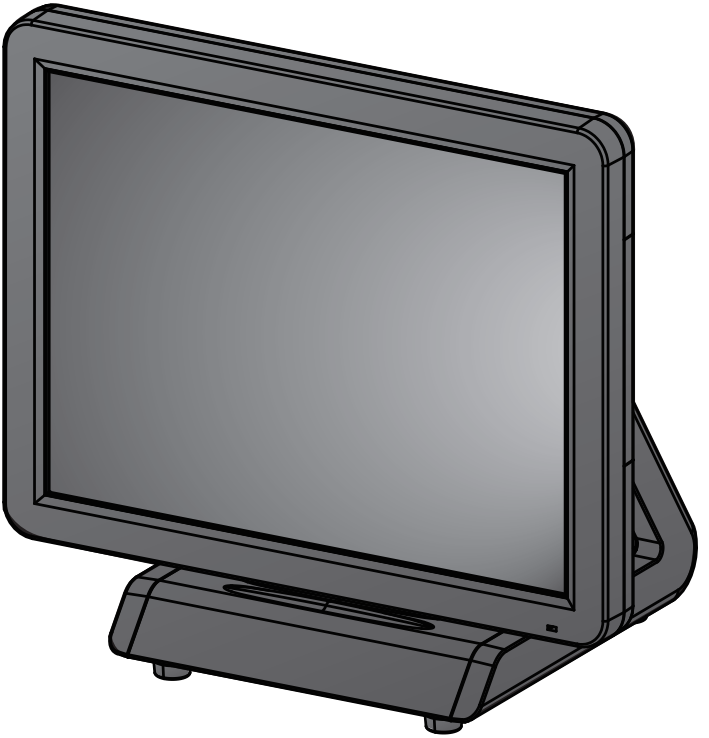
PARTNER

POS Terminal

SP-1030

Service Manual



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Trademark recognition

All product names used in this manual are the properties of their respective owners and are acknowledged.

About this manual

The service manual provides service information for the SP-1030. This manual is designed to help train service personnel to locate and fix failing parts on the machine.

This manual consists of the following sections:

Chapter 1 Getting Started:
This section covers unpacking and checking the package contents, and identifying components.

Chapter 2 BIOS Setup Utility:
The BIOS chapter provides information on navigating and changing settings in the BIOS Setup Utility.

Chapter 3 Installing Drivers and Software:
This chapter provides information for installing drivers.

Chapter 4 Locating the Problem:
Refer to this chapter to locate the failing part or cause of the problem that requires servicing.

Chapter 5 Replacing Field Replaceable Units (FRUs):
This chapter provides drawings and instructions to replace all FRUs.

Appendix: Optional Components, Exploded Diagram, and Parts List:
The appendix includes an exploded diagram of the machine and the parts list and order number for each part.

Safety information

Before servicing the machine, read the safety information under “Chapter 5 - Safety and precautions” .

Revision history

Version 1.0, November 2014

FCC Statement

This device 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 when the device is operated in a commercial environment. This device generates, uses and can radiate frequency energy and, if not installed and used in accordance with this manual, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

Best Management Practice (BMP) for Perchlorate Materials in California States

This device includes perchlorate in the lithium battery.

Perchlorate material-special handling may apply when handling this device.

For detail, refer to http://www.dtsc.ca.gov/hazardouswaste/perchlorate.

Vermont Mercury Management Rules

LCD display lamps contain mercury. Dispose of them properly.

CE Mark

This device complies with the requirements of the EEC directive 2004/108/EC with regard to "Electromagnetic compatibility" and 2006/95/EC with regard to "Low Voltage Directive".

Legislation and WEEE Symbol

2002/96/EC Waste Electrical and Electronic Equipment Directive on the treatment, collection, recycling and disposal of electric and electronic devices and their components.

The crossed-out wheeled bin symbol on the device means that it should not be disposed of with other waste at the end of its working life. Instead, the device should be delivered to a waste collection center for activation of the treatment, collection, recycling and disposal procedure.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this device from other types of waste and recycle it responsibly to promote the sustainable reuse of material resources.

Business users should contact their supplier and check the terms and conditions of the purchase contract regarding its disposal.

It should not be mixed with other commercial waste for disposal.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1
GETTING STARTED

This chapter describes the procedures from unpacking the SP-1030, to powering it on. The following topics are described.

Unpacking the machine

It is a good idea to save the packaging materials and shipping box in case that machine needs to be returned for service. Please un-pack and re-pack the machine terminal as shown in Figure 1.1.

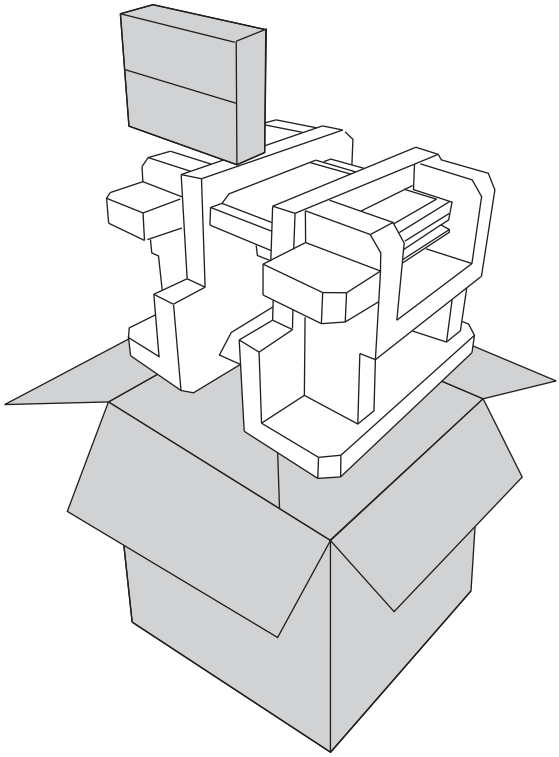


Figure 1.1 Unpacking the machine

Identifying components

This section describes the parts and connectors on the machine.

Front-right view

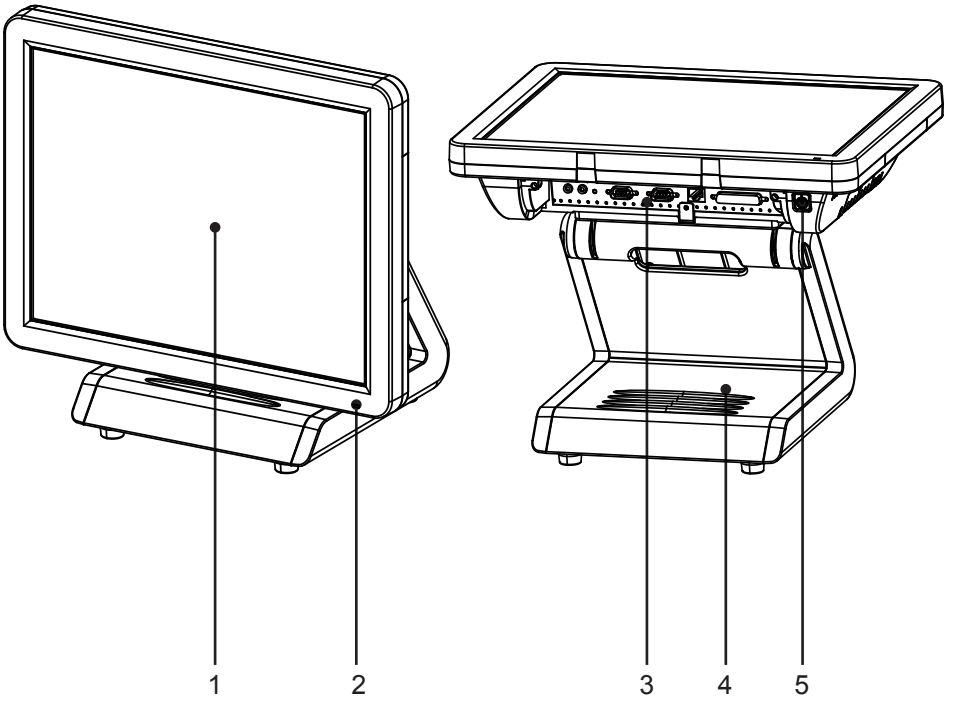


Figure 1.2 Front-right view

Component	Description
1	15-inch TFT LCD
2	LED Power Indicator
3	IO Panel
4	HDD Compartment
5	Power Button

Rear view

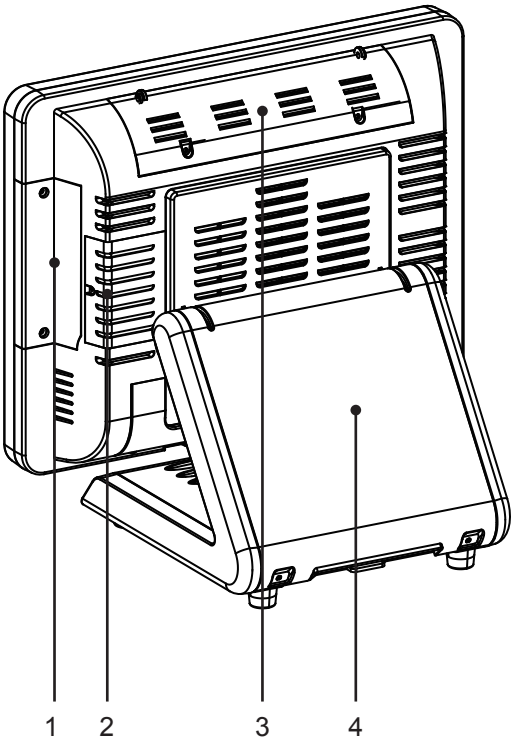


Figure 1.3 Rear view

Component	Description
1	MSR (optional) Slot
2	HDD Compartment (for wall mounting)
3	VFD Customer Display (optional) Slot
4	Cable Compartment

I/O connectors

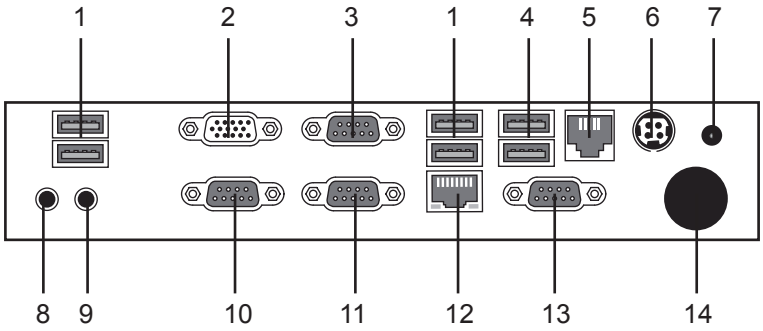


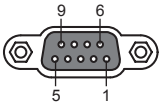
Figure 1.4 SP-1030 I/O connectors

Connector	Description
1	USB 2.0 ports
2	VGA port
3	COM 1 port
4	USB 3.0 ports
5	RJ-11 cash drawer port
6	DC 12V input connector
7	DC 12V output connector (for PM-116)
8	Microphone jack
9	Audio output jack
10	COM 3 port
11	COM 2 port
12	LAN jack
13	COM 4 port
14	Cable hole

Connector pin define

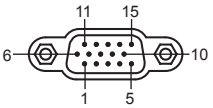
This section describes the connectors pin define.

COM connector pin define



Pin	Signal	Pin	Signal
1	DCD	6	DSR
2	SIN	7	RTS
3	SOUT	8	CTS
4	DTR	9	RI
5	GND		

VGA connector pin define

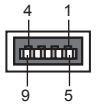


Pin	Signal	Pin	Signal	Pin	Signal
1	Red	6	AGND	11	N/A
2	Green	7	AGND	12	DDC DAT
3	Blue	8	AGND	13	Horizontal Sync
4	N/A	9	N/A	14	Vertical Sync
5	GND	10	GND	15	DDC CLK

USB 2.0 connector pin define

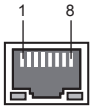
Pin	Signal
1	USB Vcc
2	USB -
3	USB +
4	USB GND

USB 3.0 connector pin define



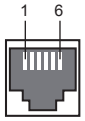
Pin	Signal	Pin	Signal
1	USB Vcc	6	StdA_SSTX-
2	USB -	7	GND_DRAIN
3	USB +	8	StdA_SSRX+
4	USB GND	9	StdA_SSRX-
5	StdA_SSTX+		

LAN connector pin define



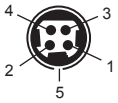
Pin	Signal	Pin	Signal
1	TXA+	5	TXC-
2	TXA-	6	TXB-
3	TXB+	7	TXD+
4	TXC+	8	TXD-

RJ-11 Cash Drawer connector pin define



Pin	Signal
1	CASEOPEN2
2	CASH1
3	CASEOPEN1
4	24V
5	CASH2
6	GND

DC 12V input connector pin define

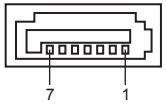


Pin	Signal
1	V+
2	V+
3	GND
4	GND
5	GND

DC 12V output connector pin define

Pin	Signal
1	+12V
2	GND

SATA connector pin define



Pin	Signal	Pin	Signal
1	GND	5	SATA_RX-
2	SATA_TX+	6	SATA_RX+
3	SATA_TX-	7	GND
4	GND		

CHAPTER 2
BIOS SETUP

The primary function of the BIOS (Basic Input and Output System) is to identify and initiate component hardware. The BIOS parameters are stored in non-volatile BIOS memory (CMOS). CMOS contents don't get erased when the computer is turned off. The following topics are described in this chapter.

About the Setup Utility

The BIOS Setup Utility enables you to configure the following items:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

This Setup Utility should be used for the following:

- When changing the system configuration
- When a configuration error is detected and you are prompted to make changes to the Setup Utility
- When trying to resolve IRQ conflicts
- When making changes to the Power Management configuration
- When changing the User or Supervisor password

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to run Setup

Press the delete key <Delete> to access the BIOS Setup Utility:

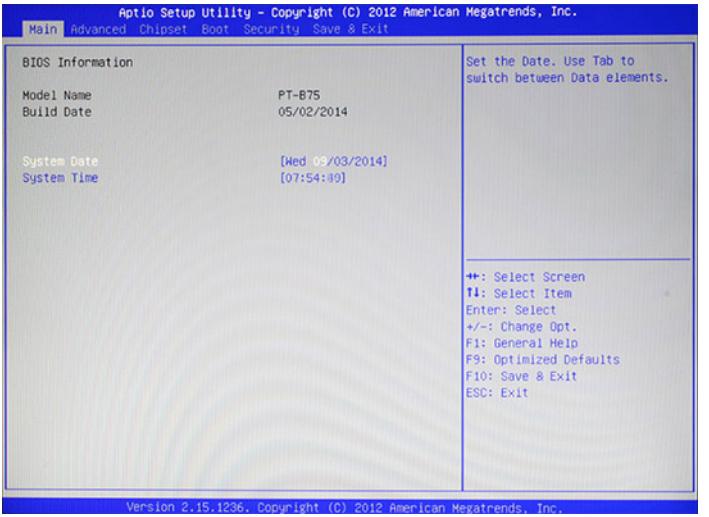


Figure 2.1 Main BIOS screen

BIOS navigation keys

The BIOS navigation keys are listed below.

