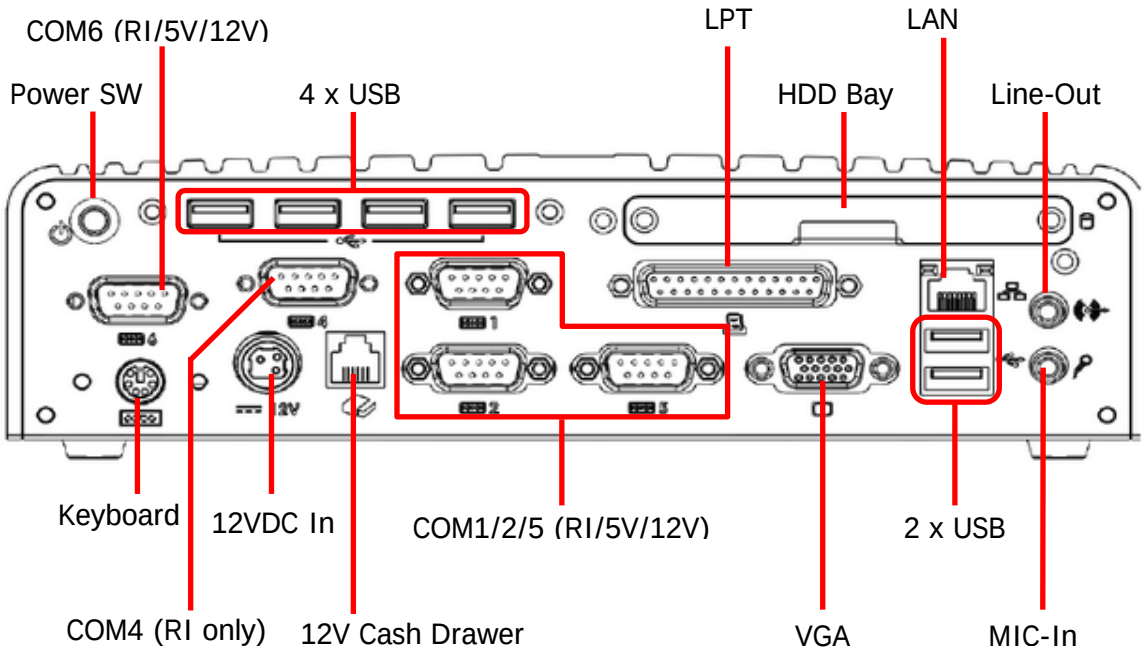
(Unit: mm)





ABOX-122 Connector Panel

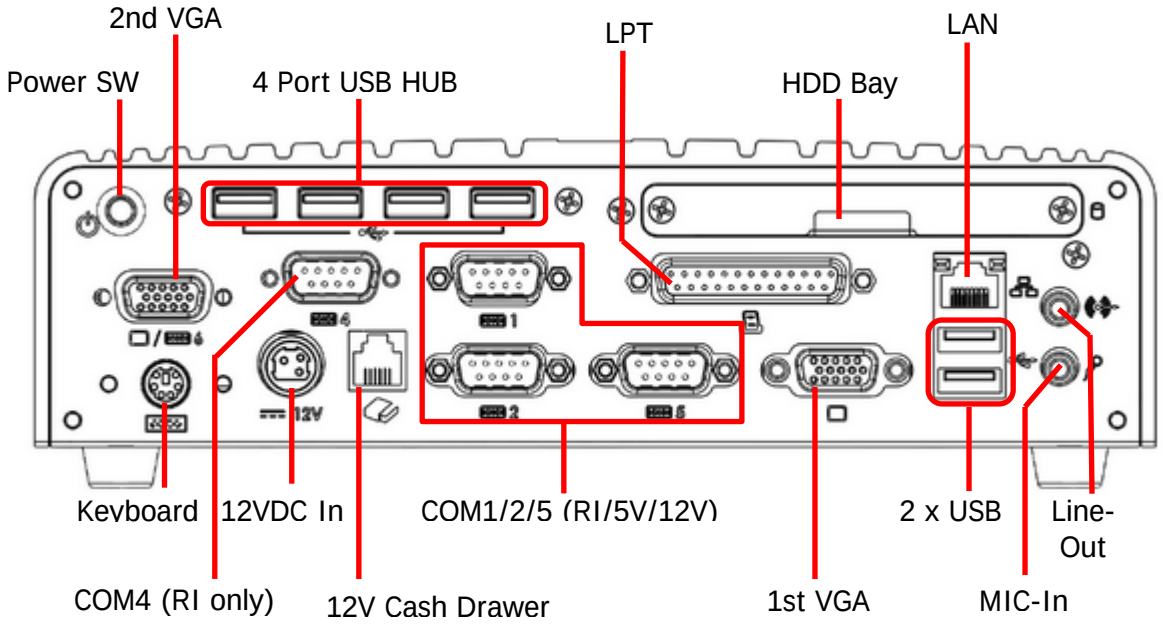
The ABOX-122's primary connector panel is located at the rear.



ABOX-122-DV Connector Panel

The ABOX-122-DV's primary connector panel is located at the rear.

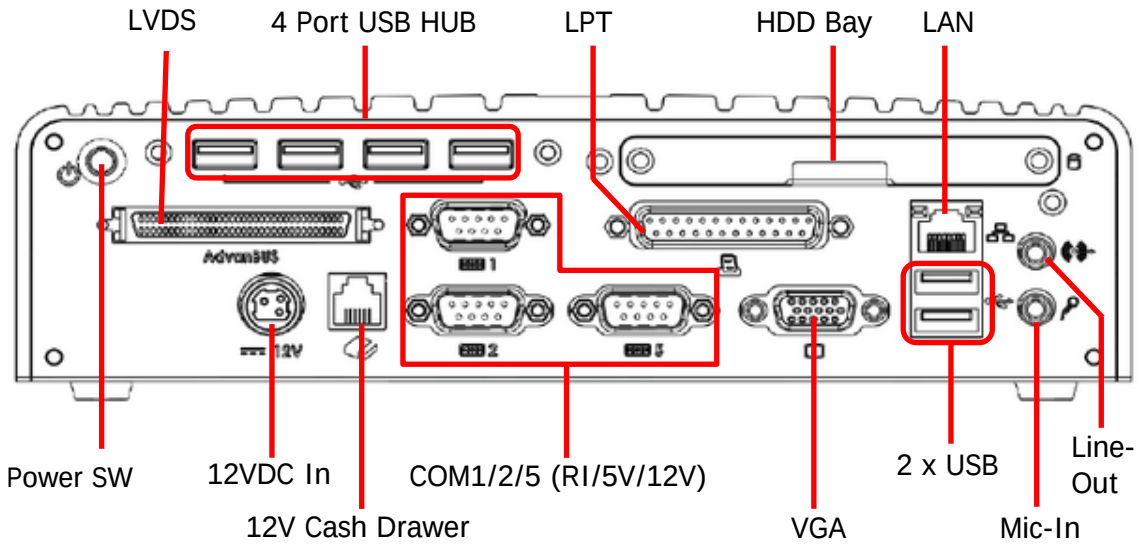
NOTE: The 2nd VGA port's signals are come from a LVDS to VGA transfer board. Please refer to Chapter 5 for the 2nd VGA port pin assignment.



ABOX-122-S Connector Panel

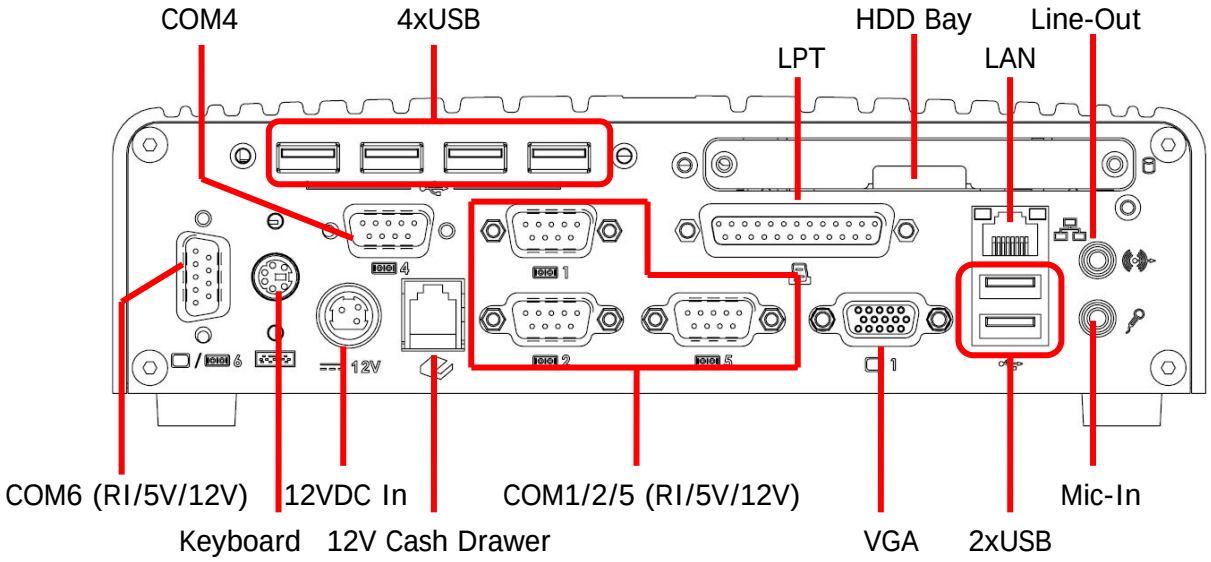
The ABOX-122-S's connector panel is located at the rear.

NOTE: The AdvanBUS port is a LVDS port (68 pin SCSI connector), it's defined by AdvanPOS and used for AdvanPOS's H-2150 dual display monitor. Please refer to Chapter 5 for the AdvanBUS port pin assignment.



