Gateway

iXtreme 5860 Service Guide

PRINTED IN TAIWAN

Revision History

Please refer to the table below for the updates made on this service guide.

Date	Chapter	Updates

Copyright

Copyright©2010 by Acer Incorporated. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without the prior written permission of Acer Incorporated.

Disclaimer

The information in this guide is subject to change without notice.

Acer Incorporated makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties of merchantability or fitness for any particular purpose. Any Acer Incorporated software described in this manual is sold or licensed "as is". Should the programs prove defective following their purchase, the buyer (and not Acer Incorporated, its distributor, or its dealer) assumes the entire cost of all necessary servicing, repair, and any incidental or consequential damages resulting from any defect in the software.

Acer is a registered trademark of Acer Corporation.
Intel is a registered trademark of Intel Corporation.
Pentium Dual-Core, Celeron Dual-Core, Core 2 Duo, Core 2 Quad, Celeron, and combinations thereof, are trademarks of Intel Corporation.
Other brand and product names are trademarks and/or registered trademarks of their respective holders.

Conventions

The following conventions are used in this manual:

SCREEN MESSAGES	Denotes actual messages that appear on screen.
NOTE	Gives additional information related to the current topic.
WARNING	Alerts you to any physical risk or system damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

Service Guide Coverage

This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g.add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

FRU Information

Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Table of Contents

System Tour

Features

Below is a brief summary of the computer's many feature:

NOTE: The features listed in this section is for your reference only. The exact configuration of the system depends on the model purchased.

Chassis Specification

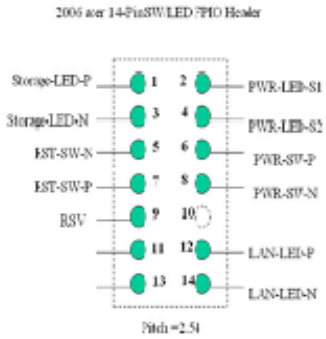
Number of 5.25" Drive Bay	- 2 external * Reserve optional 3.5" HDD carrierx1
Number of 3.5" Drive Bay	- 1 external bay, 2 internal bays
Number of Total Add-in Slot	-4 slots
Bezel	- PM350 & PM351
Control and Indicator	- 1 Single color LED for Power (white) - 1 single color LED for HDD (white) - 2 single color LED for Logo (white) - 8 single color LED for front/top bezel (white)
Front I/O Connector	- Front : - 2 USB 2.0 Ports - 2 HD audio jacks: black Top : - 2 USB 2.0 Ports
S/PDIF connector / USBx2 connector	- S/PDIF or S/PDIF+ USBx2 daughter board
Motherboard Mounting Feature	- Features for mounting MicroATX (9.6 inches*9.6inches, 244mm*244mm) motherboard - No obstruction to mount MicroATX motherboard Add-in card slots align with MicroATX motherboard
Power Supply Mounting Feature	- Chassis accepts ATX-style power supply - Chasses accepts PS2 style power supply - Features for internal mounting tab - Location of 4 external mounting holes

Power Supply Electrical Design Feature	- 250W/300W/500W in stable mode (Acer Assign System Power Unit) - Support 82+ PSU for EnergyStar 5.0 complaint - Design for H67 series chipset compatible system - Voltage design should be covered +5V, +3.3V, +12V, +5VSB, -12V (attention to 12V output capability) - Demand for both PFC/Non-PFC solutions (two different quotations are needed) - Minimum 4 Serial ATA power connector solution should be included (by default) - Minimum 1 big 4-pin power connector included - Minimum 1 small 4-pin power connector included - PFC version will not provide switch selector for 115/230V AC input but it should be universal for Europe and China - Non-PFC version should provide switch selector for 115/230V AC input and universal for worldwide
Security Feature	- Lock pad
Thermal Feature	- Provision for optional secondary fan (depending on CPU) - Adequate venting in the front of chassis - Adequate venting in the rear of chassis - Must Follow DT thermal Engineering RFW in Appendix
EMI Considerations	- I/O shield provides contact between I/O ports and chassis - Open external drive bays contain EMI shields - Filler panels of empty add-in card slots seated - Chassis seams have features to enhance grounding - Motherboard mounting features provides grounding
Acoustic Criteria	- Operating mode: 32 dBA or under *under Windows OS) - Idle mode: 28 dBA or under (under Windows OS), please refer to Acer test summary for details - Must Follow DT ATX acoustic Engineering RFW in Appendix
Vibration Test Criteria	- Operating „ 5 ~ 16.2 Hz: 0.38mm (peak to peak) „ 16.2 ~ 250 Hz: 0.2G „ Sweep rate: 1 octave/minute „ Direction: X, Y, Z axis „ Test cycles : 2 cycles per axis - Non-operating „ 5 ~ 27.1 Hz : 0.6G „ 27.1 ~ 50 Hz : 0.4mm (peak to peak) „ 50 ~ 500 Hz: 2.0G „ Sweep rate: 0.5 octave/minute „ Direction: X, Y, Z axis „ Test cycles: 4 cycles per axis