Key	Function
← →	Moves between the available menus
↑ ↓	Moves the cursor between the displayed parameters
+ –	Modifies the selected field's values
Enter	Go to sub screen
F1	Displays a general help screen
F9	Loads the default configurations
F10	Saves the current configuration and exits Setup
Esc	Exits the current screen

Using BIOS

When you start the Setup Utility, the main screen appears. The main screen of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to sub screens that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the sub screen.

Main Screen

This screen includes System BIOS Information, Processor, System memory and displays the System Time and System Date.

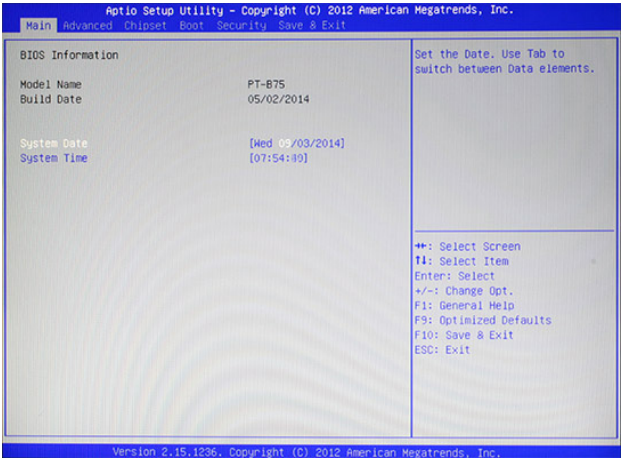


Figure 2.2 Main Screen

System Overview

This screen displays System BIOS Information, Processor, System memory, System Time and System Date.

System Time/ System Date

The System Time and System Date items show the current date and time held by the machine.

To set the time and date use the Tab key to move from field to field. Simply type the new number required.

If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Time and Date Properties utility.

Advanced Settings

This setup screen includes sub-menus for APCI Configuration, CPU Configuration, SATA Configuration, USB Configurations, Super IO Configurations and Hardware Health Configuration.

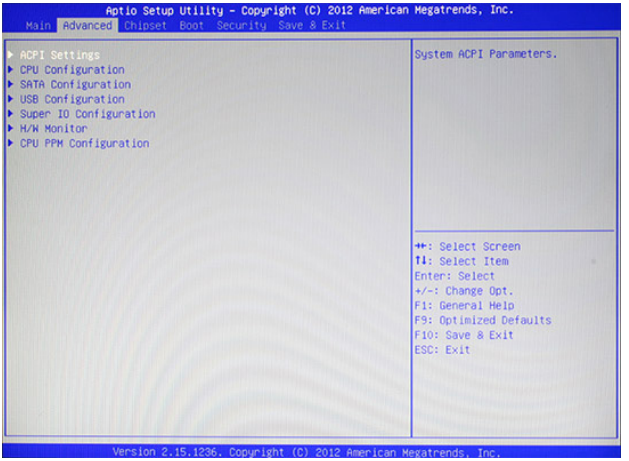


Figure 2.3 Advanced Settings Screen

ACPI Settings

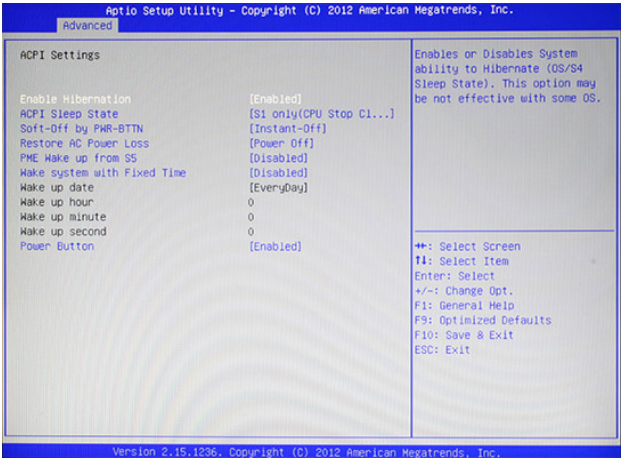


Figure 2.4 ACPI Settings sub-menu

Enable Hibernation
This item allows user to enable or disable the hibernation feature for OS. This option may be not effective with some OS.

ACPI Sleep State
Use this item to define how the system suspends. In the default, S1 only (CPU Stop Clock), the suspend mode is equivalent to a software power down. If you select S3 only (Suspend To RAM), the suspend mode is a suspend to RAM - the system shuts down with the exception of a refresh current to the system memory.

Soft-Off by PWR-BTTN
Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause a software power down.

Restore AC Power Loss
This item sets the system status after restore on AC power loss.

PME Wake up from S5
This feature allows the system wakeup on PME (Power Management Event).

Wake system with Fixed Time
This function is for setting the Date and Time for your computer to boot up. When enabled, more options will appear for you to specific the Date and Time.

Power Button
When disabled, the power button can’t turn the system power off. When enabled, the power button can be used to turn off the system.

CPU Configuration

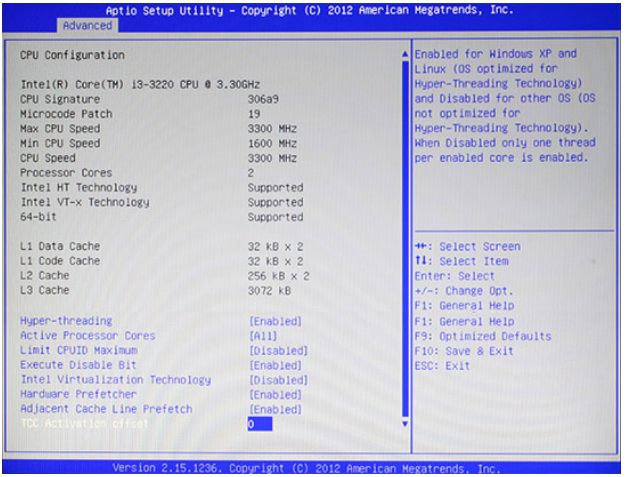


Figure 2.5 CPU Configuration sub-menu

Hyper-threading
This item enables or disables for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When setting this item "Disabled" only one thread per enabled core is enabled.

Active Processor Cores
This feature allows you to increase or decrease the number of active processor cores.

Limit CPUID Maximum
When enabled, the processor will limit the maximum CPUID input value to 03h when queried, even if the processor supports a higher CPUID input value. When disabled, the processor will return the actual maximum CPUID input value of the processor when queried.

Execute-Disable Bit
This feature is used to protect certain system memory data regions from insertion and execution of potentially harmful code.

Intel Virtualization Technology
This feature allows you to enable or disable Intel Virtualization Technology support that allow multiple OS to run simultaneously on the same system.

Hardware Prefetcher
When enabled, the processor will automatically analyzes and prefetch data and code.

Adjacent Cache Line Prefetch
When enabled, the processor will retrieve the current requested cache line, as well as the subsequent cache line. When disabled, the processor will only retrieve the currently requested cache line.

TCC Activation offset
This item is used to set the TCC activation temperature.

SATA Configuration

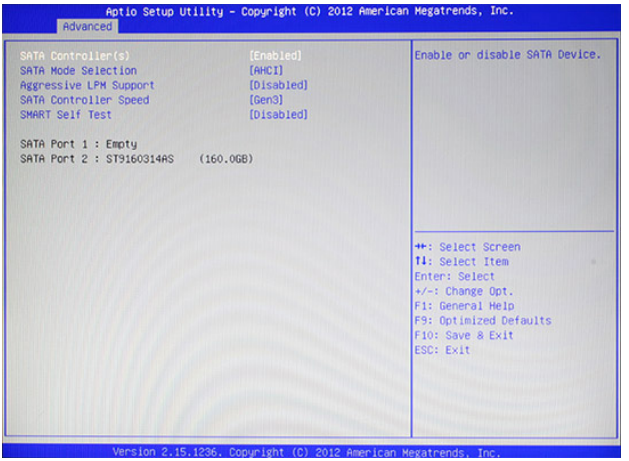


Figure 2.6 SATA Configuration sub-menu

SATA Controller(s)
Use this item to enable or disable the on-chip SATA controller. The default setting is Enabled.

SATA Mode Selection
This item is used to configure SATA mode. The default setting is IDE.

Aggressive LPM Support
This item is used to enable aggressive LPM (link power management) support. The default setting is Disabled.

SATA Controller Speed
This item is used to configure SATA controller speed.

SMART Self Test
This item is used to enable monitoring of hard disks that support the S.M.A.R.T. (Self-Monitoring And Reporting Technology) feature, which can allow the hard disk to report, under some circumstances, impending failures of the hard disk.

USB Configuration

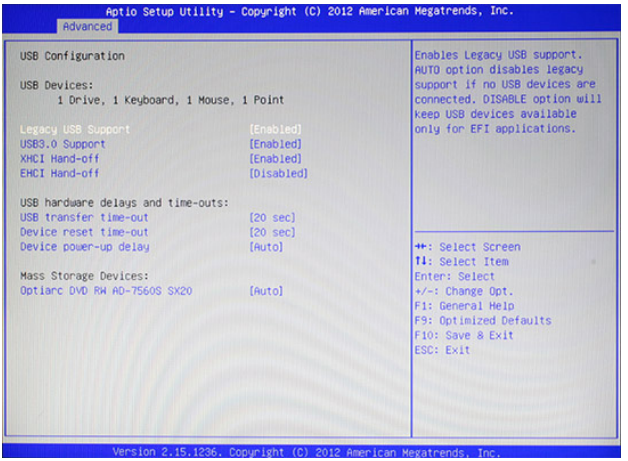


Figure 2.7 USB Configuration sub-menu

Legacy USB Support
When enabled, the BIOS will enable legacy support for USB keyboards, mice and floppy drives. You will be able to use these USB devices even with operating systems that do not support USB.

USB3.0 Support
This item enables or disables USB3.0 (XHCI) controller support.

EHCI Hand-Off
This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

EHCI Hand-Off
This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

USB transfer time-out
This item allows you to specific the USB transfer timeout value for control, bulk, and interrupt transfers.

Device reset time-out
This item allows you to specific the timeout periods for USB device initialization and the Start Unit command to enable mass storage access operations.

Device power-up delay
This item allows you to select the time for devices report themselves to the Host Controller, including through USB hubs. When set to Auto, root port devices will be given 100 ms, while devices connected to hubs will be given time as specified in the Hub descriptor When this parameter is set to Manual, a delay from 1 to 40 seconds can be selected.

Super IO Configuration

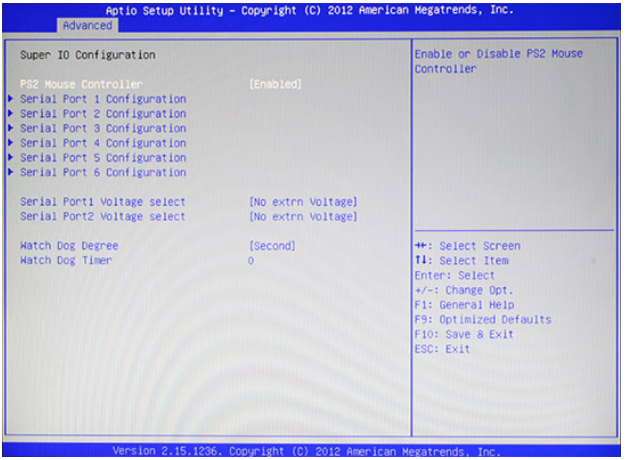


Figure 2.8 Super IO Configuration sub-menu

PS2 Mouse Controller
This item enables or disables PS2 Port.

Serial Port x Voltage select
This item allows you to set voltage for a serial port.

Watch Dog Degree
This item allows you to determine the functional degree of Watch Dog.

Watch Dog Timer
When select any time period, the Watchdog Timer will be enabled after that time period passes, every time the system boots up. It will monitor the time taken for each task performed by the operating system. Any timeout will cause it to reboot the computer.

Serial Port x Configuration

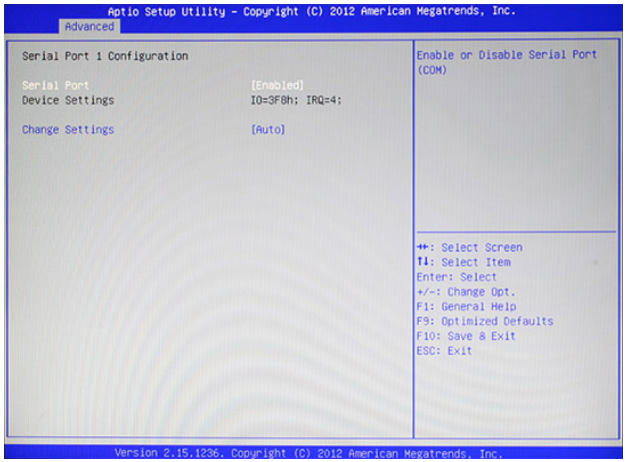


Figure 2.9 Serial Port x Configuration sub-menu

Serial Port x

This item allows you to enables or disables a serial port.

Change Settings

This item allows you to specific IO address and IRQ for the serial port.

H/W Monitor

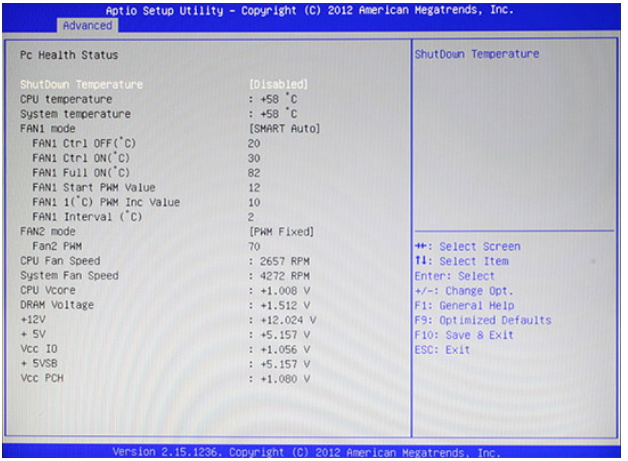


Figure 2.10 Hardware Monitor sub-menu

ShutDown Temperature

This item allows setting the shutdown temperature. Once enabled, the machine will automatically shutdown when the temperature reaches the limit specified.