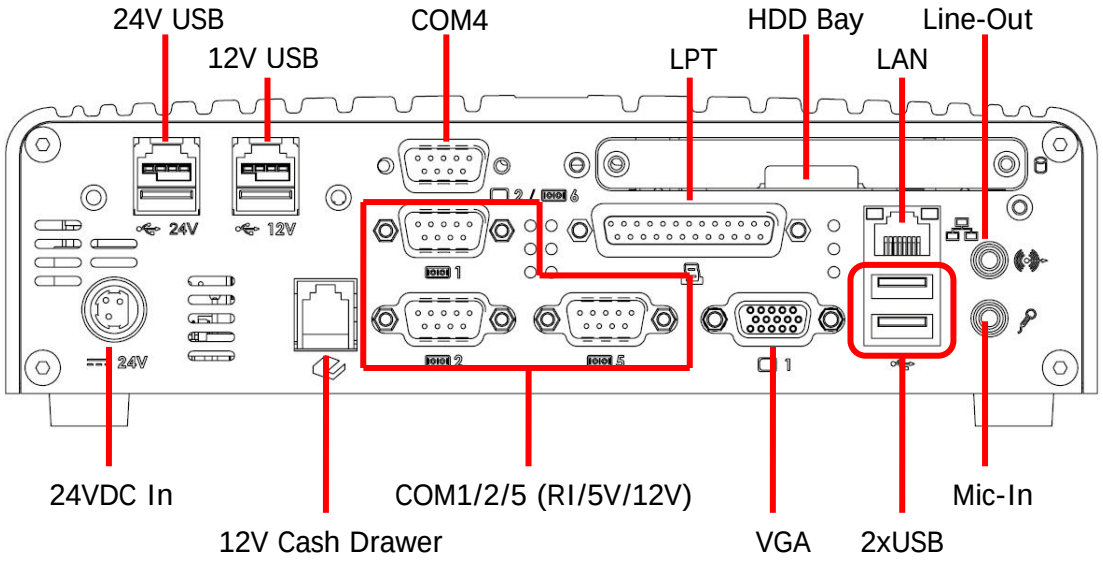
ABOX-122-3 Connector Panel

The ABOX-122-3's connector panel is located at the rear.



ABOX-122R-3 Connector Panel

The ABOX-122R-3's connector panel is located at the rear.



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 System Box Cover

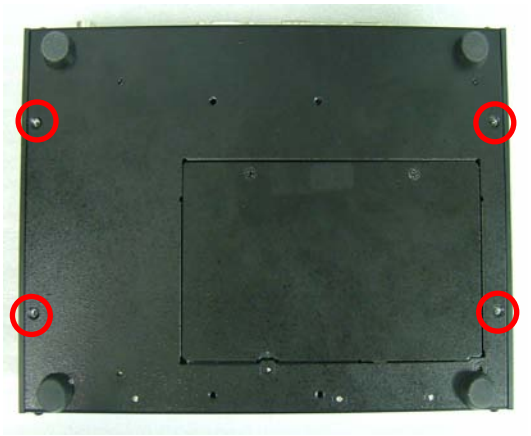
CAUTION: To prevent loss of work and damage to the system or drive:

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. Use a hexagonal wrench (allen key) to remove the eight screws indicated on the system box front and rear.

4. Place the box upside down, then remove the four screws indicated on the box bottom.



5. Move the box back to an upright position, and lift the box cover up and off.

Clearing CMOS

The ABOX-122'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 system box 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. Reattach the system box cover.

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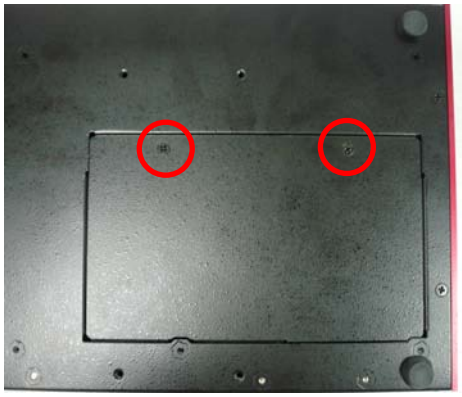
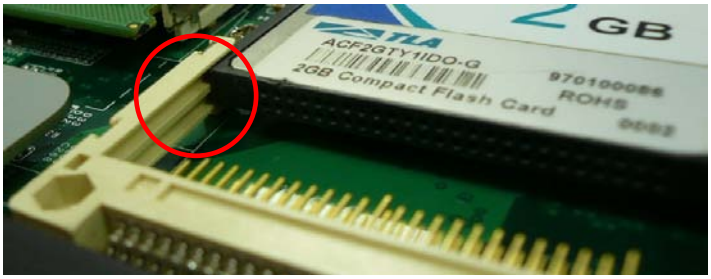
3. Place the main unit upside down. Remove the two screws indicated at the bottom of the base and lift off the CF cover in the direction of the arrow.



4. Insert the CF card into the socket.



NOTE: Grooves on both sides of the CF card should exactly match those on the socket, simplifying CF card installation.

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5. Replace the CF cover and set the box back 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” 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” 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 ABOX-122 comes standard with one preinstalled DIMM. To achieve maximum memory performance, up to 4GB of memory can be installed.

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

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

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

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

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

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

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

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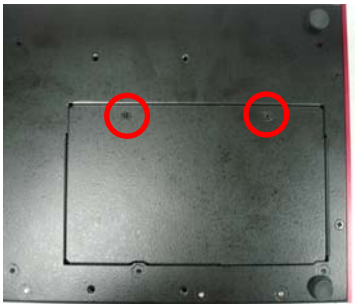
3. Place the system box upside down. Remove the two screws indicated on the bottom of the box and lift off the CF cover in the direction of the arrow.



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 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 CF cover and set the box back 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.

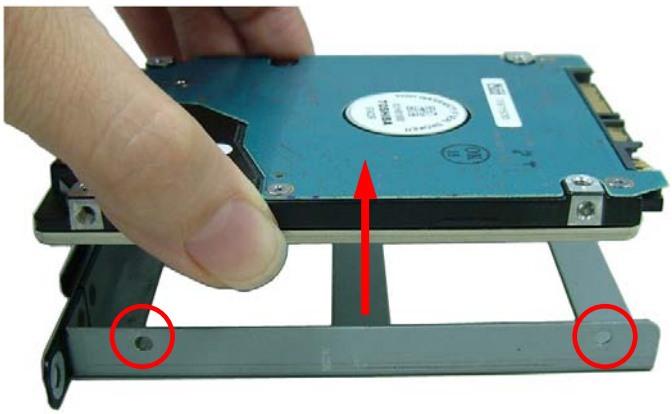
Before removing the original hard drive, be sure to back up its data so that you can transfer the data to the replacement hard drive. Also, if you are replacing the primary hard drive, make sure you have a recovery disc set to restore the operating system, software drivers, and any software applications 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. Remove the two screws that secure the HDD box, and carefully slide it out.

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



5. Insert the replacement hard disk into the HDD box, and re-secure the screws.

6. Slide the HDD box back into the system box, ensuring that it is pressed all the way in and properly seated.

7. Reattach the two screws that secure the HDD box.

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

NOTE: The capacity of a sector is 4096 bytes for 320GB HDD of WD. They are only suitable for Win7 or OS developed later than Win7. To use Microsoft earlier OS such as XP, POS Ready2009 , You should install support tools offered by original supplier to align the performence of HDD. Otherwise HDD life will be reduced about 48%. You can get the alignment tool from following website or driver CD included in the package.

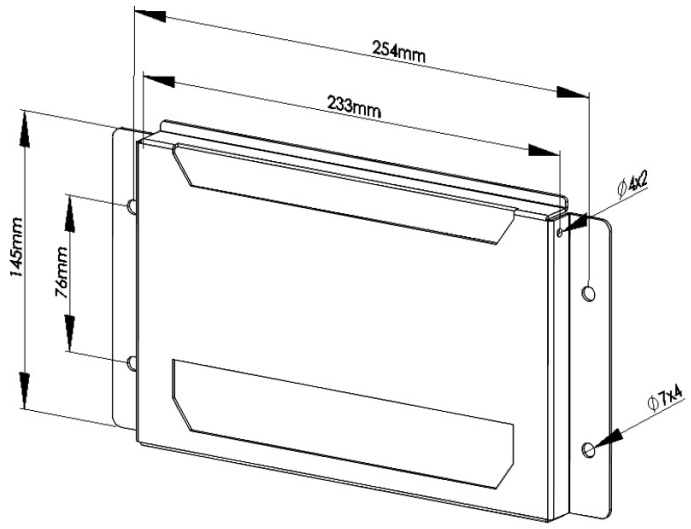
WD Alignment tool: http://support.wdc.com/product/downloadsw.asp?sid=128

Chapter 3 Optional Components and Peripherals

Wall Mount Kit Installation

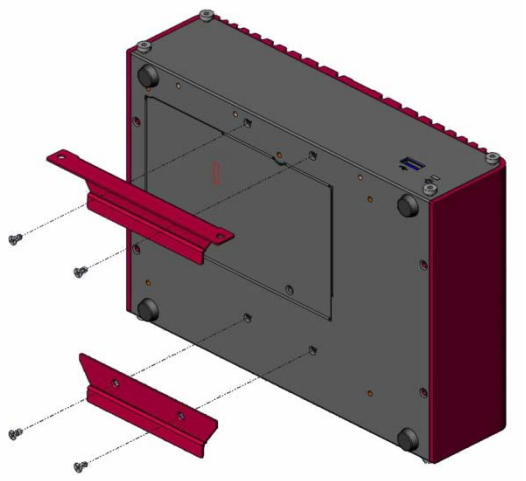
Select a flat surface on a wall of adequate strength, ensuring there will be proper ventilation and maneuvering space. Please use the right tools and accessories according to the wall material (drywall, concrete, solid wood, etc.) to securely support the system box. A fully equipped system may weigh up to 2.5 kg.

1. Drill four holes in the wall following the rectangular mounting plate layout as shown below. The rectangular drill pattern should be 204mm wide (horizontal) and 76mm high (vertical). Secure the wall mount holder to the wall with four screws.