Motherboard Specification

RoHS	- Should be compliant with RoHS
EuP	- Should be compliant with EuP Lot6
Size	- Max. 244mm x 244mm, MicroATX
Certification	- Microsoft MDA 2010 compliant - HDMI 1.4a ■ Certificate fee paid by MB vendor
Brand Logo	- Need to print Acer logo on PCB
PCB	- 4 layers
Platform Branding	- Meet Intel Manageability
Processor	- Socket Type: Intel Socket1155 Socket Quantity: 1
System Chipset	- SB: Intel H67 - Design Criteria: Should meet Intel H67 platform design guide Should meet Intel BIOS specification - Super I/O: ITE8772 support PECI sense CPU
Memory	- Socket Type: DDR III connector ■ Socket Quantity: 4 DIMMs ■ Channel A: Slot 2, 4; Channel B: Slot 1, 3 ■ Different colors for slot 1/2 and slot 3/4 - Dual channel support - Speed support: ■ 1333MHz - Capacity support: ■ DDR III un-buffered non-ECC DIMM support ■ 1GB to 16GB max. Memory support - - Design Criteria: ■ Should meet Intel Chipset platform design guide ■ Dual channel should be enabled always when plug-in 2 same memory size DDR III memory module Should meet Intel chipsets family BIOS specification