CPU PPM Configuration

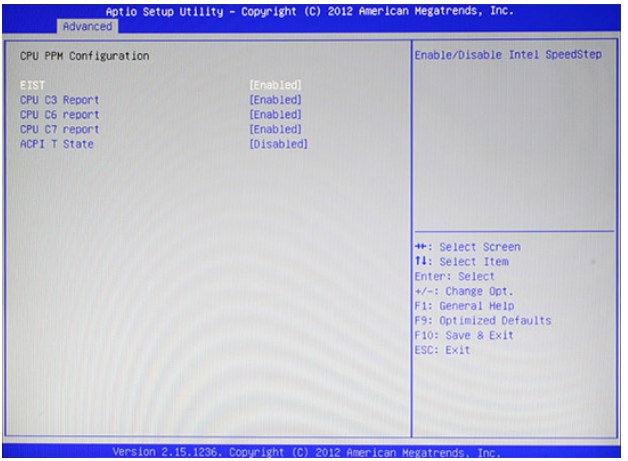


Figure 2.11 CPU PPM Configuration sub-menu

EIST
This item allow you to enable or disable EIST (Enhanced Intel Speedstep Technology). When enabled, CPU will reduce power consumption.

CPU C3 Report
This item is used to enable or disable CPU C3 report to OS.

CPU C6 Report
This item is used to enable or disable CPU C6 report to OS.

CPU C7 Report
This item is used to enable or disable CPU C7 report to OS.

ACPI T State
This item is used to enable or disable Processor Throttling States.

Chipset Settings

This screen allow you to configure the chipset options.

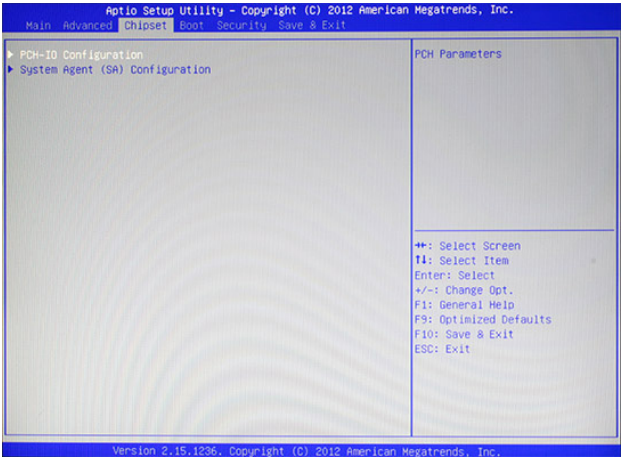


Figure 2.12 Chipset Settings Screen

System Agent (SA) Configuration

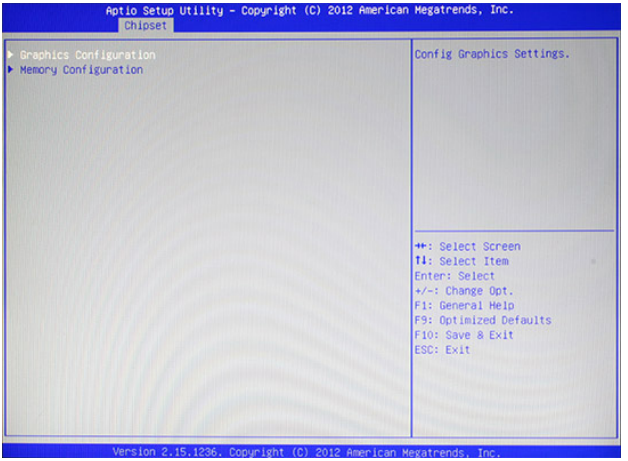


Figure 2.13 System Agent (SA) Configuration sub-menu

PCH IO Configuration

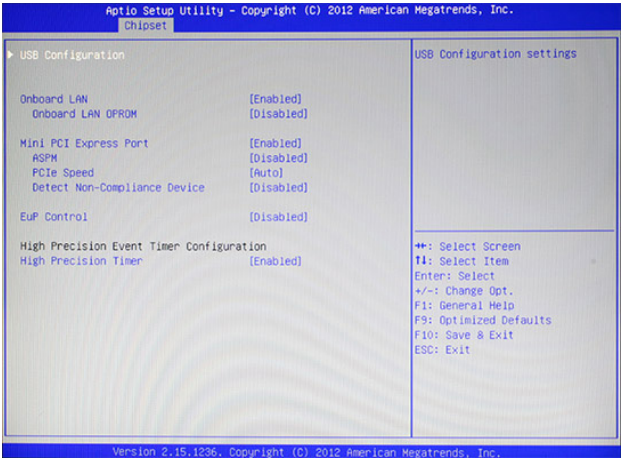


Figure 2.14 PCH IO Configuration sub-menu

Onboard LAN
Use this item to enable or disable the onboard LAN controller. The default setting is Enabled.

Onboard LAN OPROM
This feature allows you to enable or disable the onboard LAN boot ROM to boot system.

Mini PCI Express Port
This item allows you to enable or disable the Mini PCI Express device.

ASPM
This item is used to select the level of PCI Express Active State Power Management.

PCIe Speed
This item is used to select Gen1 or Gen2 speed for PCIe.

Detect Non-Compliance Device
When enabled, system will detect non-compliance PCIe device, and take longer at POST time.

EuP Control
When enabled, the system will meet EuP requirement.

High Precision Timer
This item allows you to enable or disable the High Precision Timer feature.

USB Configuration

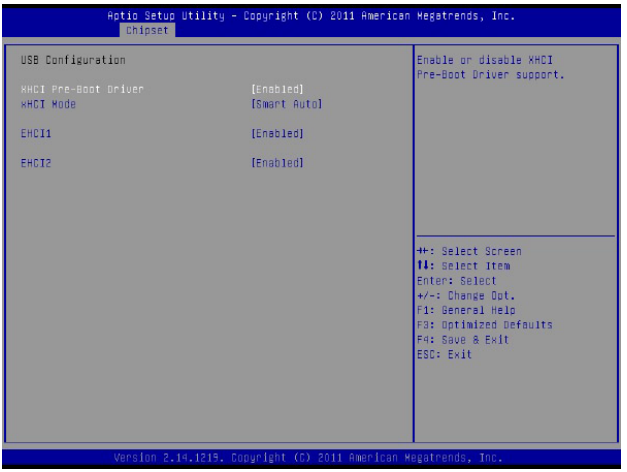


Figure 2.15 USB Configuration sub-menu

XHCI Pre-Boot Driver
This item enables or disables XHCI Pre-Boot Driver support.

XHCI Mode
This item sets the mode of operation of XHCI controller.

EHCI1, EHCI2
These item allow you to enable or disable USB 2.0 support.

Graphics Configuration

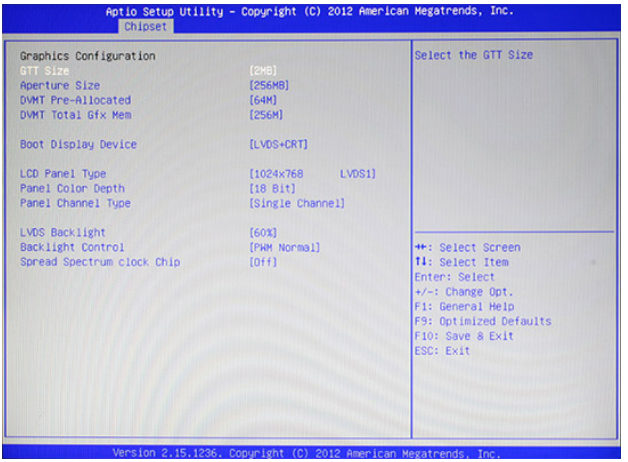


Figure 2.16 Graphics Configuration sub-menu

GTT Size
This field allows you to select how much system memory can be allocated to GTT.

Aperture Size
This field allows you to select how much system memory can be allocated to graphics chip for video purposes. The aperture is a portion of the memory address range dedicated to graphics memory address space. Host cycles that hit the aperture range are forwarded to the graphics chip without any translation.

DVMT Pre-Allocated
This item allows you to adjust system memory that can be pre-allocated as graphics memory.

DVMT Total Gfx Mem
This item allows you to set the maximum amount of system memory that can be allocated as graphics memory.

Boot Display Device
This option allows you to set the video device will enable during the POST.

LCD Panel Type
This item allows you to select the LCD panel type.

Panel Color Depth
This item allows you to select the color depth of the LCD panel.

Panel Channel Type
This item allows you to select the LFP panel channel type.

LVDS Backlight
This feature allows you to adjust the backlight of the LCD monitor.

Backlight Control
This feature allows you to select the backlight control interface.

Spread Spectrum clock Chip

When the motherboard clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problem, leave the setting at Off for optimal system stability and performance.

Memory Configuration

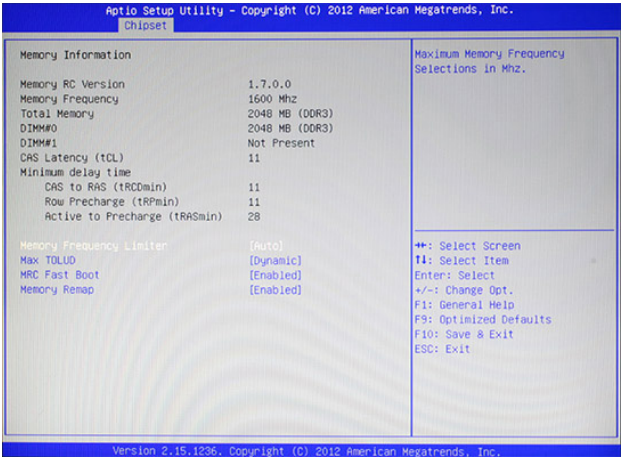


Figure 2.17 Memory Configuration sub-menu

Memory Frequency Limiter
This item allows you to set the maximum frequency of system memory.

Max TOLUD
This field allows you to select the maximum value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.

MRC Fast Boot
MRC Fast Boot can speed up system cold booting. This item allows you to enable or disable it.

Memory Remap
This item allows you to enable or disable Memory Remap feature.

Security Settings

This screen allows you to configure the system security settings.

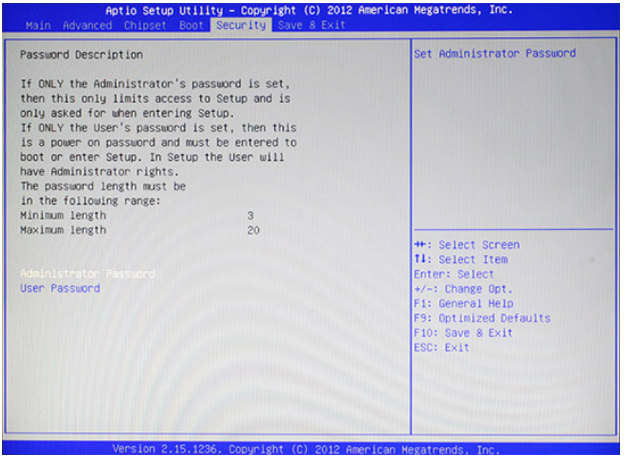
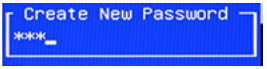


Figure 2.18 Security Settings Screen

Create or Change Adminitrator/ User Password

An administrator password takes precedence over a user password, and the administrator can limit the activities of a user. To create or change a password, follow these steps:

1. Highlight the item Administrator/ User Password on the Security menu and press <Enter>.
2. The password dialog box appears.



3. If you are creating a new password, type in the password. You can type alphanumeric characters. Symbols are ignored. The Administrator/ User Password item differentiates between upper and lower case characters. Press <Enter> after you have typed in the password. To confirm the password, type the password again and press <Enter>.
4. Write the passwords down and keep them in a safe place.

Clear Adminitrator/ User Password

To clear the password, leave the dialog box blank, press <Enter>, when the confirm box appears, press <Enter> again.

Boot Settings

This screen allow you to configure the boot options.

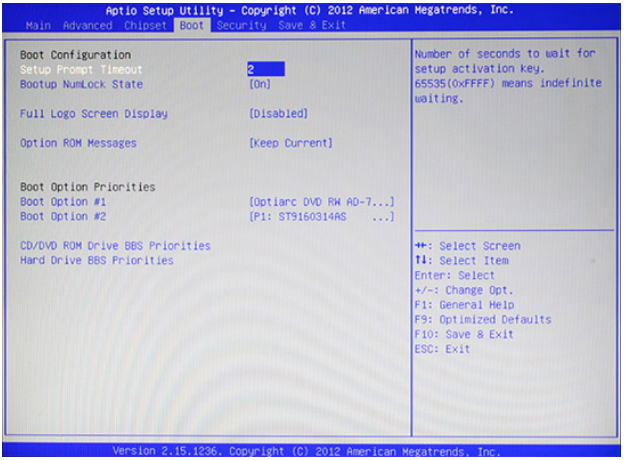


Figure 2.19 Boot Settings Screen

Setup Prompt Timeout

This item allows you to select the number of seconds to wait for setup activation key.

Bootup Numlock State

This item is used to select the Power-on state for Numlock.

Full Logo Screen display

This item enables you to show the full screen logo on the bootup screen.

Option ROM Messages

This item allows you to set the display mode for option ROM.

Save & Exit

This screen allows you to load default setting values, save changes and discard changes.

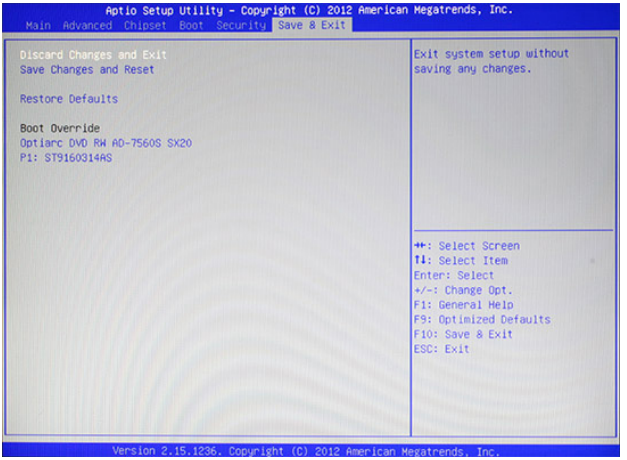


Figure 2.20 Save & Exit Screen

Discard Changes and Exit

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit. When the dialog box appears, press <Yes> to discard changes and reset, or press <No> to return to the menu.