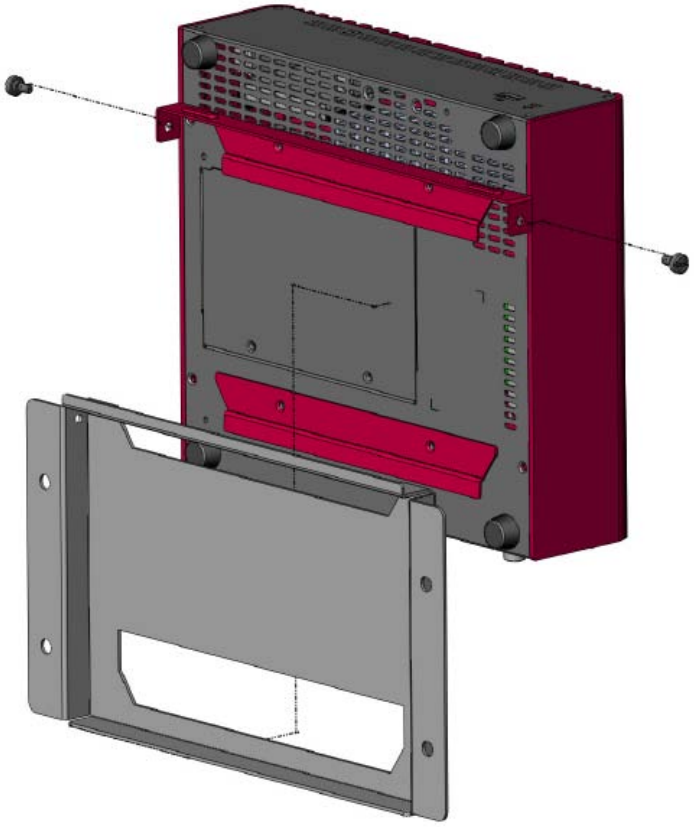


NOTE: Wall mounting screws are not supplied, as different types of walls require different types of screws. Please be sure the mounting screws used can support the weight of the unit.

2. Secure the top and bottom wall mount brackets to the box chassis with four screws (supplied).



3. After securing the two mounting brackets to the main unit, the system box can be slid onto the wall mount plate. After the unit is fit to the mount, two locking thumb screws (supplied) should be installed to ensure that the unit is secure.



H-2120 Pole-type Monitor Installation

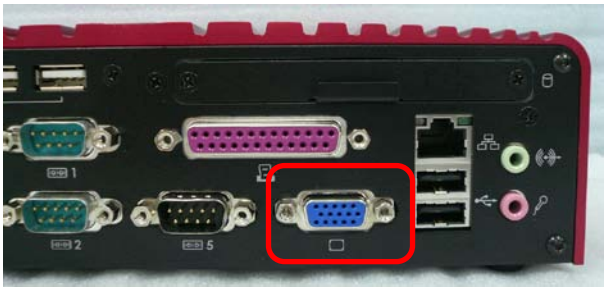
The H-2120 is a 12” LCD pole display designed for space limited environments and is available as a single screen or dual screen display. The pole display has a preinstalled VGA cable, audio cable, and power cord when delivered from the factory, which can be simply connected to their corresponding ports on the rear of the ABOX-122, ABOX-122-DV or ABOX-122-S.

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. Connect the VGA cable to the VGA port on the rear of the ABOX-122 series.



4. Connect the audio cable to the audio line-out port on the rear of the ABOX-122 series.

5. Connect the H-2120 power cord to an available power outlet.

6. Connect the model’s power cord to a power outlet.

7. Turn on both the model’s power and the H-2120 pole display power.

NOTE: When the computer’s operating system shuts down, the H-2120 main display and 2nd display will remain in standby power mode. You must turn off the H-2120 power switch, then the power will shut down completely.

H-2150 Pole-type Monitor Installation

H-2150 is a 15” LCD pole display designed for space limited environments and is available as a single screen or dual screen display. The pole display has a preinstalled VGA cable, SCSI cable, and power cord when delivered from the factory, which can be simply connected to their corresponding ports on the rear of the ABOX-122-S.

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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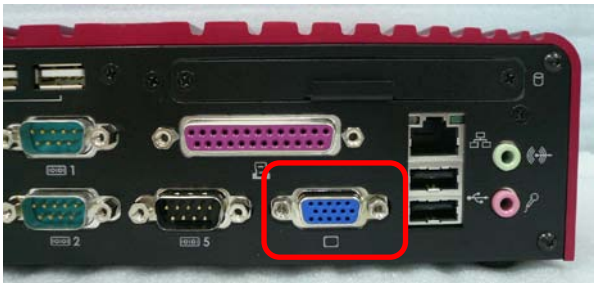
3. Connect the VGA cable to the VGA port on the rear of the ABOX-122-S.



4. Connect the SCSI cable to the AdvanBUS port on the rear of the ABOX-122-S.

5. Connect the H-2150 power cord to an available power outlet.

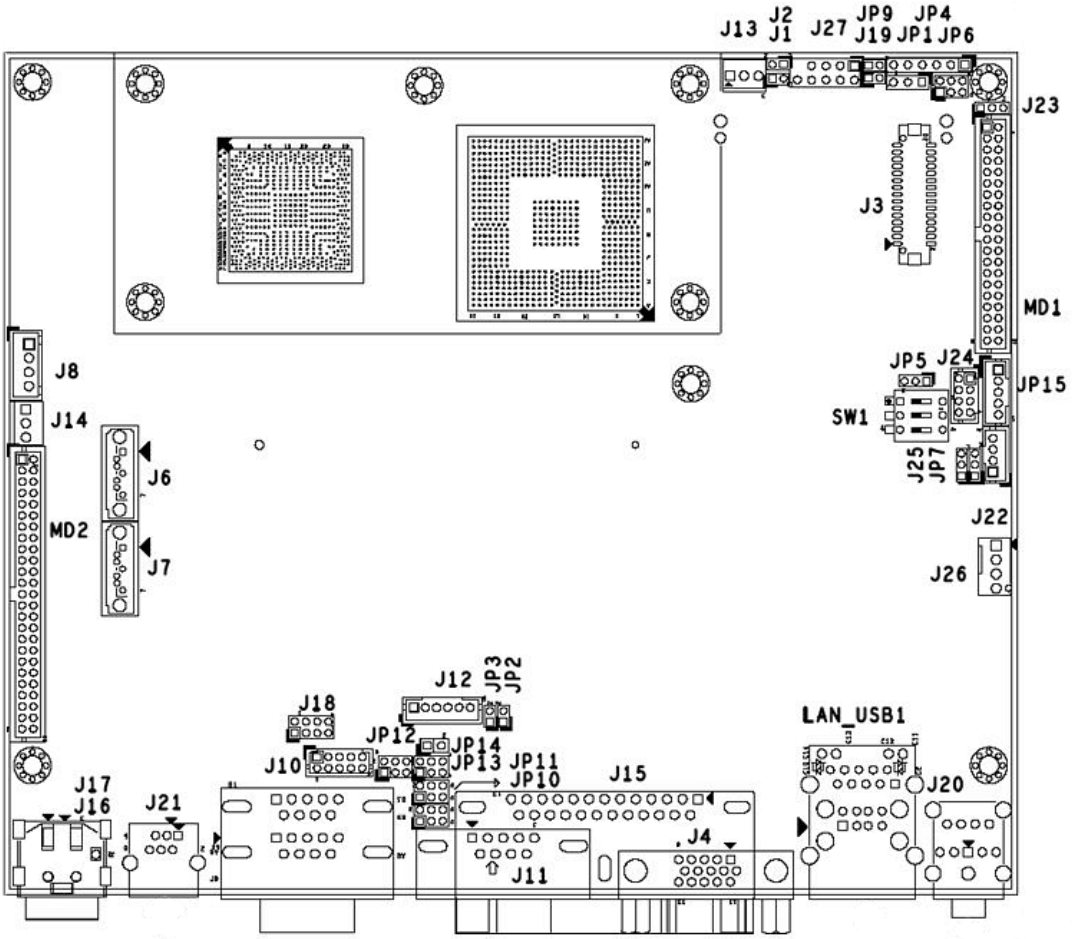
6. Connect the ABOX-122-S power cord to a power outlet.

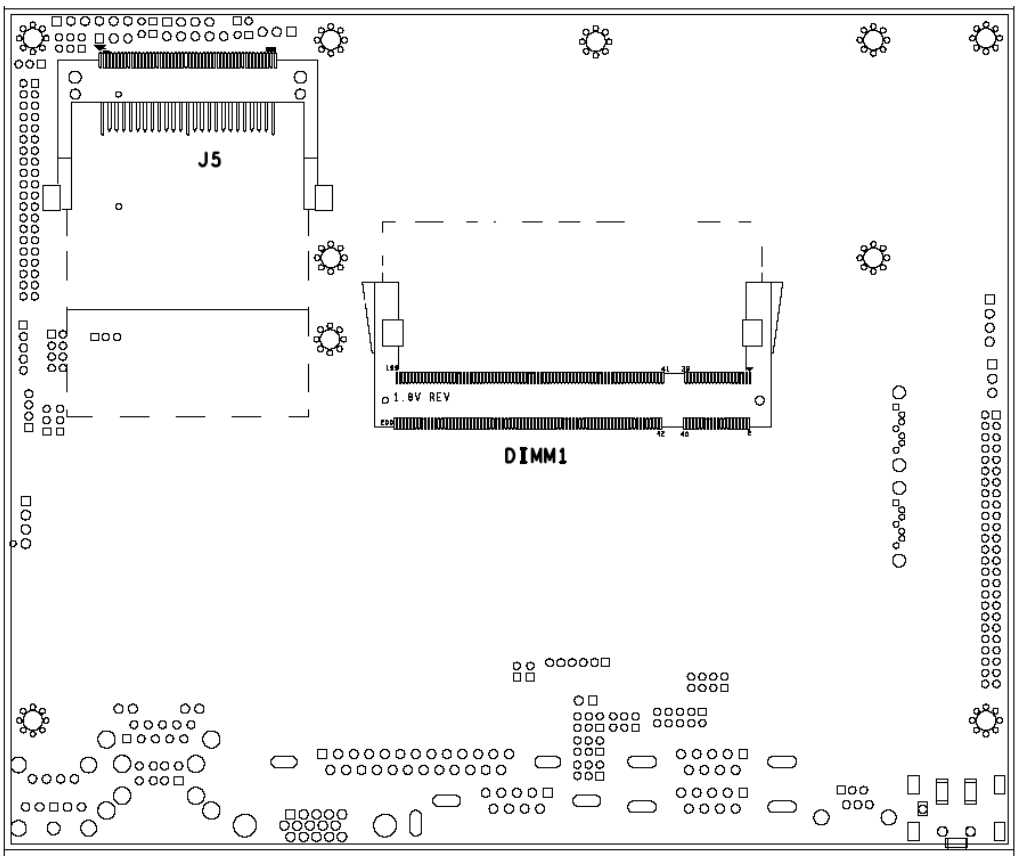
7. Turn on both the ABOX-122-S power and H-2150 power.