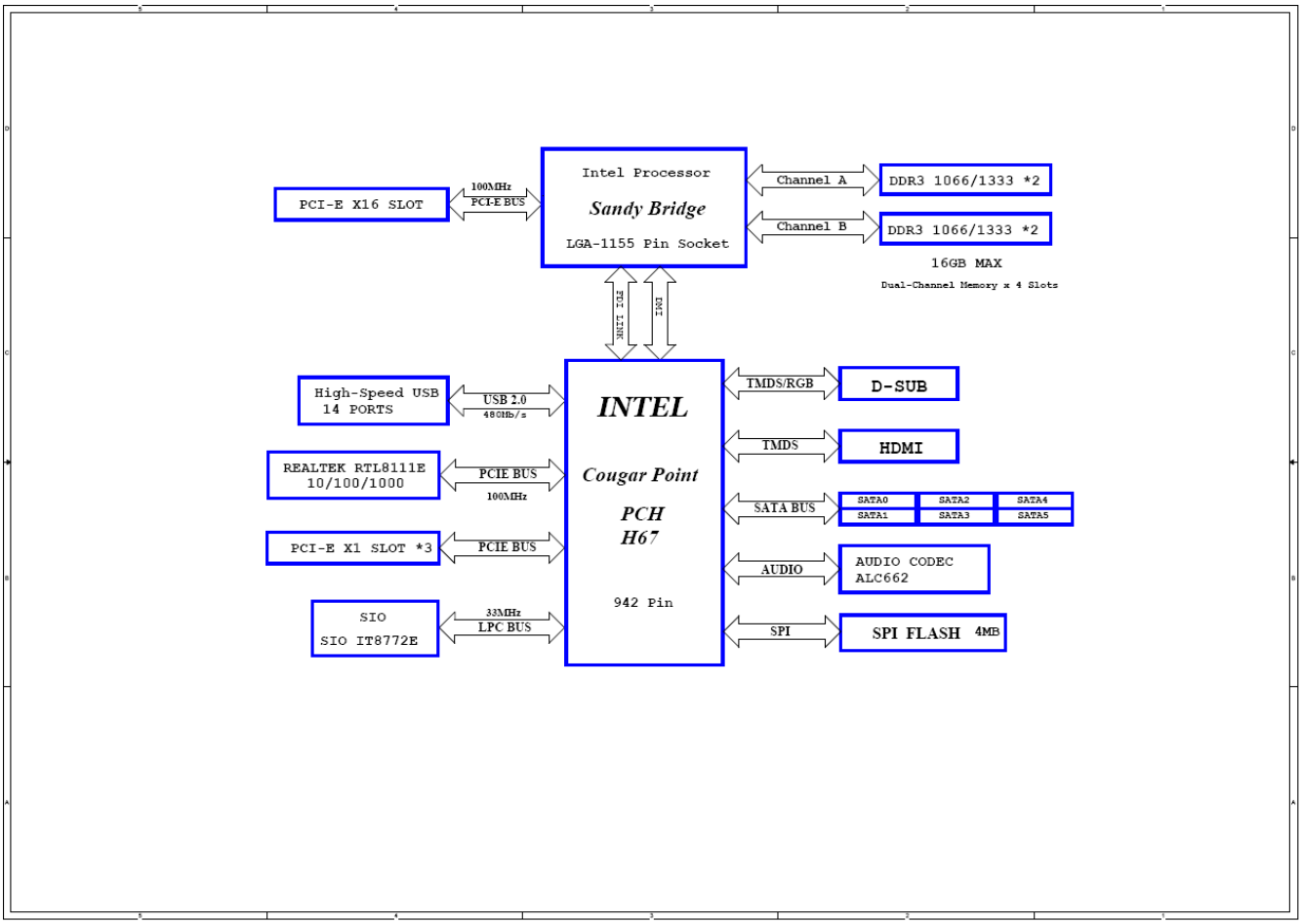
On-Board Graphic Solution	- Intel HD graphic solution ■ Meet Microsoft Vista Premium graphic requirement ■ 1 HDMI port and 1 D-sub port for Consumer model Need to measure VGA follow Acer SOP
PCI Express / PCI slot	- PCI Express Slot Type : x16 ■ Quantity : 1 - PCI Express Slot Type : x1 ■ Quantity : 3 - The sequence should be PCI Express x16 > PCI Express x1
FDD	- None
IDE	- None
SATA	■ Quantity: 6 ■ Transfer rate support: 1.5Gb/s and 3Gb/s ■ Transfer rate support: 6Gb/s (Only Port0/Port1) ■ Storage Type Support: HDD/CD-ROME/CD-RW/DVD-ROM/DVD-RW/DVD+RW/DVD Dual/DVD SuperMultiPlus/ Blu-Ray ODD
Audio	- Chip: Realtek HD audio codec ALC662-VC HD codec 5.1 - Connectors support: ■ Rear 3 jacks follow HD audio definition, Example as below ■ Audio jacks color coding should meet Microsoft Windows Logo Program Device Requirement: Audio-0002 ■ 1 front panel audio header (2x5) ■ Add HD de-pop CKT (the attachment is the reference, please propose your solution) ■ S/N ratio: 90 dB at rear output jack ■ Follow Acer Audio Spec v5.2 and Audio C/R should support Acer Internal speaker spec ■ Follow Realtek audio design: (for front DB jack detection issue) ■ Jack Detection Resistor R37344 and R37345 are located near Codec IC ■ Noise will bypass by R37344 and R37345, Jack Detect function will be workable ■ Audio device should meet Microsoft Windows Professional and Windows 7 latest logo requirement ■ BIOS should meet Microsoft Pin Configuration Guidelines for High Definition Audio Devices http://www.microsoft.com/whdc/device/audio/PinConfig.mspx

LAN	- Controller: Realtek 8111E Gigabit Ethernet controller ■ Port: 1 x RJ45 rear port from Gigabit Ethernet - Design Criteria: ■ Should be worked under 10/100/1000Mbs environment Reserved disable function on both hardware and BIOS side. Default is enabled.
USB	- Controller: AMD SB810 - Ports Quantity: 14 (should reserve more header for front DB) ■ 6 ports for rear port ■ On-board: 4 2*5 headers ◆ 4 ports for front daughter board ◆ 2 ports for internal card reader ◆ 2 ports for Daughter board (Aspire M5400/M3400 only) ■ Connector Pin: Standard FPIO pin definition - Data transfer rate support: ■ USB 2.0/1.1
IEEE 1394	- None
Buzzer	- 1 on board buzzer
Front Panel I/O Header	
TPM Module	- None