NOTE

If you have made settings that you do not want to save, use the "Discard and Reset" item and press Yes to discard any changes you have made.

Save Changes and Reset

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and restart the system. When the dialog box appears, press <Yes> to save and exit, or press <No> to return to the menu.

Restore Defaults

This option opens a dialog box that lets you load optimized defaults for all appropriate items in the Setup Utility. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. If you only want to load setup defaults for a specific option, select and display that option, and then press <F9>.

Follow these instructions to load the optimized defaults:

1. From the Save & Exit screen, scroll to Restore Defaults.
2. Press <Enter> to open the Load Optimized Defaults screen.
3. Select <Yes>.
4. Press <Enter> to load the defaults.

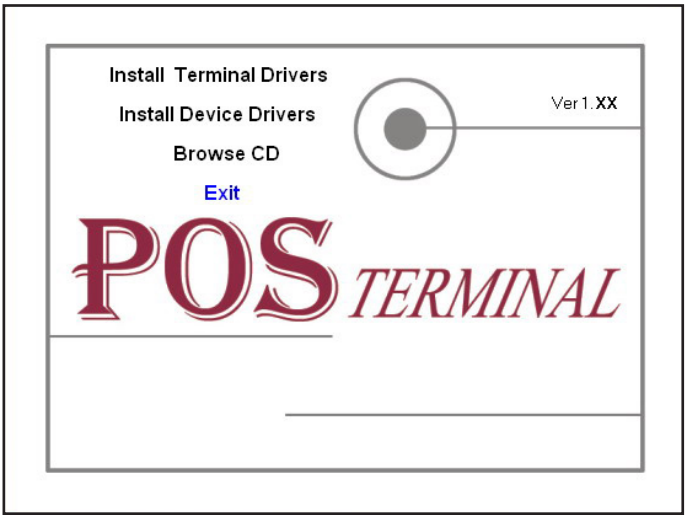
CHAPTER 3
INSTALLING DRIVERS AND SOFTWARE

This section explains how to install the drivers for the SP-1030.

The following topics are described.

Driver auto installation

Use an external CD-ROM drive to install the drivers or copy the drivers to a USB flash drive and then plug to the machine. When you insert the CD ROM the following screen appears.



Check SP-1030 that is listed under the “Install Terminal Drivers” and “Install Device Drivers” menus.

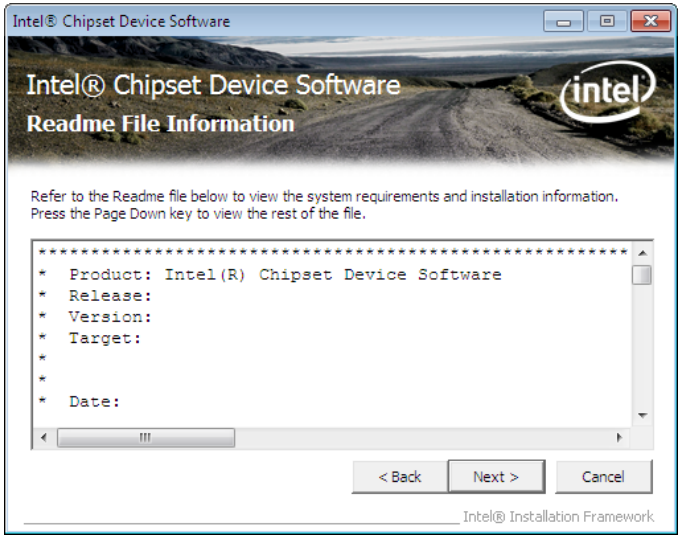
Intel Chipset Driver

The Intel Chipset Device Software updates the Windows XP/7 INF files so that the Intel chipset is correctly configured. Follow these instructions to install the chipset software :

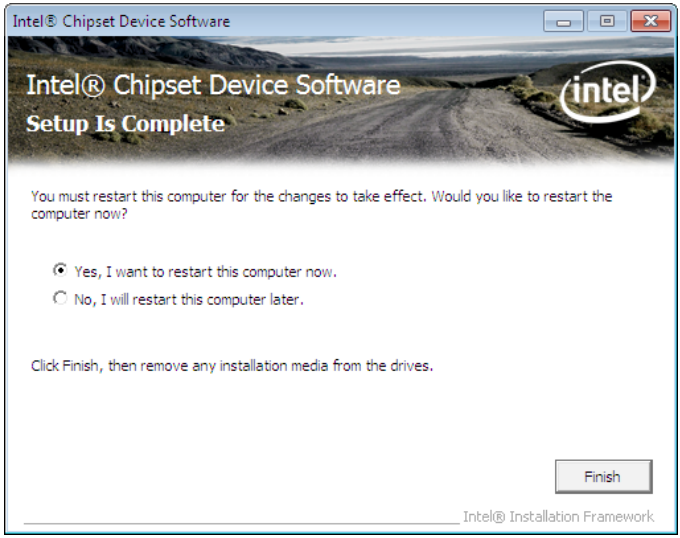
1. Browse to the \DRIVER\chipset\Intel\Inf folder.
2. Double-click setup.exe. The following screen appears. Click **Next** to continue.

3. Read the license agreement, then click **Yes**.

4. Browse the ReadMe Information, then click **Next**.



5. The Intel Chipset Software Utility files are installed to the system. When prompted to restart, select **Yes, I want to restart my computer now.** Then click **Finish** to restart the system.



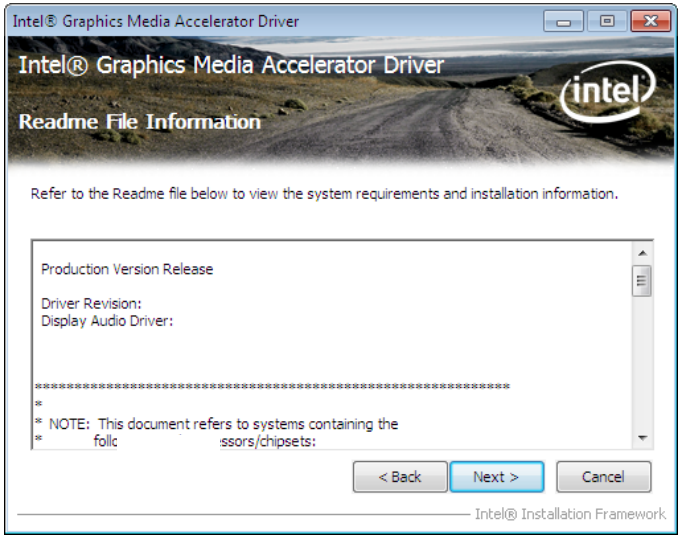
Intel Chipset Graphics Driver

This utility installs the Intel Extreme Graphics 2 drivers for Windows XP/2000. To install the drivers.

1. Browse to the \DRIVER\VGA\intel\ folder.
2. Double-click the executable file. The following screen appears. Click **Next** to continue.

3. Read the license agreement, then click **Yes**.

4. Browse the ReadMe Information, then click **Next**.

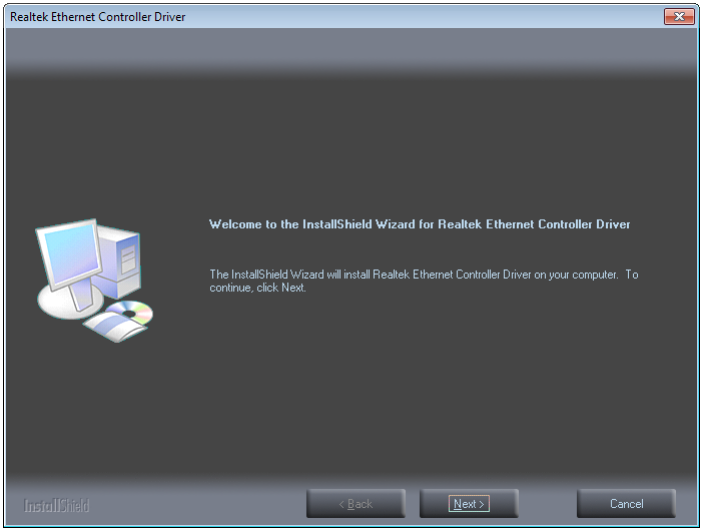


5. When installation is completed, select **Yes, I want to restart my computer now.** Then click **Finish** to restart the system.

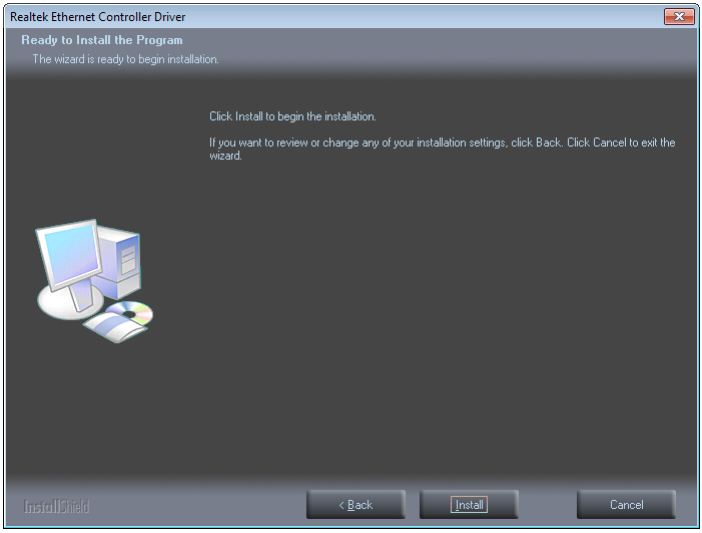
LAN Driver

The network driver support Windows XP/2000. Refer to the following to install the drivers.

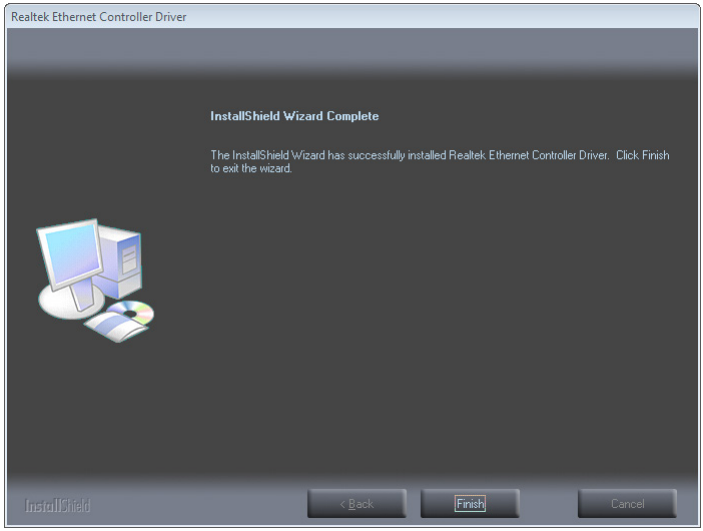
1. Browse to the \DRIVER\LAN\RealTek folder.
2. Double-click the executable file. The following screen appears. Click **Next** to continue.



3. Click **Install** to begin installation.



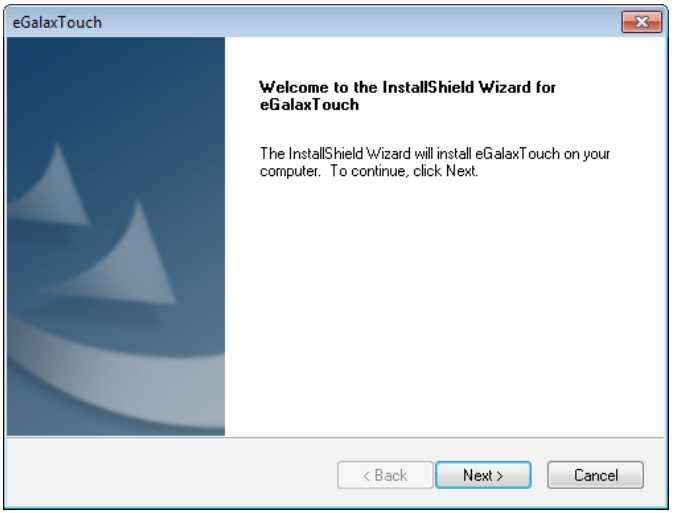
4. When installation is completed, click **Finish**.



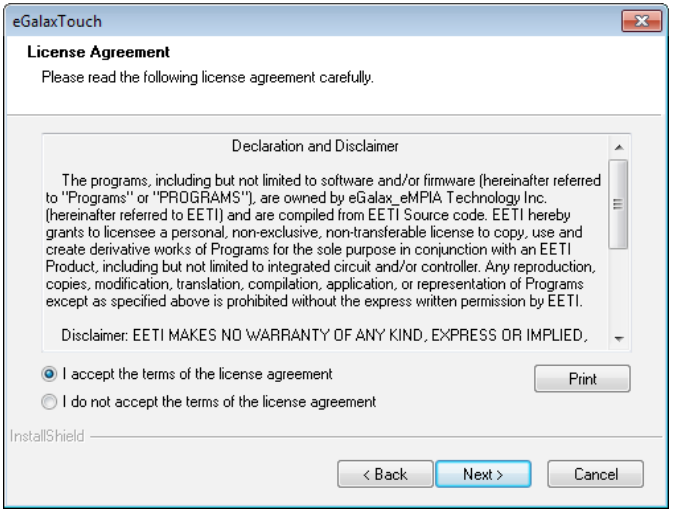
Touch Screen Driver

Refer to the following to install the touch screen driver.

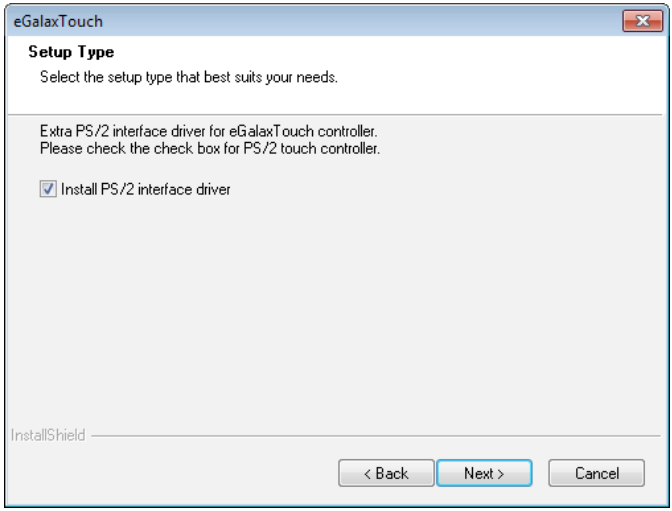
1. Browse to the \DRIVER\Touch\eGalax folder.
2. Double-click setup.exe. The following screen appears. Click **Next** to continue.