NOTE: When the computer’s operating system shuts down, the H-2150 main display will power off, but the 2nd display will remain in standby power mode. You must turn off the H-2150 power switch, then the power will shut down completely.

Chapter 4 Main Board Configuration

Jumper and Connector Locations of PEB-973D





Connector Allocation

Connector	Function
J3	LVDS Connector
J4	VGA Connector
J5	Compact Flash Connector
J6,J7	SATA Connector
J8	SATA Power Connector
J9	COM1 & COM2 Connector
J10	COM6 Port Pin Header
J11	COM5 Port Connector
J12	PS/2 Keyboard/Mouse Connector
J13	CPU FAN
J14	SYS FAN
J15	Print Port Connector
J16	POWER DC +12V Connector
J17	POWER DC +12V Connector
J18	Front panel pin header
J19	HDD LED Pin header
J20	AUDIO JACK Connector
J21	CASH DRAWER Interface Connector
J22	External USB Pin Header
J24	External USB Pin Header
J26	12V Output Connector
J27	Port 80 Connector (2x5-1(Pin 9) Pin Header/2.54mm)
JP2	CASE OPNE Pin Header
JP3	SUS LED Pin Header
JP4	XC3S200A JTAG
JP15	BACK LIGHT PWR Connector

Connector Pin Assignments of PEB-973D

J4

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

+12V DC Input DIN Connector

PIN No.	Description
1	+12V
2	GND
3	+12V

J21

Cash Drawer Port RJ-11 Connector

PIN No.	Description	PIN No.	Description
1	GND	2	KICK-OUT1
3	GPI	4	+12V
5	12V for drawer B	6	GND

J9/J11

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		

LAN_USB1

LAN Port RJ-45 and USB Port1 / Port4 Connector

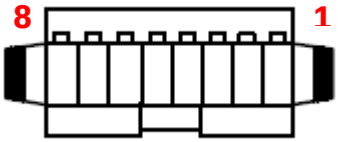
PIN No.	Description	PIN No.	Description
T1	LAN0+	B1	+5V
T2	LAN0-	B2	USBD1-
T3	LAN1+	B3	USBD1+
T4	LAN2+	B4	GND
T5	LAN2-	B5	+5V
T6	LAN1-	B6	USBD4-
T7	LAN3+	B7	USBD4+
T8	LAN3-	B8	GND

J20

Speaker out and MIC Connector

PIN No.	Description
Top	Stereo line out
Bottom	Microphone input

External COM6 Port: Connector Pin Definitions



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

Jumper Settings of PEB-973D

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

JP9

CF Card Master Slave Selection

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

JP6

LVDS Panel VDD Selection

PIN No.	Function
2-4 Short	3.3V ★
3-4 Short	12V
4-6 Short	5V

JP7

LVDS Back Light Enable Level Selection

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

JP14

PS/2 KB and Mouse Interface Enable Selection

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

JP13

COM6 RI Function Selection

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

JP10

COM1 RI Function Selection

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

JP11

COM2 RI Function Selection

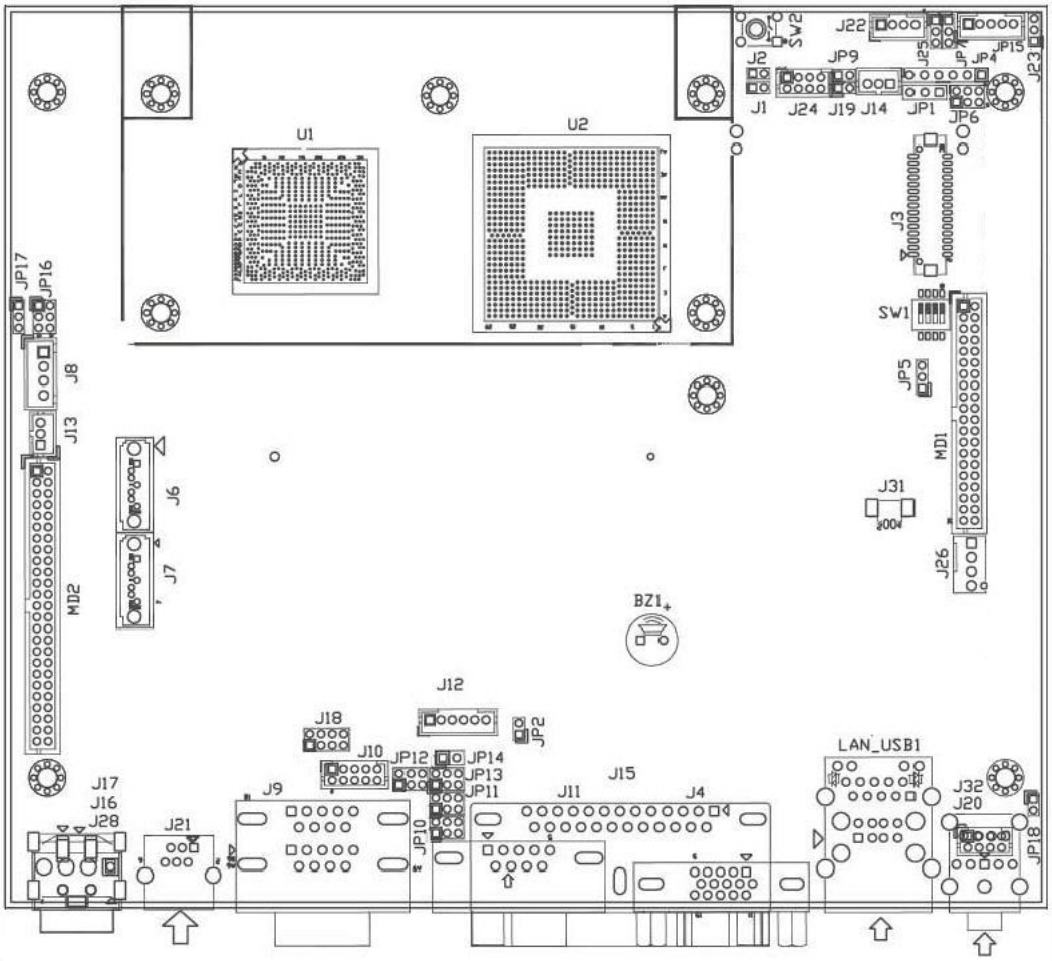
PIN No.			Function
1-2	3-4	5-6	
Short			+5V output
	Short		RI function ★
		Short	+12V output