Hardware Monitor	- Controller: Super I/O ITE 8772 - Monitor Functions: ■ Temperature: ◆ CPU/System ◆ Monitor System Ambient Temp ◆ Monitor CPU Temp ■ Fan Speed: ◆ Monitor CPU fan speed ◆ Monitor System fan spped ■ Voltage ◆ Vcore /+12V / +5V / +3.3V / 5VSB/ +BAT - Design Criteria : ■ Designed in CPU over temperature warning /shut down circuit ■ Linear mode control for CPU and System Fan separately by individual sensor ■ PWM function should cover ACPI mode and non-ACPI mode Nice to support for higher 128 bytes r/w by SMBus
System LED Definition	- Power State LED ■ S0 Blue Steady ■ S1/S3 Blue Blinking ■ S4/S5 Off - Storage State LED ■ Active Blue Blinking ■ Idle Off - Please refer to Acer BIOS spec for details and follow Acer LED spec
Current and Voltage on LED	- The Blue LED current and voltage bias must follow “LED Definition v1.4 in Appendix” ■ Voltage bias: 5V ■ Current: 20mA

All On-board Connectors List	- Rear I/O connectors ■ 1 PS/2 Keyboard port ■ 1 PS/2 Mouse port ■ 1 HDMI port (need certification) for consumer models ■ 1 D-sub port ■ 6 USB ports ■ 1 RJ45 LAN port ■ 5.1 channel phone jack (3 audio jacks) - On-board connectors ■ 1 INTEL 1155 CPU socket ■ 4 DDR3 memory sockets ■ 1 PCI Express x16 slot ■ 3 PCI Express x1 slot ■ 6 SATA2 connectors ■ 4 2x5-pin Intel FPIO specification USB pin connectors (follow Intel FPIO Standard Specification) ■ 1 2x5-pin Intel FPIO spec Microphone In/ Headphone Out pin connector ■ 1 3-pin CPU fan connector (co-lay with 4-pin CPU fan connector) ■ 1 3-pin system fan connector with linear circuit ■ 1 24-pin + 4-pin ATX interface PS3/PS2 SPS connector ■ 1 2x7-pin front panel I/O header ■ 1 Jumper for clear CMOS ■ 1 on board buzzer ■ 2 reserved 2-pin GPIO connector Color management for on board connector (please provide proposal)
Acer Hardware spec	- Please follow: ■ Acer Desktop H/W Validation Request rev 2.7 ■ Acer Motherboard EE Design Request v3.7
Others	- Support dual-head display and surround view - Not Support HDD Password function

Block Diagram



System Utilities

CMOS Setup Utility

CMOS setup is a hard ware configuration program built into the system ROM, called the complementary metal- oxide semiconductor (CMOS) Setup Utility. Since most systems are already properly configured and optimized, there is no need to run this utility. You will need to run this utility under the following condition.

- When changing the system configuration settings
- When redefining the communication ports to prevent any conflicts
- When modifying the power management configuration
- When changing the password or making other changes to the security setup
- When a configuration error is detected by the system and you are prompted ("Run Setup" message) to make changes to the CMOS setup

NOTE: If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

CMOS setup loads the configuration values in a battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM which allows configuration data to be retained when power is turned off.

Before you run the *CMOS* Setup Utility, make sure that you have saved all open files. The system reboots immediately after you close the Setup.

NOTE: *CMOS* Setup Utility will be simply referred to as “BIOS”, "Setup", or "Setup utility" In this guide.

The screen shots used in this guide display default system values. These values may not be the same those found in your system.

Entering CMOS setup

1. Turn on the server and the monitor.

   If the server is already turned on, close all open applications, then restart the server.

2. During POST, press **Delete.**

   If you fail to press **Delete** before POST is completed, you will need to restart the server.

   The Setup Main menu will be displayed showing the Setup's menu bar. Use the left and right arrow keys to move between selections on the menu bar.

Navigating Through the Setup Utility

Use the following keys to move around the Setup utility.