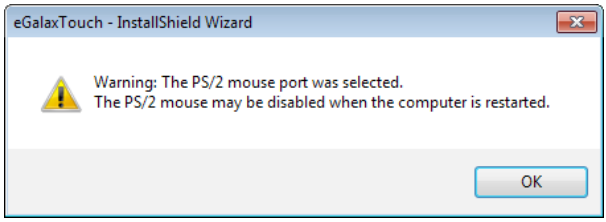
3. Read the license agreement, check "**I accept the term of the license agreement**". Click **Next** to continue.



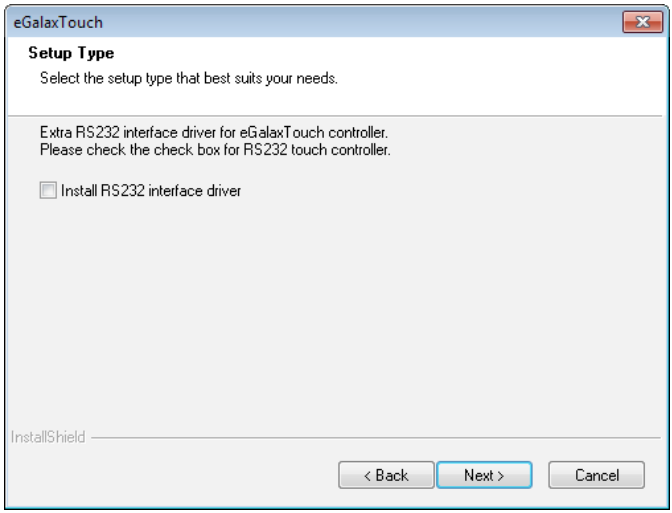
4. Check the box for **Install PS/2 interface drive** and then click **Next** to continue.



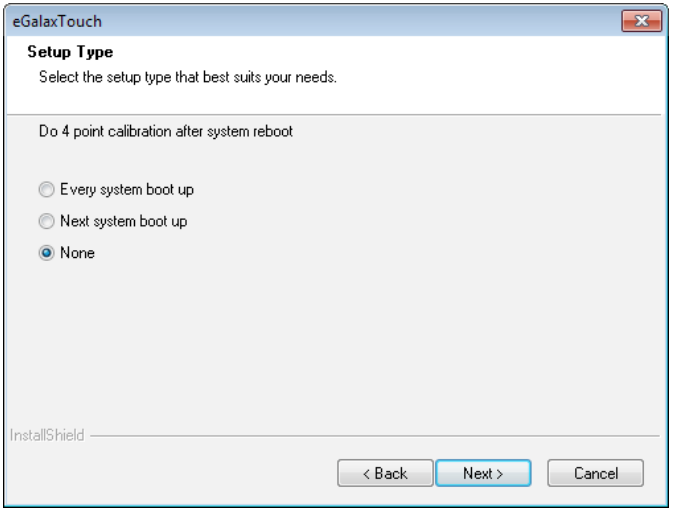
5. System will give you a warning, click **OK** to continue.



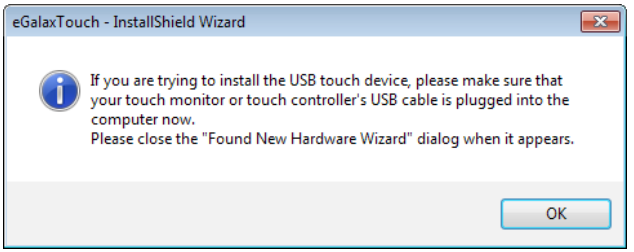
6. Uncheck the box for **Install RS232 interface drive** and then click **Next** to continue.



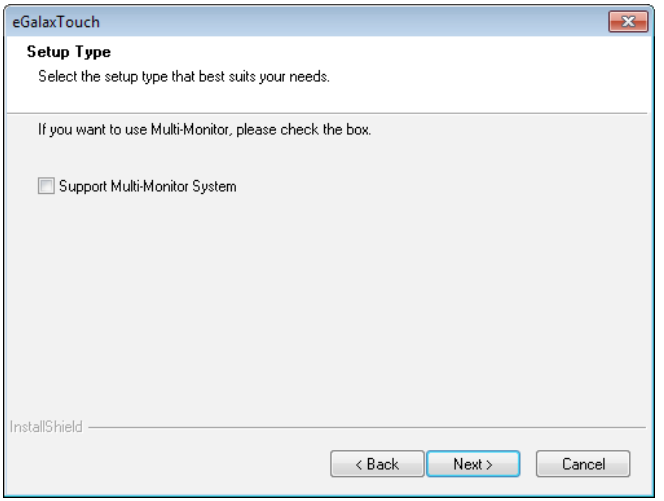
7. Check the box for **None** and then click **Next** to continue.



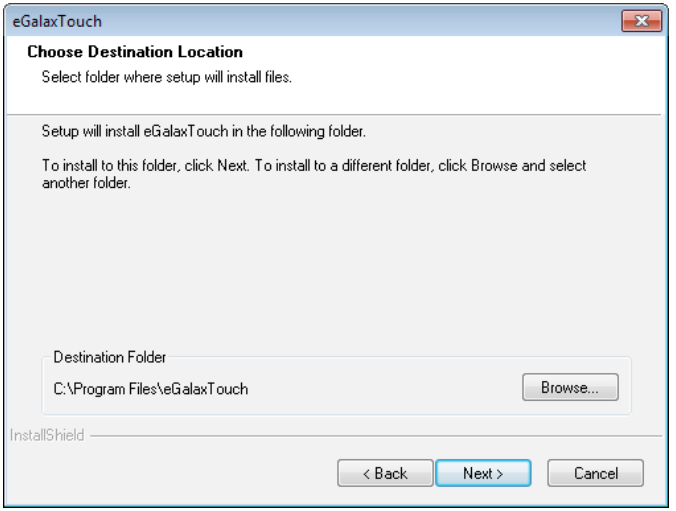
8. System will give you a warning, click **OK** to continue.



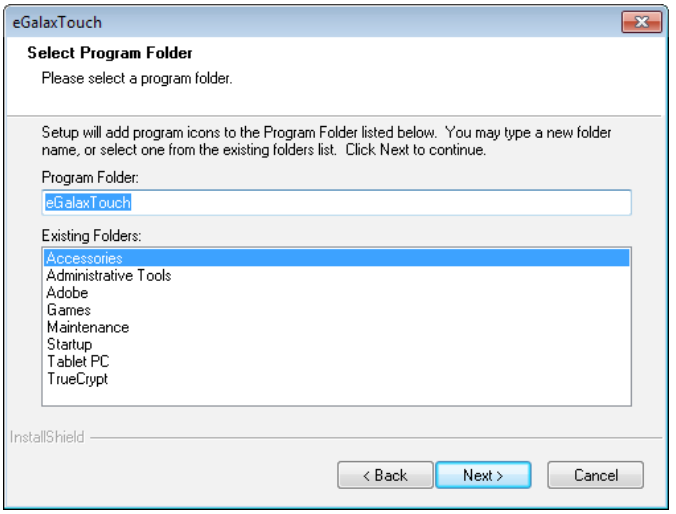
9. Uncheck the box for **Support Mulit-Monitor System** and then click **Next** to continue.



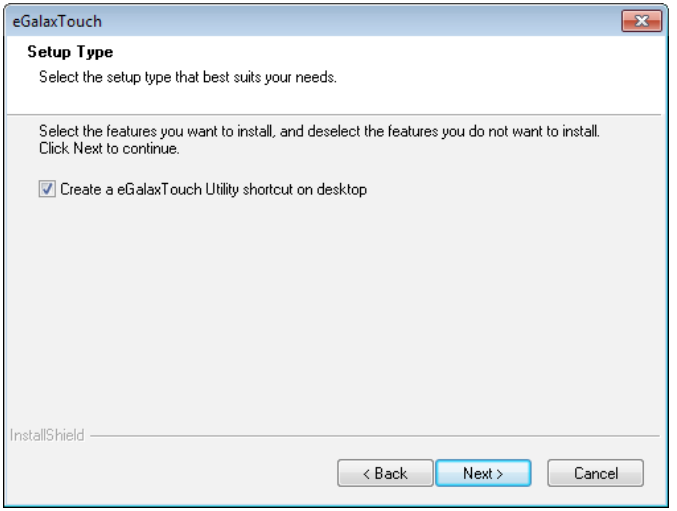
10. Click **Next** to continue.



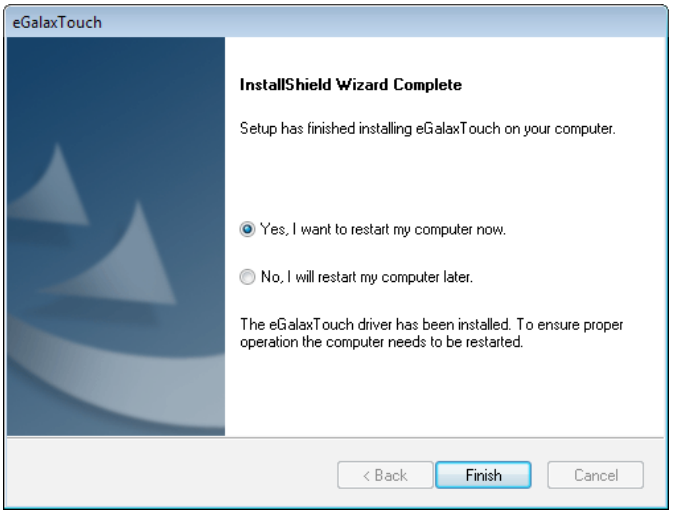
11. Click **Next** to continue.



12. Click **Next** to continue.



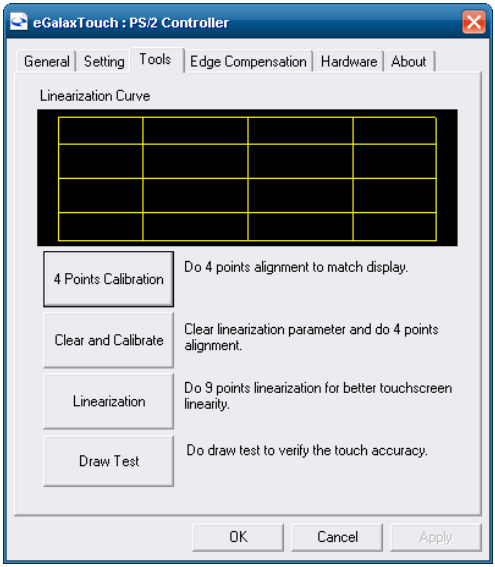
13. Click **Yes, I want to restart my computer now** and then click **Finish**.



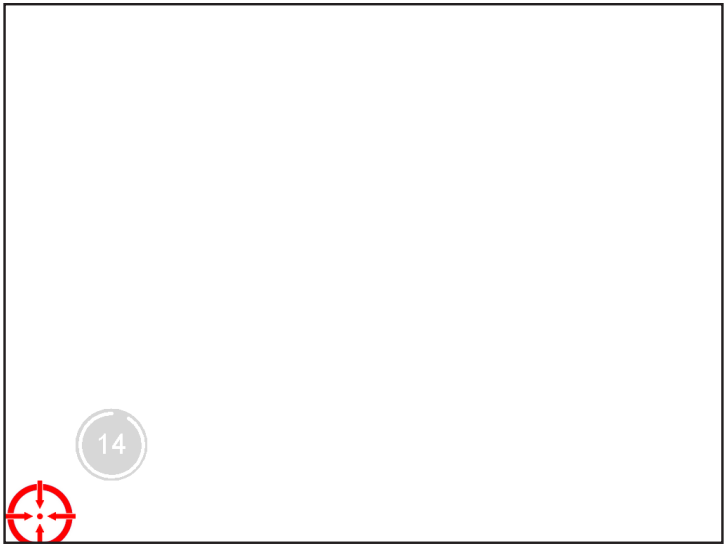
Calibrating the touchscreen

Follow these instructions to calibrate the touchscreen using the TouchKit application:

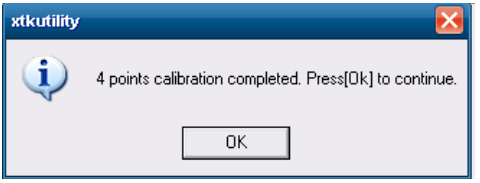
1. Launch the TouchKit application from the Windows desktop by clicking on **Start > All Programs > eGalaxTouch > Configure Utility**.
2. Select the **Tools** page.



3. Click the **4 Points Calibration** button.
4. Use your finger to touch the blinking X Symbol on the screen until stop blinking.



5. Click **OK** to complete the 4 points calibration.



NOTE

You may also use this application to adjust the touch settings.

CHAPTER 4
LOCATING THE PROBLEM

Refer to this section to locate the problem with the machine. The following topics are described.

General checkout guidelines

Use the following procedure to troubleshoot problems:

- Identify as many symptoms as possible in detail.
- Verify symptoms by recreating them.
- Follow the corrective procedures in order.
- If you replace an FRU and the symptom remains, reinstall the original FRU before going to the next step. Do not replace non-defective FRUs.

Cash drawer checkout

Refer to the following to check for a cash drawer problem.

IMPORTANT

The cash drawer RJ-11 connector is DC+24V. Ensure the cash drawer to be connected matches this power specification.