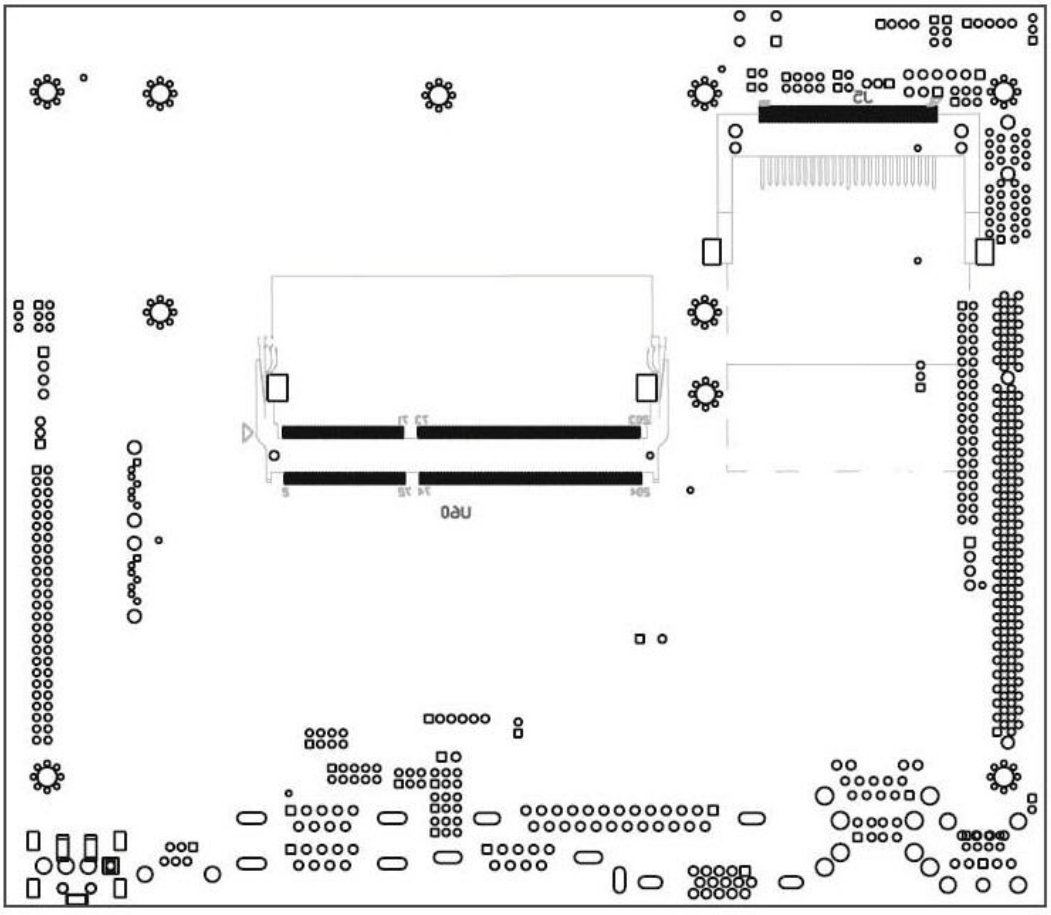
JP12

COM5 RI Function Selection

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

Jumper and Connector Locations of PEB-973HL





Connector Allocation

Connector	Function
J3	LVDS Connector
J4	VGA Connector
J5	Compact Flash Connector
J6,J7	SATA Connector
J8	SATA Power Connector
J9	COM1 & COM2 Connector
J10	COM6 Port Pin Header
J11	COM5 Port Connector
J12	PS/2 Keyboard/Mouse Connector
J13	CPU FAN
J14	SYS FAN
J15	Print Port Connector
J16	POWER DC +12V Connector
J17	POWER DC +12V Connector
J18	Front panel pin header
J19	HDD LED Pin header
J20	AUDIO JACK Connector
J21	CASH DRAWER Interface Connector
J22	External USB Pin Header
J24	External USB Pin Header
J26	12V Output Connector
J28	POWER DC +12V Power Header
J29	PCI SLOT
J30	PCI-E x1 SLOT
J31	Battery pin header
J32	AUDIO Pin Header
JP2	CASE OPNE Pin Header
JP4	XC3S200A JTAG
JP15	BACK LIGHT PWR Connector

Connector Pin Assignments of PEB-973HL

J3

LVDS Connector

PIN No.	Description	PIN No.	Description
1	LVDS VDD	2	KICK-OUT1
3	LCD1DO0+	4	LCD1DO0+
5	LCD1DO1+	6	LCD1DO1-
7	LCD1DO2+	8	LCD1DO2-
9	LCD1DO3+	10	LCD1DO3-
11	LCD1CLK+	12	LCD1CLK-
13	LDDC_CLK	14	LDDC_DATA
15	GND	16	GND
17	LCD2DO0+	18	LCD2DO0-
19	LCD2DO1+	20	LCD2DO1-
21	LCD2DO2+	22	LCD2DO2-
23	LCD2DO3+	24	LCD2DO3-
25	LCD2CLK+	26	LCD2CLK-
27	NC	28	NC
29	GND	30	GND

J10

COM6 Port Pin Header

PIN No.	Description	PIN No.	Description
1	DCD#	2	DSR#
3	RXD#	4	RTS#
5	TXD#	6	CTS#
7	DTR#	8	RI (Voltage)
9	GND	10	GND

J12

PS/2 Keyboard/Mouse Pin Header

PIN No.	Description
1	L_KCLK
2	L_MDAT
3	L_KDAT
4	KBVCC
5	L_MCLK
6	GND

J13/J14 CPU & SYS 12V DC Fan Connector

PIN No.	Description
1	GND
2	+12V
3	FAN Control

J15 Print Port Connector

PIN No.	Description	PIN No.	Description
1	P_STB-	2	P_PD0
3	P_PD1	4	P_PD2
5	P_PD3	6	P_PD4
7	P_PD5	8	P_PD6
9	P_PD7	10	ACK-
11	BUSY	12	PE
13	SLCT	14	P_AFD-
15	ERR-	16	P_INIT-
17	P_SLIN-	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND		

J16 POWER DC +12V Connector

PIN No.	Description
1	+12V
2	GND
3	+12V

J18 Front Panel Pin Header

PIN No.	Description	PIN No.	Description
1	SUS_LED+	2	SUS_LED-
3	Power_LED+	4	Power_LED-
5	GND	6	SYS_ Reset
7	Power Switch	8	GND

J19

HDD LED Pin Header

PIN No.	Description
1	HDD_LED+
2	HDD_LED-

J21

Cash Drawer Interface Connector

PIN No.	Description	PIN No.	Description
1	GND	2	KICK-OUT1
3	IN-SENSE	4	+12V
5	KICK-OUT2	6	GND

J22

External USB Pin Header

PIN No.	Description
1	USB power (5VSB)
2	USB DATA A-
3	USB DATA A+
74	GND

J24

External USB Pin Header

PIN No.	Description	PIN No.	Description
1	USB power	2	USB power
3	USB DATA A-	4	USB DATA B-
5	USB DATA A+	6	USB DATA B+
7	GND	8	GND

J26

+12V Output Connector

PIN No.	Description
1	+12V
2	+12V
3	GND
4	GND

J28

Power DC +12V Power Header

PIN No.	Description
1	GND
2	GND
3	+12V
4	+12V

J32

AUDIO Pin Header

PIN No.	Description	PIN No.	Description
1	Line out-R	2	MIC-R
3	SE/BTL Control	4	Ground -
5	Ground	6	MIC-L
7	Line out-R	8	Ground

MD1

Multi Purpose Port1 Connector

PIN No.	Description	PIN No.	Description
1	AMP_L+	2	LVDS BKLTEN
3	AMP_L-	4	+12V
5	Gnd	6	+12V
7	Gnd	8	+12V
9	VDD_LVDS	10	LVDS Adjust
11	VDD_LVDS	12	Gnd
13	LVDS DATAP0	14	Gnd
15	LVDS DATAN0	16	Gnd
17	LVDS DATAP1	18	USB DATA5P
19	LVDS DATAN1	20	USB DATA5N
21	LVDS DATAP2	22	Gnd
23	LVDS DATAN2	24	USB DATA6P
25	LVDS DATAP3	26	USB DATA6N
27	LVDS DATAN3	28	Gnd
29	LVDS CLKP	30	USB DATA4P
31	LVDS CLKN	32	USB DATA4N
33	Gnd	34	+5V
35	Gnd	36	+5V
37	Gnd	38	K/B DATA
39	Gnd	40	K/B CLK

MD2

Multi Purpose Port2 Connector

PIN No.	Description	PIN No.	Description
1	AMP_R+	2	+5V
3	AMP_R-	4	+5V
5	SATA TXP0	6	+5V
7	SATA TXN0	8	+5V
9	GND	10	+5V
11	SATA RXP0	12	+5V
13	SATA RXN0	14	+12V
15	GND	16	+12V
17	TXD#3	18	CTS#3
19	RXD#3	20	DSR#3
21	RTS#3	22	DTR#3
23	Power On Switch	24	GND
25	GND	26	SATA TXP1
27	USB DATA7P	28	SATA TXN1
29	USB DATA7N	30	GND
31	GND	32	SATA RXP1
33	Power LED+	34	SATA RXN1
35	Power LED-	36	GND
37	GND	38	USB3 VCC
39	GND	40	USB DATA3N
41	INTERRUPT	42	USB DATA3P
43	GND	44	USB3 GND
45	TXD#4	46	RXD#4
47	RTS#4	48	CTS#4
49	DSR#4	50	DTR#4

JP2

Case Open Pin Header

PIN No.	Description
1	CASE OPEN#
2	GND

JP4

XC3S200AJTAG

JP1	Function
1	+V3.3
2	GND
3	TCK
4	TDO
5	TDI
6	TMS

JP15

BLACK LIGHT PWR Connector

PIN No.	Description
1	VCC
2	GND
3	+12V
4	GND
5	ENABLE

Jumper Settings of PEB-973HL

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

CMOS RAM charge / discharge setup

JP1	Function
1-2 Short	Charge ★
2-3 Short	Clear CMOS

SW1

LVDS 24bit Single & Dual Channel Selection

SW1(2-3-4)	Function
Off-Off-Off	24bit 2ch(Scalar Mode)
Off-On-Off	24bit 1ch(By Pass Mode)★
On-Off-Off	18bit 1ch(By Pass Mode)

JP5

LVDS 24bit Single & Dual Channel Voltage Selection

JP5	Function
1-2 Short	Scalar Mode(Dual Channel)
2-3 Short	By Pass Mode(Single Channel)★

Note:
Please adjust the correct voltage according to the way that SW1 choose.

JP6

LVDS Panel VDD Input Voltage Selection

JP6	Function
2-4 Short	3.3V ★
3-4 Short	12V
4-6 Short	5V

JP7

LVDS Panel Backlight Enable Voltage Selection

JP7	Function
1-2 Short	3.3V ★
2-3 Short	5V

J23

LVDS Panel Backlight Control Selection

J23	Function
1-2 Short	HIGH ★
2-3 Short	LOW

JP9

CF Card Master Slave Selection

JP9	Function
1-2 Short	Master ★
1-2 Open	Slave

JP10

COM1 RI Function Selection

JP10			Function
1-2	3-4	5-6	
Short			+5V output
	Short		RI function ★
		Short	+12V output

JP11

COM2 RI Function Selection

JP11			Function
1-2	3-4	5-6	
Short			+5V output
	Short		RI function ★
		Short	+12V output

JP12

COM5 RI Function Selection

JP12			Function
1-2	3-4	5-6	
Short			+5V output
	Short		RI function ★
		Short	+12V output

JP13

COM6 RI Function Selection

JP13.			Function
1-2	3-4	5-6	
Short			+5V output
	Short		RI function ★
		Short	+12V output

Note:
Wrong voltage selection may damage the COM Port device. Please survey COM port device's RI before setup this jumper setting.

JP14 Key Board & Mouse Voltage

JP14	Function
1-2 Short	VCC ★
1-2 Open	N VCC

JP16 H/W STAT RAID Mode Selection

JP16	Function
3-5 ;4-6 short	RAID 0 mode
1-3 ; 4-6 short	RAID 1 mode
3-5 ; 2-4 short	JBOD mode
1-3 ; 2-4 short	Port multiplier(to clear RAID)

Note:
Change the RAID mode, please must multiplier (to clear RAID) first.