- **Left** and **Right** arrow keys–Move between selections on the menu bar.
- **Up** and **Down** arrow keys–Move the cursor to the field you want.
- **PgUp** and **PgDn keys**–Move the cursor to the previous and next page of a multiple page menu.
- **Home**–Move the cursor to the first page of a multiple page menu.
- **End**–Move the cursor to the last page of a multiple page menu.
- **+**and**-**keys–Select a value for the currently selected field (only if it is user-configurable).Press these keys repeatedly to display each possible entry, or the **Enter** key to choose from a pop-up menu.

NOTE: Grayed-out fields are not user-configurable.

- **Enter** key–Display a submenu screen.

NOTE: Availability of submenu screen is indicated by a(>).

- **Esc**–If you press this key:
  - On one of the primary menu screens, the Exit menu displays.
  - On a submenu screen, the previous screen displays.
  - When you are making selections from a pop-up menu, closes the pop-up without making a selection.
- **F1**–Display the General Help panel.
- **F6**–Press to load optimized default system values.
- **F7**–Press to load fail-safe default system values.
- **F10**–Save changes made the Setup and close the utility.

Setup Utility Menus

The Setup Main menu includes the following main setup categories.

Parameter	Description
Product Information	This page shows the relevant information of the main board
Standard CMOS Features	This setup page includes all the items in standard compatible BIOS
Advanced BIOS Features	This setup page includes all the items of Award special enhanced features
Advanced Chipset Features	This setup page includes all advanced chipset features
Integrated Peripherals	This setup page includes all onboard peripherals
Power Management Setup	This setup page includes all the items of Green function features
PC Health Status	This setup page is the System auto detect Temperature, voltage, and fan speed
Frequency/Voltage Control	This setup page is the System Frequency setup
BIOS Security Features	Change, set or disable password. It allows you to limit access to the System
Load Default Setting	Load Default Setting indicates the value of the system in best performance configurationparameters which the system would be
Save & Exit Setup	Save CMOS value settings to CMOS and exit setup
Exit Without Saving	Abandon all CMOS value changes and exit setup

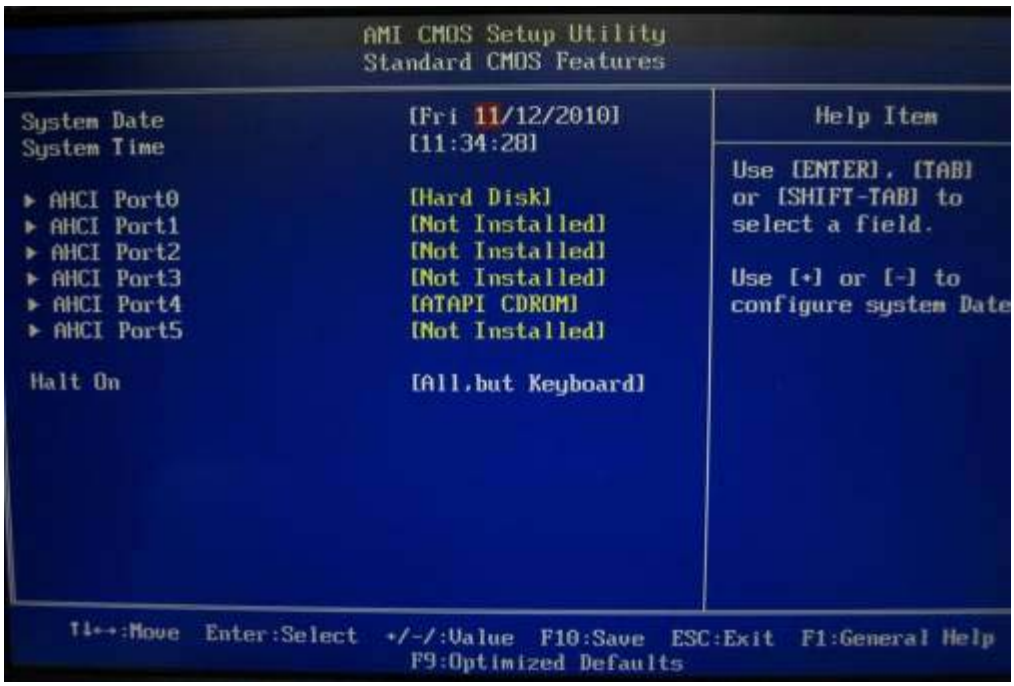
In the descriptive table following each of the menu screen shots, settings in **boldface** are the default and suggested settings

Product Information

The Product Information menu displays basic information about the system. These entries are for your reference only and are not user-configurable.