1. Connect the RJ-11 cable from the cash drawer to the RJ-11 connector on the machine as shown in Figure 4.1.

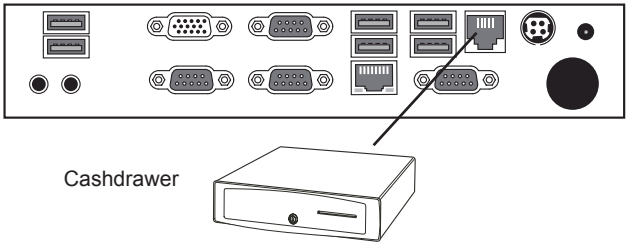


Figure 4.1 Connecting a cash drawer

2. Turn on the machine .

Refer to the following to prevent incorrect cash drawer status detection by the system:

Port	I/O Port Address	Bit	Condition	Note
Cashdrawer A Control port	50C	19	High(1) → Close Low(0) → Open	If Bit is set to Low to open the cash drawer, after it must be set back to High to prevent the system as always detecting the drawer as open.
Cashdrawer B Control port	50C	21	High(1) → Close Low(0) → Open	
Cashdrawer A Status port	538	20	High(1) → Close Low(0) → Open	
Cashdrawer B Status port	538	18	High(1) → Close Low(0) → Open	

LCD symptoms

Symptom	Corrective Procedure
• LCD backlight is not working but text is still visible on screen	1. Reseat the LCD cable. 2. Reseat the inverter cables. 3. Replace the inverter cables. 4. Replace the inverter.
• LCD backlight is working but text is not visible on screen	1. Reseat the LCD cable. 2. Reseat the inverter cables. 3. Replace the LCD.
• LCD screen is garbled • Characters are missing pixels • Screen is distorted • Screen displays wrong color • Screen displays extra vertical/horizontal lines	1. Reseat the LCD cable. 2. Replace the inverter cables. 3. Replace the LCD panel. 4. Replace the mainboard.

Touch screen symptoms

Symptom	Corrective Procedure
• Touchscreen does not function • No virtual mouse • Cursor doesn't follow when touching the screen	1. Install and run the touchscreen calibration program from the driver CD. 2. Reseat the panel cable. 3. Reseat the touchscreen board-to-touch panel cable. 4. Replace the touch control board. 5. Replace the touch panel.

Power symptoms

Symptom	Corrective Procedure
• Power shuts down unexpectedly • Cannot turn the system on	1. Reseat the power AC adapter cable. 2. Reseat the power AC adapter. 3. Replace the mainboard.
• Cannot turn the system off	1. Hold down the power button for four seconds. 2. Replace the mainboard.

Network symptoms

Symptom	Corrective Procedure
• Cannot access LAN	1. Confirm that network hub/switch (if present) is functioning correctly. 2. Reseat the RJ-45 cable. 3. Confirm green and orange LED activity of the RJ-45 jack. 4. Check the network TCP/IP settings. 5. Remove and reinstall the driver. 6. Replace the network cable. 7. Replace the mainboard.

USB symptoms

Symptom	Corrective Procedure
• USB device does not function	1. Check that the USB device is detected in Windows Device Manager. 2. Reinstall the USB device driver. 3. Replace the mainboard.

Peripheral-device symptoms

Symptom	Corrective Procedure
• USB ports do not work • COM ports do not work	1. Reseat the I/O cable. 2. Reinstall the drivers. 3. Replace the mainboard.

Boot symptoms

Symptom	Corrective Procedure
• System continually reboots on power up	1. Restore the BIOS defaults. 2. Remove all I/O device drivers, then reinstall the drivers one by one. 3. Reseat the SATA cable. 4. Reseat the memory card. 5. Reseat the power adapter. 6. Replace the mainboard.

Mainboard jumper

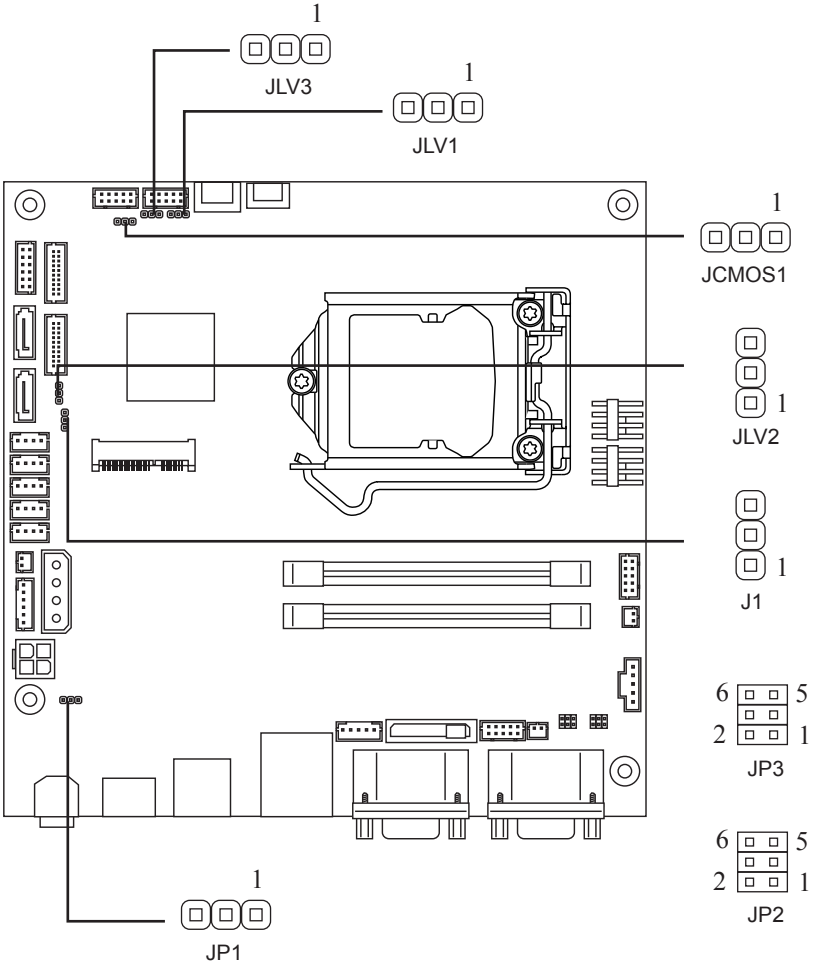


Figure 4.2 SP-1030 mainboard jumper

Jumper	Setting	Description
JP1 Voltage Switch Jumper for Cash Draw RJ-11 Connector	1-2 (default)	24V
	2-3	12V
JCMOS1 Clear CMOS	1-2 (default)	Normal
	2-3	Clear

Jumper	Setting	Description
J1 CN17 USB Power selection	1-2 (default)	5V
	2-3	3.3V
JP2/JP3 Switch headers for COM3/COM4 pin9	1-2	5V
	3-4 (default)	RING
	5-6	12V
JLV1 LCD backlight inverter power selection	1-2	5V
	2-3 (default)	12V
JLV2 LCD panel power selection	1-2 (default)	3.3V
	2-3	5V
JLV3 Backlight control mode selection	1-2 (default)	Voltage level mode
	2-3	PWM mode

Mainboard connectors

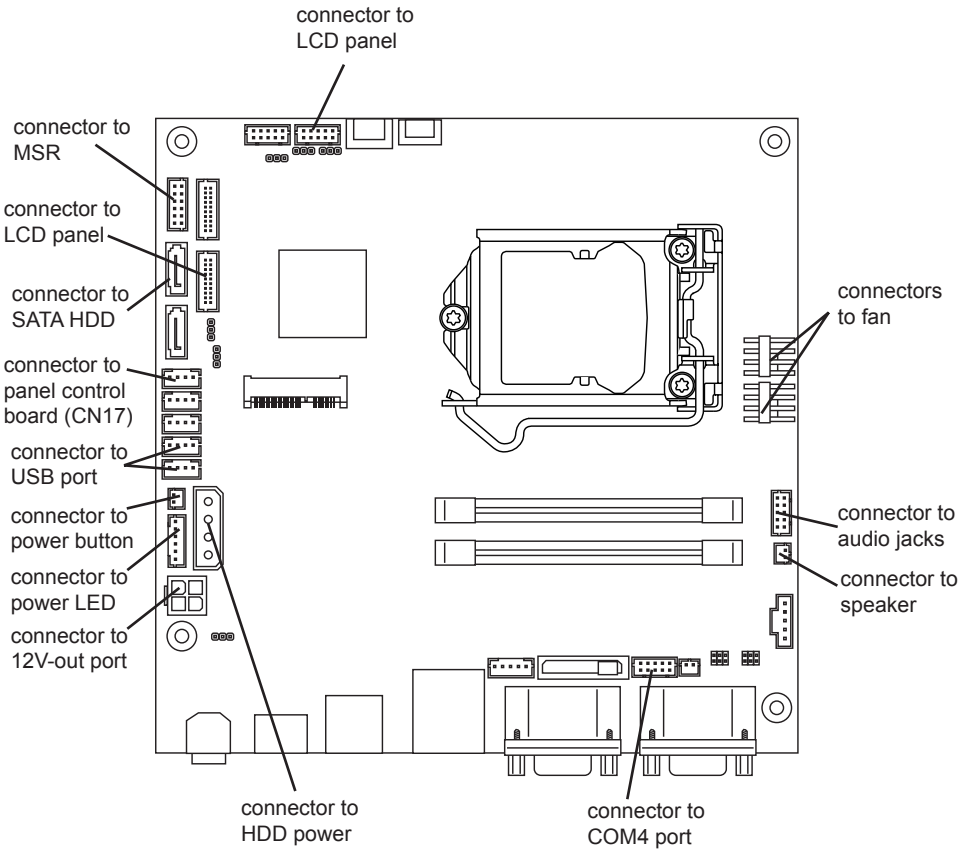


Figure 4.3 SP-1030 mainboard connectors

Panel control board connectors

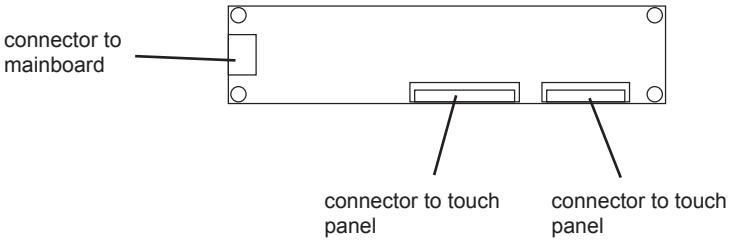


Figure 4.4 SP-1030 panel control board connectors

CHAPTER 5
REPLACING FIELD REPLACEABLE UNITS (FRUs)

This chapter provides instructions for replacing FRUs. The following topics are described.

Safety and precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous. Follow these guidelines to avoid damage to the computer or injury to yourself.

- Always disconnect the unit from the power outlet.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

CAUTION

Only qualified personnel should perform repairs on the SP-1030. Damage due to unauthorized servicing is not covered by the warranty.

CAUTION

If the LCD breaks and fluid gets onto your hands or into your eyes, immediately wash with water and seek medical attention.

Under no circumstances touch the inverter while power is connected to the machine. Unplug the power cord before attempting to replace any FRU.

To prevent static damage to components, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.

Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress the circuit board. Do not hold components such as a processor by its pins; hold it by the edges.

Before you begin

Make sure you have a stable, clean working environment. Dust and dirt can get into the SP-1030 components and may cause malfunction. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the electrical and mechanical connections can be disconnected by using your fingers. It is recommended that you do not use needle-nosed pliers to disconnect connectors as these can damage the soft metal or plastic parts of the connectors.

To prevent scratching the case of the SP-1030, make sure the worktop surface is clean and flat. If you need to put the display facing down, be sure to use a foam mat.

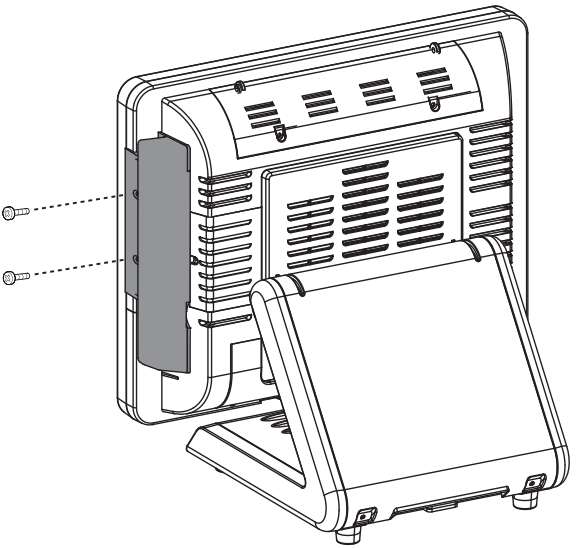
Replacing parts

Take note of the following when replacing parts:

- If you replace an FRU and the symptom remains, reinstall the original FRU before going to the next step. Do not replace non-defective FRUs.
- When replacing a malfunctioning component, other parts that have to be removed before the failing part are listed at the top of the page.
- The arrows in the following procedures show the direction of movement to remove/replace a part, or to turn a screw or key to release a device.
- Always use the correct screw size as indicated in the procedures.
- Always use new screws.
- To replace a part, reverse the removal procedure.