SW2 H/W RAID Mode Selection

SW2	Function
0	Port multiplier(to clear RAID)
1	JBOD mode ★
2	RAID 1 mode
3	RAID 0 mode

JP17 Auto Rebuilding Selection

JP17	Function
1-2 short	ENABLE ★
2-3 short	DISABLE

JP18 Auto Amplifier SE or BTL mode Section

JP18	Function
Open	MTL mode ★
Short	SE mode

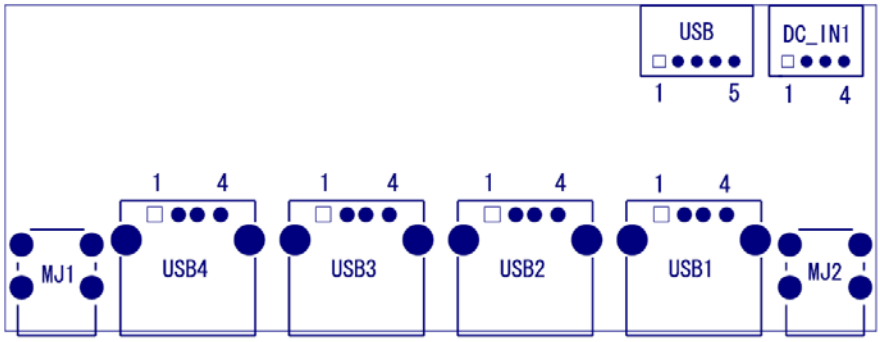
J25 USB Port (J24) Voltage Section

J25	Function
1-2 short	+5V
2-3 short	5VSB ★

Chapter 5 Transfer Boards and I/O Ports Configuration

USB HUB Board: Connector Allocation

The USB HUB Board transfers signals form main board to external 4 Port USB HUB.

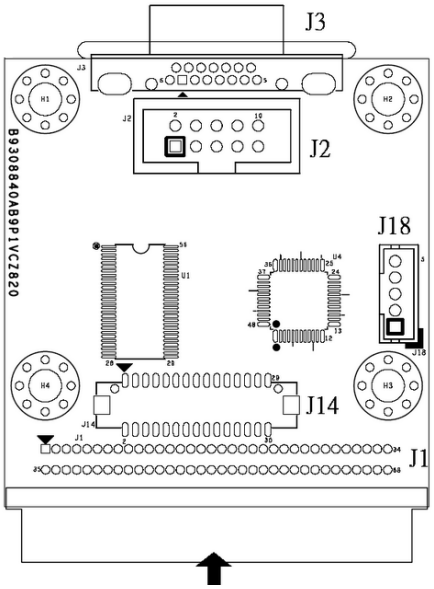


Connector Allocations

Connector	Function
USB	Client USB Connector
DC_IN1	Power Connector
USB1/2/3/4	4Port USB HUB Connector

LVDS to VGA Transfer Board: Connector Allocation

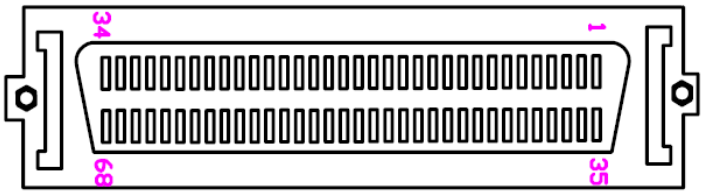
The LVDS to VGA Transfer Board transfers signals form main board to external 2nd VGA port (ABOX-122-DV only).



Connector Allocations

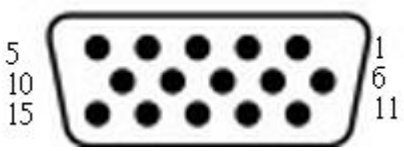
Connector	Function
J1	Main Connector
J2	VGA Box Header
J3	VGA Connector (DB15)
J14	LVDS Signal Connector
J18	Power Connector

External AdvanBUS LVDS Port: Connector Pin Definitions



PIN No.	Description	PIN No.	Description
1	AMP_L+	2	AMP_L-
3	GND	4	VDD_LVDS
5	VDD_LVDS	6	GND
7	Rxin 0+	8	Rxin 0-
9	GND	10	Rxin 1+
11	Rxin 1-	12	GND
13	Rxin 2+	14	Rxin 2-
15	GND	16	Rxin 3+
17	Rxin 3-	18	GND
19	CLK+	20	CLK-
21	GND	22	AMP_R+
23	AMP_R-	24	TXD3
25	RXD3	26	RTS3
27	PSW1	28	PSW2(G)
29	PLED+	30	PLED-
31	GND	32	TXD4
33	RTS4	34	DSR4
35	LVDS_BKEN	36	LVDS_ADJ
37	GND	38	+12V
39	+12V	40	+12V
41	GND	42	USB5 D+
43	USB5 D-	44	GND
45	USB6 D+	46	USB6D-
47	GND	48	USB0 D+
49	USB0 D-	50	GND
51	+5V	52	+5V
53	K/B DATA	54	K/B CLK
55	GND	56	CTS3
57	DSR3	58	DTR3
59	GND	60	+5V
61	+5V	62	+5V
63	+12V	64	+12V
65	GND	66	RXD4
67	CTS4	68	DTR4

External 2nd VGA Port: Connector Pin Definitions



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

Chapter 6 Software Setup

Pre-Installation Requirements

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

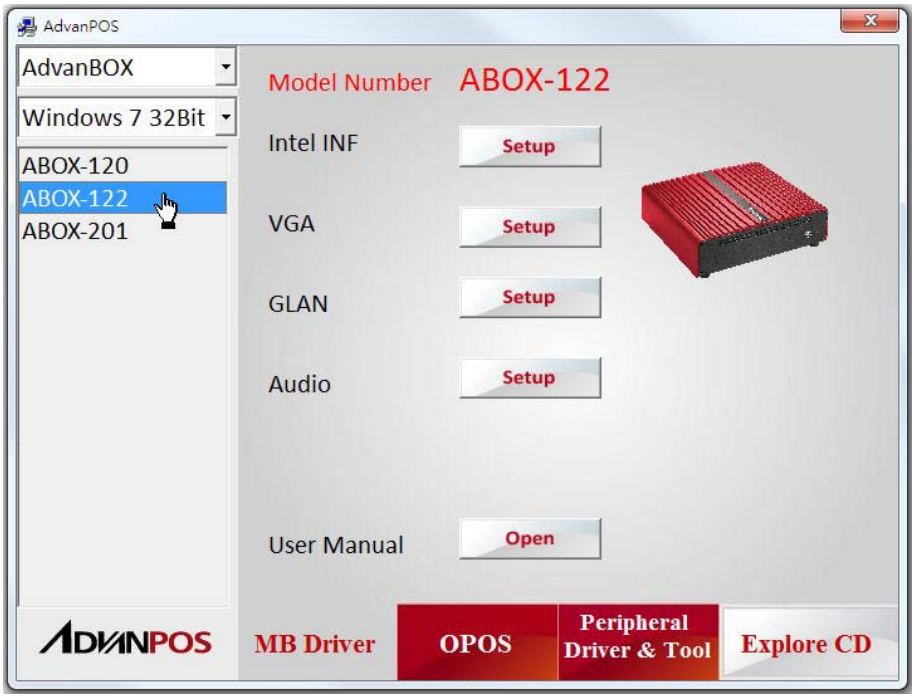
1. Insert sofeware CD into a system.

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

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

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

5. Select your POS model Number.

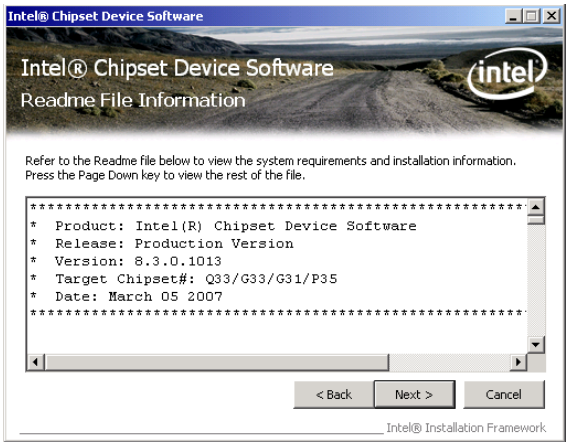


6. Select the peripheral driver that you want to install and then follow on-screen instructions to install your driver or refer to following procedures specifying how every driver is to be installed.

Intel Chipset Driver Installation

1. Click the Next button on the Welcome screen.

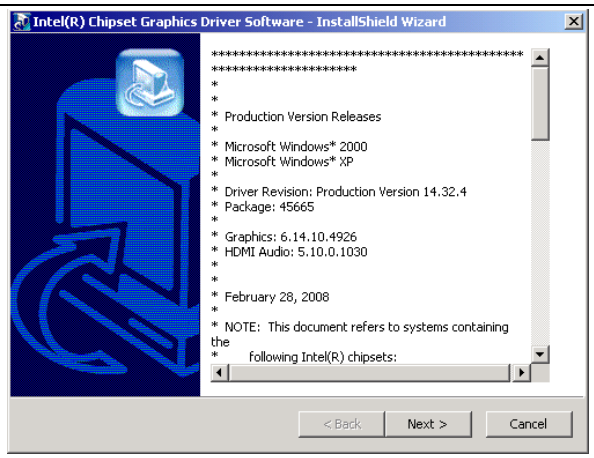
2. Click Yes on the License Agreement screen.



3. Click Next on the Information screen.

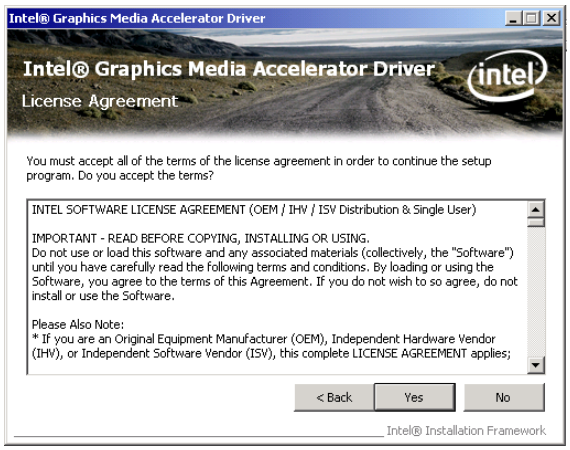
4. When installation is complete, click Finish.