Parameter	Description
Processor Type	Type of CPU installed on the system.
Processor Speed	Speed of the CPU installed on the system.
System Memory	Total size of system memory installed on the system.
Product Name	Product name of the system.
System Serial Number	Serial number of the system.
System BIOS Version	Version number of the BIOS setup utility.
BIOS Release Date	Date when the BIOS setup utility was released
Asset Tag Number	Asset tag number of this system.

Standard CMOS Features



Parameter	Description	
System Date	Set the date following the weekday-month-day-year format.	
System Time	Set the system time following the hour-minute-second format.	
Halt On	Determines whether the system will stop for an error during the POST.	All, But Keyboard No Errors All Errors

Advanced BIOS Feature

Parameter	Description	Option
Quick Boot	Allows you to decrease the time it takes to boot the computer by shortening or skipping certain standard booting process.	Enabled Disabled
Quiet Boot	When enabled, the BIOS splash screen displays during startup. When disabled, the diagnostic screen displays during startup.	Enabled Disabled
1st/2nd/3rd/4th Boot Device	Specifies the boot order from the available devices.	Hard Disk CD^DVD Removable Device LAN
Hard Disk Drive Priority	Press Enter to access the Hard Disk Drive Priority submenu and specify the boot device priority sequence from available hard drives.	
Optical Disk Drives Priority	Press Enter to access the Optical Disk Drive Priority submenu and specify the boot device priority sequence from available CD/DVD drives.	
Removable Device Priority	Press Enter to access the Removable Device Priority submenu and specify the boot device priority sequence from available removable drives.	
Bootup Num-Lock	Selects power on state for Num Lock.	On Off
USB Beep Message	Enables or disables BIOS to display error beeps or messages during USB device enumeration.	Disabled Enabled