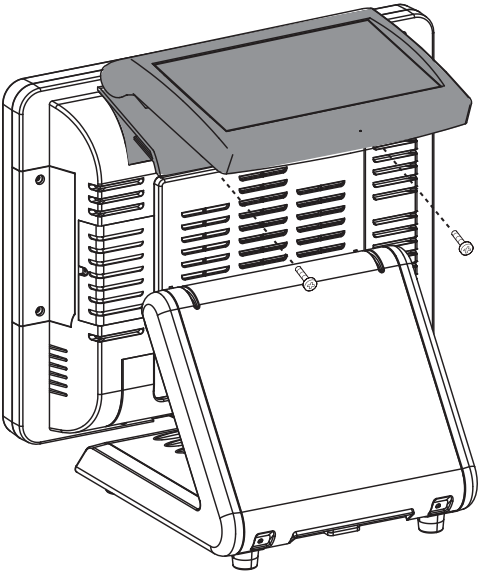
MSR

1. Remove two screws.
2. Disconnect the cable.
3. Remove the MSR.

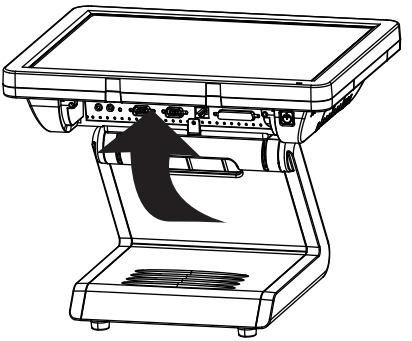
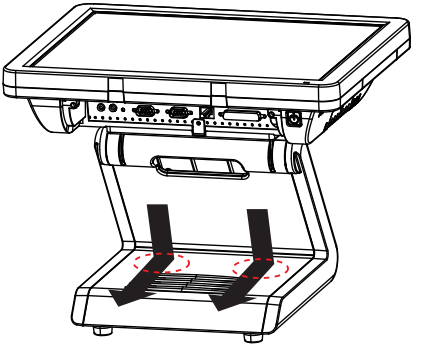
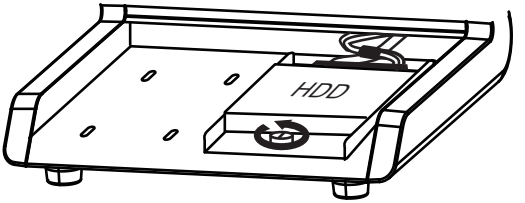
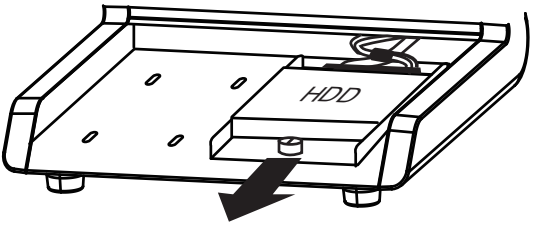
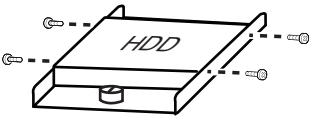


Customer Display

1. Remove two screws.
2. Disconnect the cable.
3. Remove the customer display.

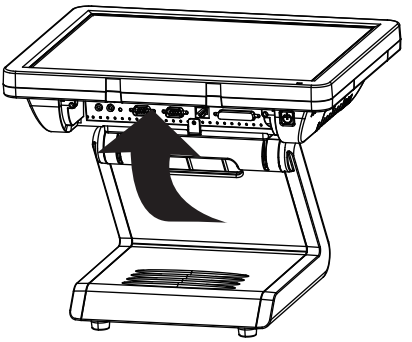


HDD

1. Rotate the LCD screen forward .	
2. Press and the hard drive compartment cover as it shown on the picture.	
3. Turn the screw counterclockwise to loosen the hard drive tray.	
4. Slide the hard drive tray. 5. Disconnect the power cable and SATA cable from the hard drive.	
6. Remove the four screws, then remove the hard drive out from the tray.	

SP-1030 Panel

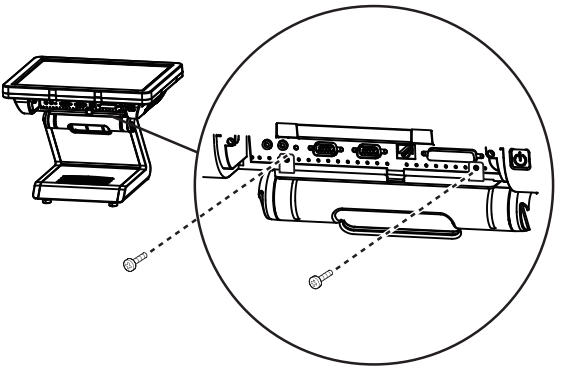
1. Rotate the LCD screen forward .



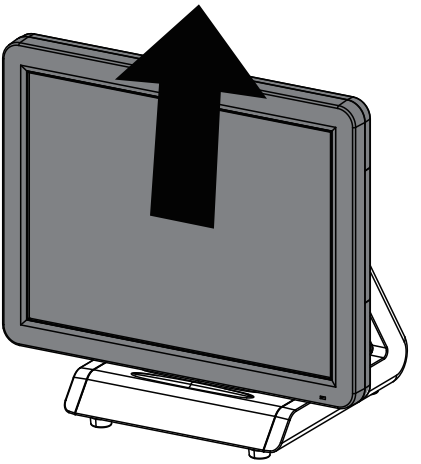
2. Remove the screw that secure the base to the SP-1030.

CAUTION

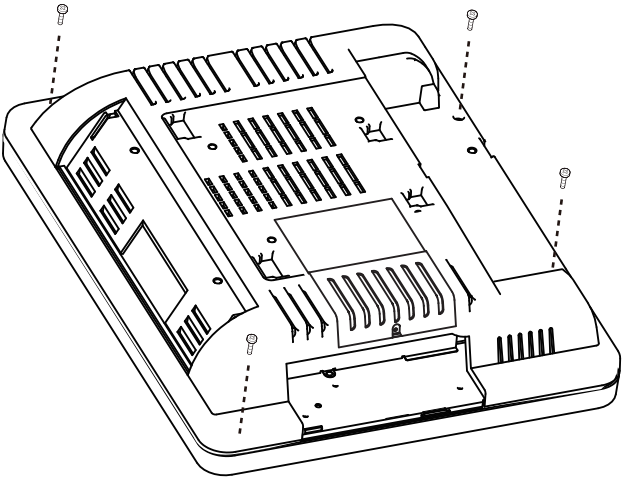
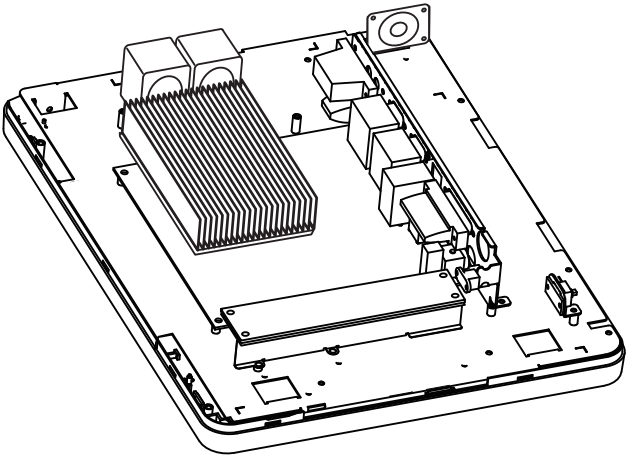
The screen is fragile. Placing the monitor face-down on a flat, soft area prevents scratches, defacing, or breakage.



3. Disconnect cables from HDD.
4. Lift the panel and remove it from the base.



Panel Back Cover

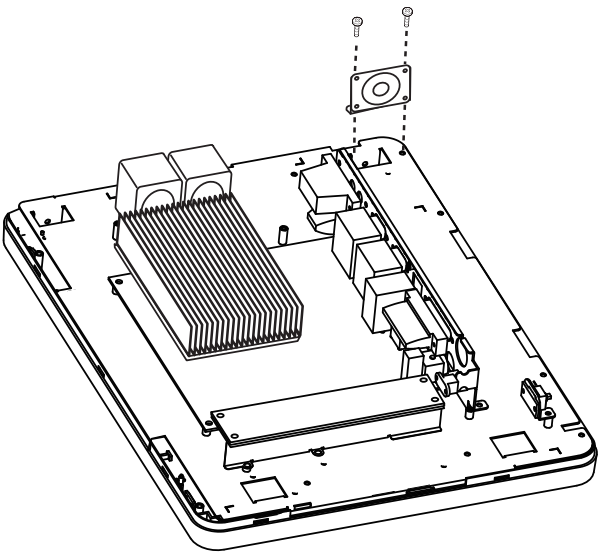
Before proceeding, remove the following FRUs. • "SP-1030 Panel" on page 51. 1. Remove four screws.	
2. Gently pull away the top of back cover, then open the back cover.	

Speaker

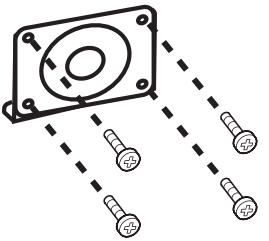
Before proceeding, remove the following FRUs.

- “SP-1030 Panel” on page 51.
- “Panel Back Cover” on page 52.

1. Remove two screws from the speaker bracket.



2. Remove four screws.
3. Disconnect the cable from the mainboard.
4. Remove the speaker.

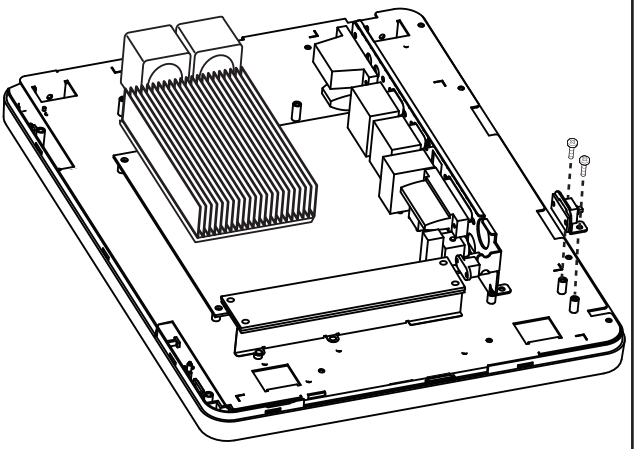


Power Button

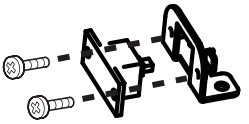
Before proceeding, remove the following FRUs.

- "SP-1030 Panel" on page 51.
- "Panel Back Cover" on page 52.

1. Remove two screws from the power button bracket.



2. Remove two screws.
3. Disconnect the cable from the mainboard.
4. Remove the power button.



Heatsink

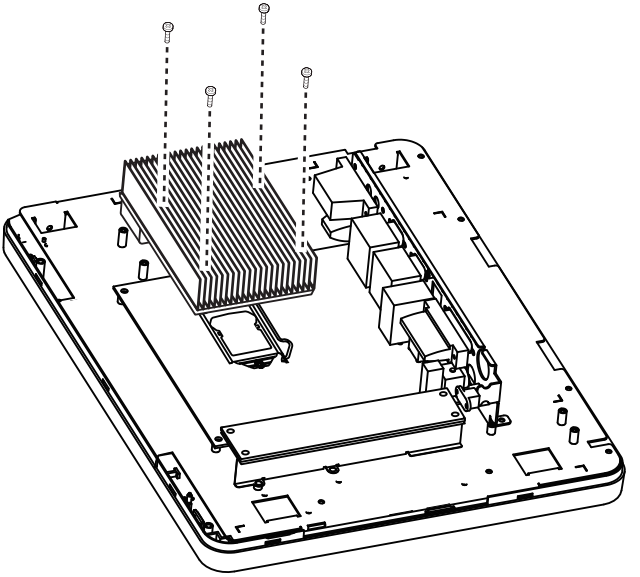
Before proceeding, remove the following FRUs.

- "SP-1030 Panel" on page 51.
- "Panel Back Cover" on page 52.

1. Remove four screws from the heatsink.
2. Remove the heat sink.

CAUTION

To avoid the heat sink clearance issue. When you replace the heat sink, apply the thermal paste between the contact surface of the heat sink and CPU.

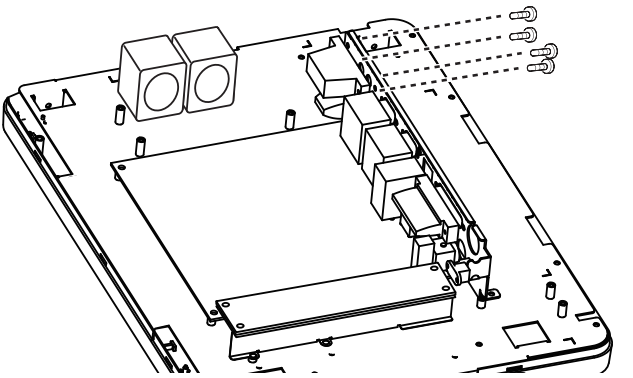


USB Port and Audio Port

Before proceeding, remove the following FRUs.

- "Panel Back Cover" on page 52.

1. Remove four screws.
2. Remove the USB port and audio port.

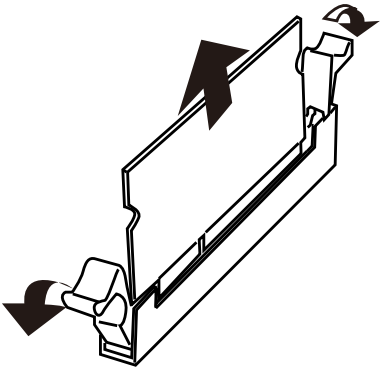


Memory

Before proceeding, remove the following FRUs.

- "Panel Back Cover" on page 52.

1. Open the clips.
2. Pull out the memory module.



Battery

Before proceeding, remove the following FRUs.

- "Panel Back Cover" on page 52.

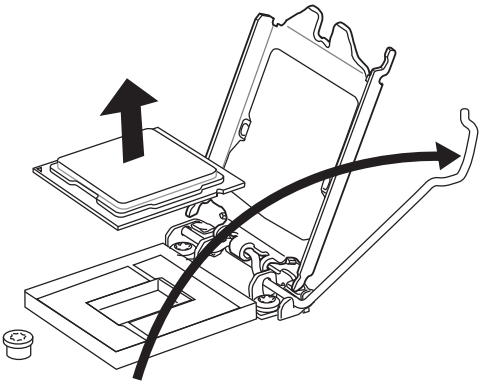
1. Open the hock.
2. Pull out the battery.

CPU

Before proceeding, remove the following FRUs.

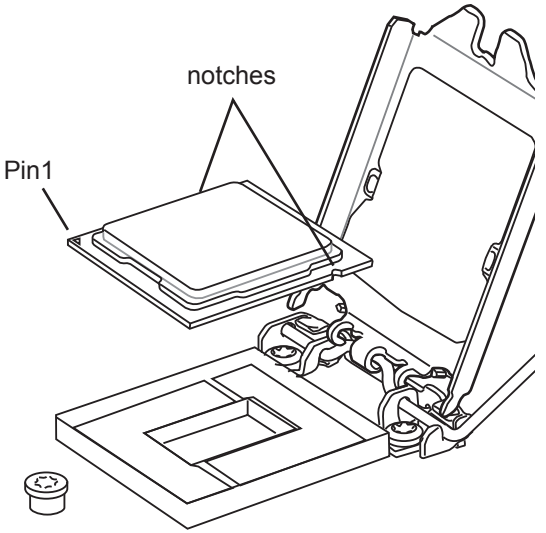
- "Panel Back Cover" on page 52.