Intel Graphics Driver Installation

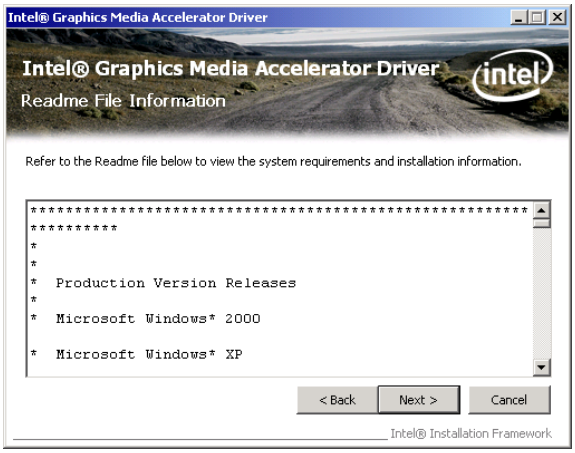


1. Click Next on the Starup screen.

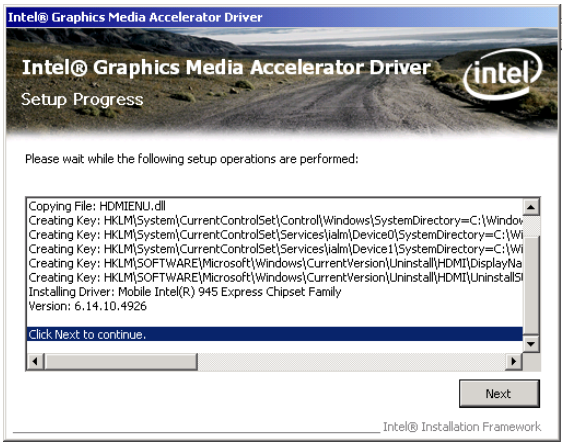
2. Click Next on the Welcome screen.



3. Click Yes on the License Agreement screen.



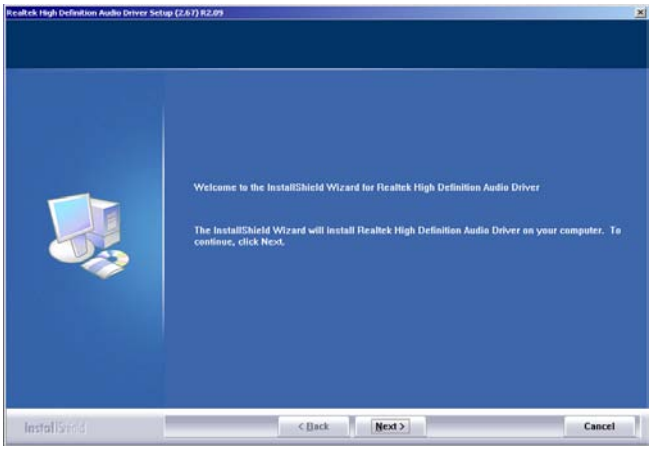
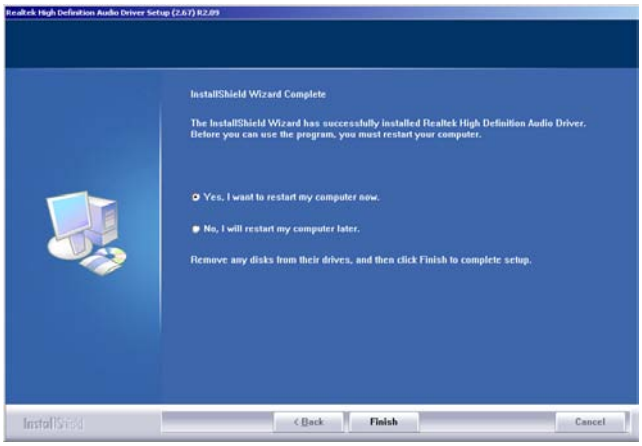
4. Click Next on the Information screen.



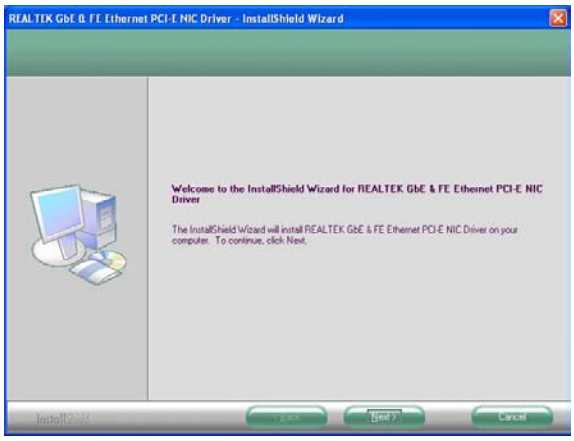
5. Click Next on the Setup Progress screen.

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

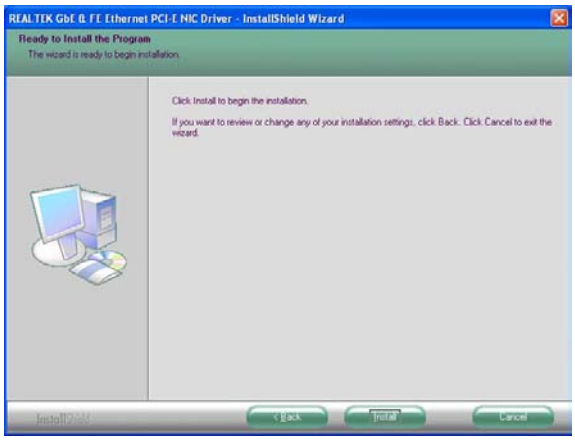
Audio Driver Installation

	
1. Click Next on the Welcome screen.	2. When installation is complete, click Finish to restart the system.

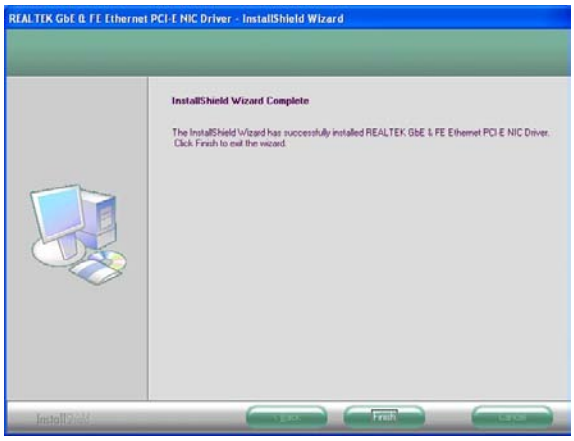
Ethernet Driver Installation for Windows XP



1. Click Next.

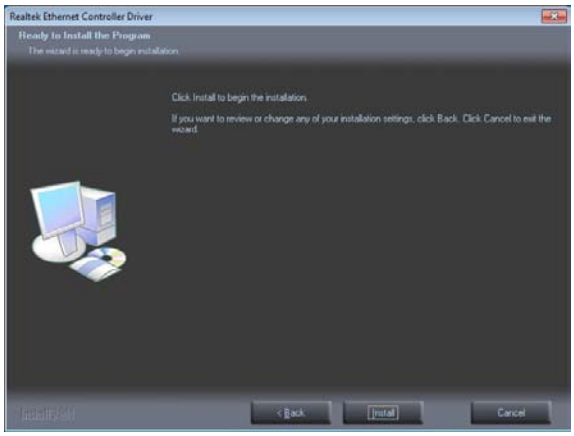


2. Click Install.

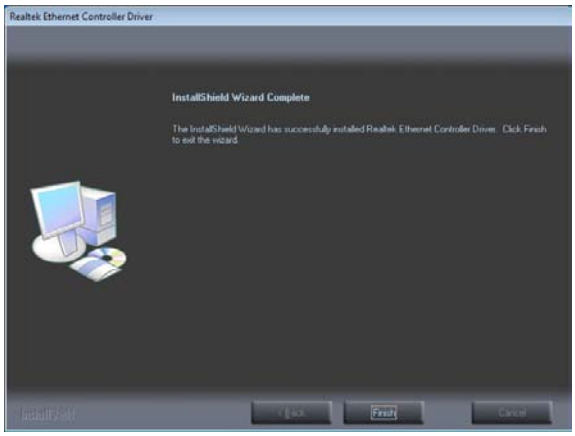


3. Click Finish.

Ethernet Driver Installation for Windows 7

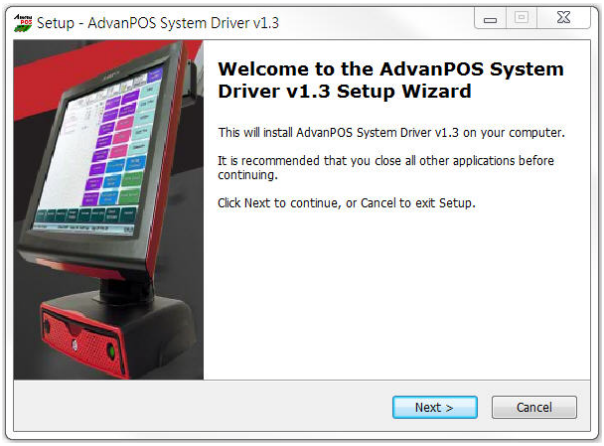


1. Click Install.



2. Click Finish.

AdvanPOS System Driver Installation (required for Cash Drawer)