1. Open the load lever.
2. Pull out the CPU.

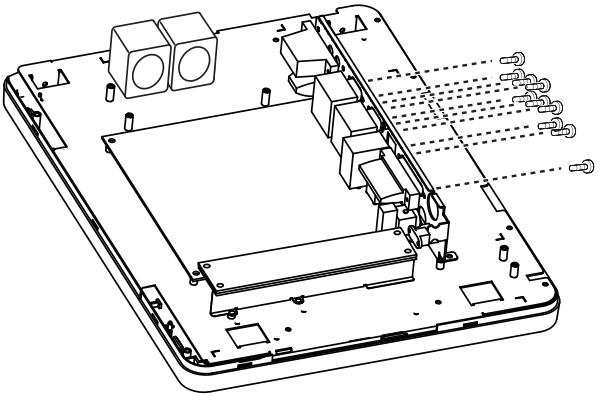
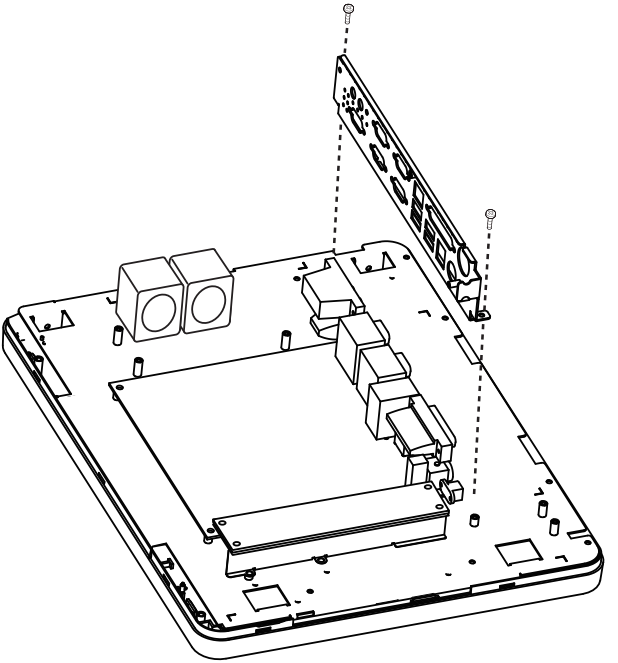


CAUTION

When you replace the CPU, align notches and Pin1 as shown.



I/O Shield

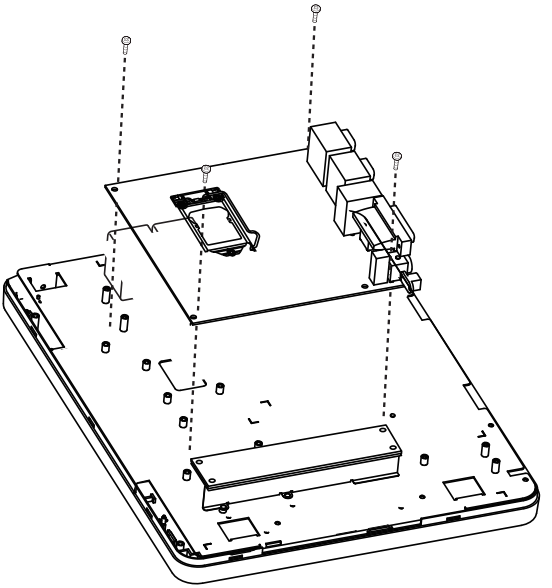
Before proceeding, remove the following FRUs. • "SP-1030 Panel" on page 51. • "Panel Back Cover" on page 52. 1. Remove all screws from the I/O ports.	
2. Remove two screws from the I/O shield. 3. Remove the I/O shield.	

Mainboard

Before proceeding, remove the following FRUs.

- “SP-1030 Panel” on page 51.
- “Panel Back Cover” on page 52.
- “Heatsink” on page 55.
- “I/O Shield” on page 58.

1. Disconnect all cables from the mainboard.
2. Remove four screws.
3. Remove the mainboard.

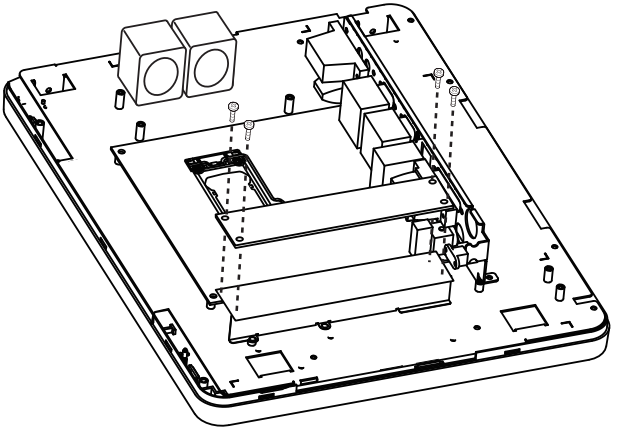


Panel Control Board

Before proceeding, remove the following FRUs.

- “SP-1030 Panel” on page 51.
- “Panel Back Cover” on page 52.

1. Remove four screws.
2. Remove the panel control board.

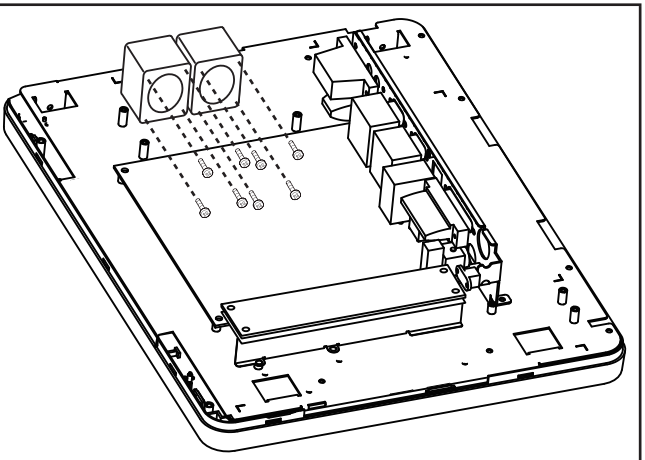


Fan

Before proceeding, remove the following FRUs.

- “SP-1030 Panel” on page 51.
- “Panel Back Cover” on page 52.

1. Disconnect all cables from the fans.
2. Remove eight screws.
3. Remove the fans.

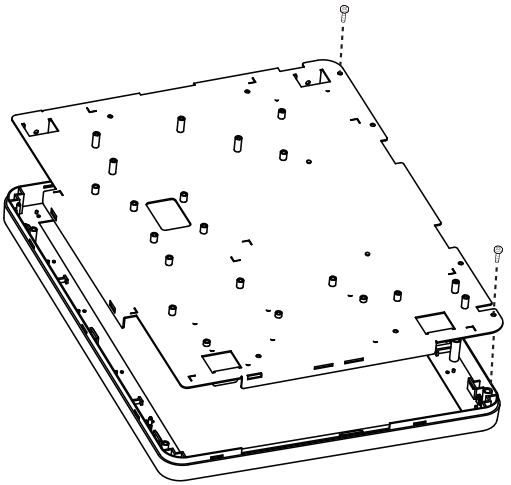


Panel Bracket

Before proceeding, remove the following FRUs.

- “SP-1030 Panel” on page 51.
- “Panel Back Cover” on page 52.
- “Speaker” on page 53.
- “Power Button” on page 54.
- “Heatsink” on page 55.
- “I/O Shield” on page 58.
- “Mainboard” on page 59.
- “Panel Control Board” on the page 59
- “Fan” on the page 60

1. Disconnect all cables.
2. Remove two screws.
3. Remove the panel bracket.

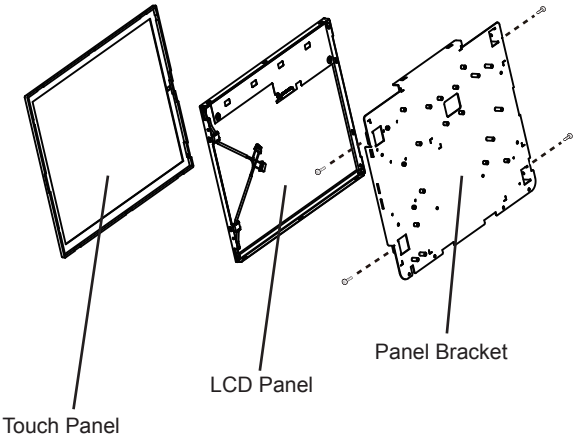


Touch Panel, LCD Panel

Before proceeding, remove the following FRUs.

- “SP-1030 Panel” on page 51.
- “Panel Back Cover” on page 52.
- “Speaker” on page 53.
- “Power Button” on page 54.
- “Heatsink” on page 55.
- “I/O Shield” on page 58.
- “Mainboard” on page 59.
- “Panel Control Board” on the page 59
- “Fan” on the page 60
- “Panel Bracket” on page 64.

1. Remove four screws from the panel bracket.
2. Remove the LCD panel.
3. Remove the touch panel.



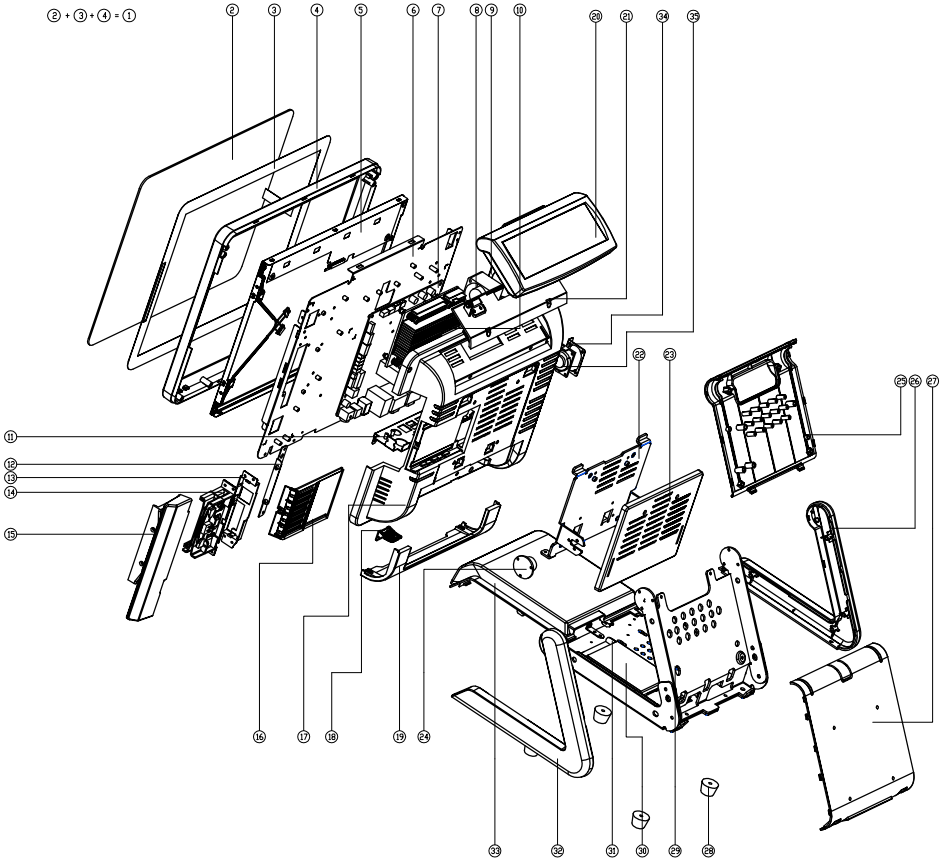


Figure 6.1 Exploded diagram main parts

Part list

NO.	DESCRIPTION	ITEM NO
1	2+3+4	6651500S00002
2	Touch panel	2619040310001
3	Glue	250814500S001
4	Panel cover	25000500S0108
5	TFT LCD/15”	2614550150011
6	Panel Bracket	21004500S0036
7	Mainboard	26105500S3000
8	Fan 40x40x28	2103000000145
9	Fan supporter	21004500S3002
10	Heatsink	2103200000010
11	IO Bracket	21004500S3001
12	MSR bracket	25003500M2105
13	MSR base	25002500M2001
14	MSR module	7005000001015
15	MSR cover	25000500M2002
16	HDD compartment cover	25003500S0103
17	Back cover	25002500S0105
18	Power button	25003500S0104
19	IO cover	25003500S0109
20	VFD	770500S090002
21	VFD bracket	25003500S0106
22	Hinge mount	21004500S0023
23	Hinge mount cover	25003500S0111
24	Hinge - left	2108100000028
25	Base cover - Front	25000500S0100
26	Base side cover - Right	25003500S0101
27	Base cover - Back	25002500S0305
28	Rubber foot	2509030500L02
29	Base bracket	21002500S0002
30	HDD	2611571103203
31	HDD tray	21004500S0000
32	Base side cover - Left	25003500S0102
33	Base HDD compartment cover	25003500S0100
34	Speaker bracket	21004500S3000
35	Speaker	1379999000020

Specifications

Item	SP-1030
CPU	Intel IVY or Sandy LGA1155 CPU Celeron G540 2.5Ghz dual core, Ivy Bridge i3-3220 3.3 GHz dual core, Ivy Bridge i5-3550S 3.0 GHz Quad core
Chipset	Intel B75 chipset
LCD	15” LCD, resolution 1024 x 768 LED backlight
Touch	Bezel free resistive touch (default) 5-wire resistive touch screen(option)/ Projected capacitive touch screen (option)
Construction	Plastic back cover
Memory	2GB Standard, Maximum 16 GB (2 x DDR3 SO-DIMM Slots)
Ethernet	Onboard 10/100/1000 BASE-T Gigabit Ethernet
Storage	Internal 2.5” type SATA HDD x 1 in base, option 2nd HDD or SSD in base
External I/O Interface	6 * COM ports (COM1~4 at the I/O panel, COM5 Reserved, COM6 for VFD) 1 * DB-15 VGA port 2 * USB 3.0 + 4 * USB 2.0 1 * RJ11 port supports 2 cash drawer(DC+24v) 1 * RJ-45 LAN port with activity and link LEDs 2 * Audio(1 *Line-out, 1 *MIC-in) 1 * DC+12V outut 1 * DC+12V input power-jack
Expansion Options	1 * Mini PCI-e, Support Wireless Module Power USB 12Vx1, 24Vx1
Optional Peripherals	3 tracks magnetic reader Customer display module (2 x 20 VFD) Biometric Reader, Smart Card Reader, I-Button, RFID reader 2nd 11.6” monitor (Dual screen/15” monitor/CD-70)
Operation System	POSready7, POSready 2009,Linux (ubuntu,),Windows8.1 Industry Pro Retail
Power Supply	AC100~240V/DC12V, 180 watts
Physical Dimensions	360mm (W) x233mm (D) x 323mm (H)
Operating Temp	0°C ~ +40°C
Storage Temperature	-20°C ~ +60°C
Humidity	15%~80%
Certification	CE, FCC, LVD, VCCI, BSMI, 3C, Class A