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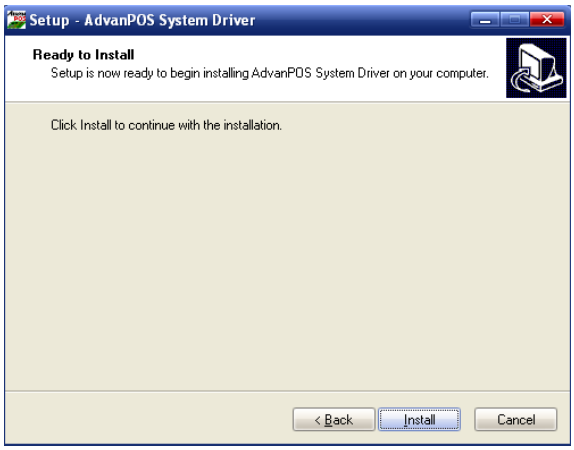
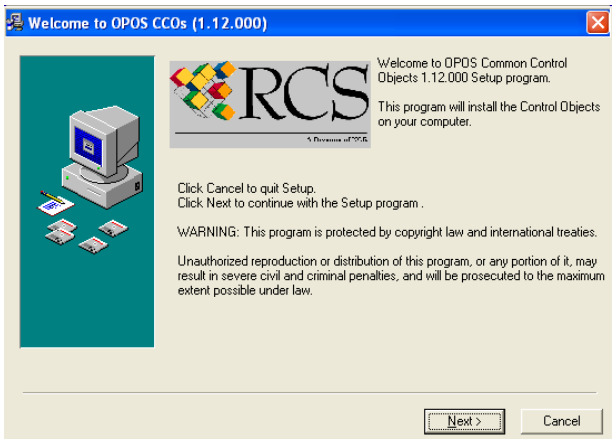
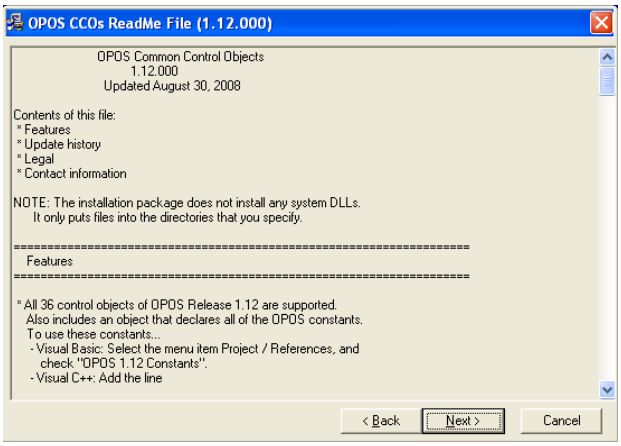
<td> 
</td>
</tr>
<tr>
<td>1. Click Next on the Welcome screen.</td>
<td>2. Click Install on the Ready to Install screen.</td>
</tr>
<tr>
<td> 
</td>
<td></td>
</tr>
<tr>
<td>3. Click Finish on the Completing installation screen. A system restart is required to complete the installation.</td>
<td></td>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

OPOS CCO Driver Installation

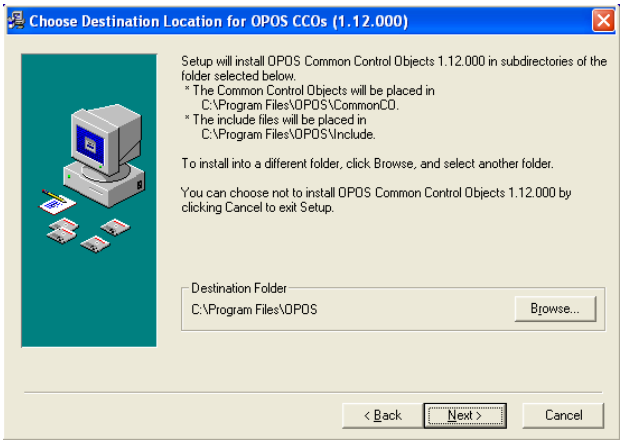
The OPOS driver for the ABOX-122 series supports the Cash Drawer, MSR, I-Button (KeyLock), RFID and VFD (Line- Display). Before installing the OPOS driver, please make sure the AdvanPOS System Driver has been installed.



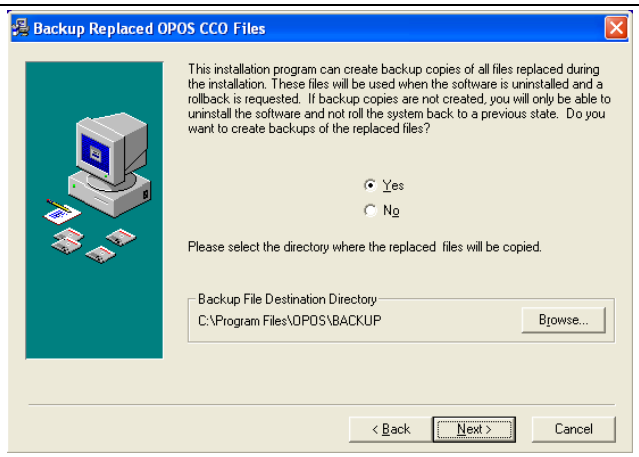
1. Click Next on the Welcome screen.



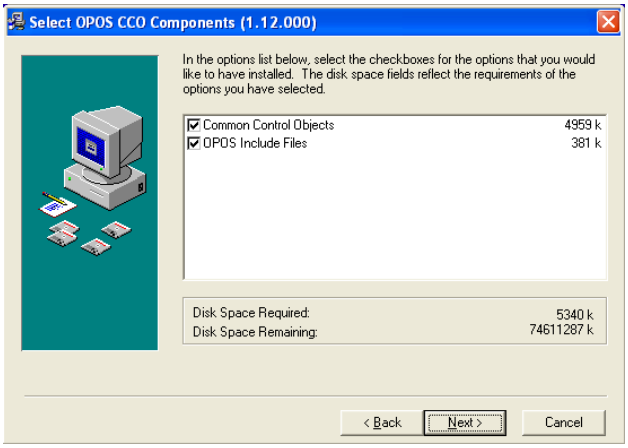
2. Click Next on the ReadMe screen.



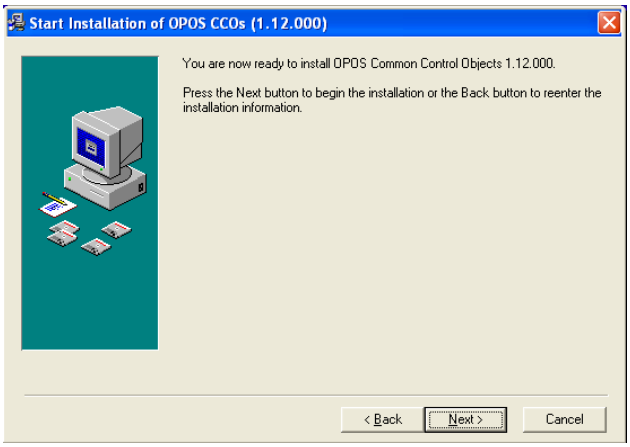
3. Select the Destination Location and click Next.



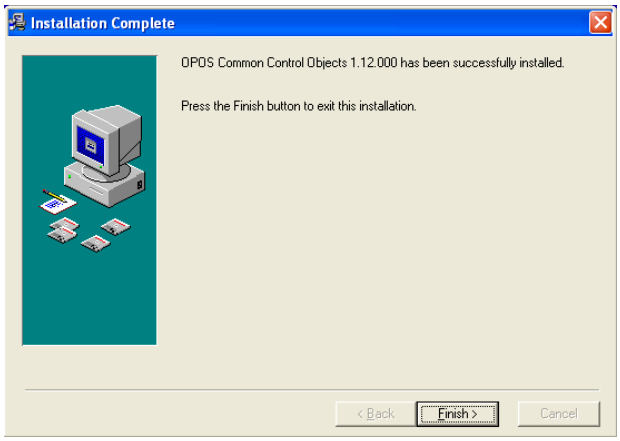
4. Click Yes to backup the CCO files and select backup file destination directory, then click Next.



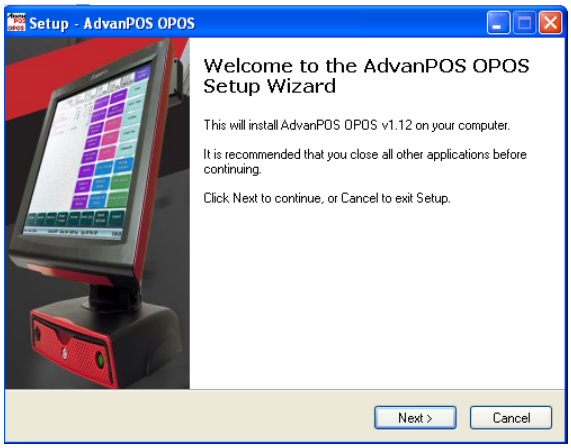
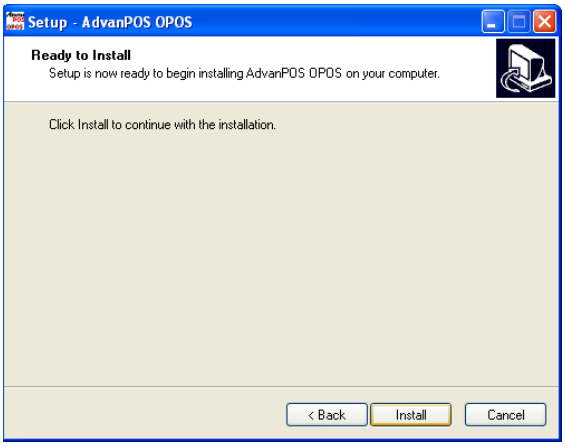
5. Select Common Control Objects and OPOS Include Files, then click Next.



6. Click Next on the Start Installation screen.

	
7. Click Finish on the Installation Complete screen.	

AdvanPOS OPOS Driver Installation

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

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

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

1. Open Cash Drawer

```
// IOCTL Codes
#define GPD_TYPE 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 VB.NET Cash Drawer Code for Windows

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

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

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

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

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

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

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

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

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

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

```
    If (iRet = 0 Or iBytesRtn <> 1) Then
        MsgBox("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
    End If
End Sub
Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer1.Tick
    Dim iBytesRtn As Integer
    Dim iRet As Integer, iStatus As Integer

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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