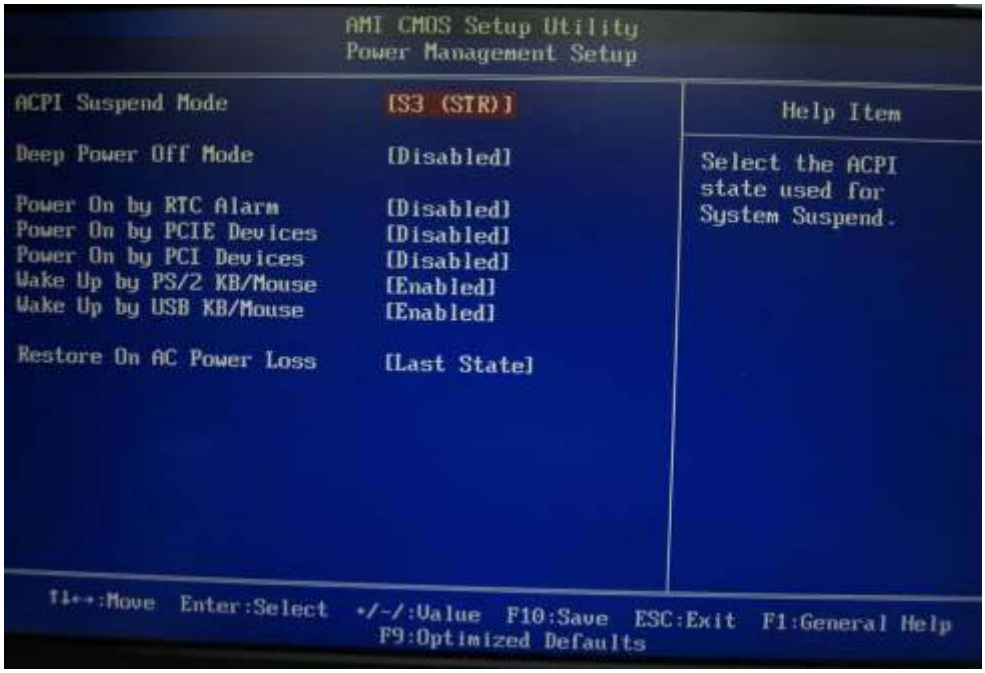
Advanced Chipset Features

Parameter	Description	Option
AMD Cool'n' Quiet	When enabled, this feature allows the OS to reduce power consumption. When disabled, the system operates at maximum CPU speed.	Enabled Disabled
AMD-V	Enables or disables the Virtualization Technology (VT) availability. If enabled, a virtual machine manager (VMM) can utilize the additional hardware virtualization capabilities provided by this technology. Note: A full reset is required to change the setting.	Enabled Disabled
ASF	Enables or disables ASF	Enabled Disabled
Primary Video	Select a Video memory size	Auto
UMA Frame buffer Size	Select a Frame buffe size	Auto
Surround view	Enables or disables Surrande view	Enabled Disabled

Integrated Peripherals

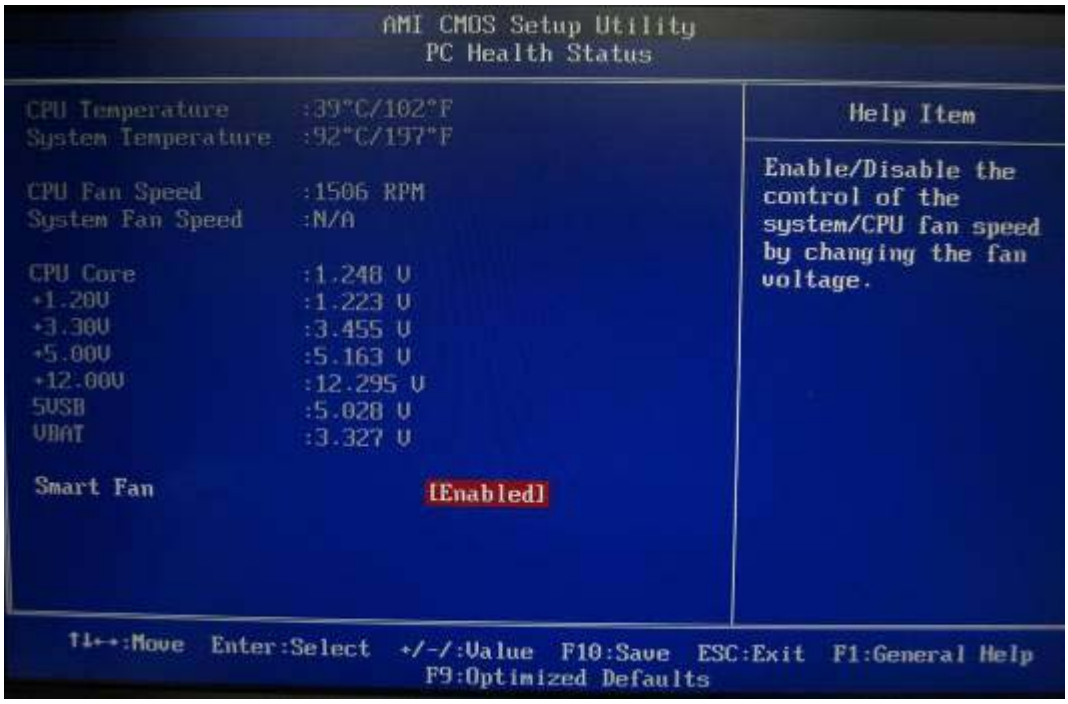
Parameter	Description	Option
Onboard SATA Controller	Enables or disables the onboard SATA controller.	Enabled Disabled
Onboard SATA Mode	Select an operating mode for the onboard SATA.	RAID Native IDE
Onboard USB Controller	Enables or disables the onboard USB controller.	**Enabled** **Disabled**
Legacy USB Support	Enables or disables support for legacy USB devices.	**Enabled** **Disabled**
USB Storage Emulation	Enables or disables support for legacy USB devices.	**Enabled** **Disabled**
Onboard Graphics Controller	Enables or disables the onboard USB controller.	**Enabled** **Disabled**
Onboard Graphics Mode	select a mode of the onboard graphics	**UMA**
Onboard Audio Controller	Enables or disables the onboard audio controller.	**Enabled** **Disabled**
Onboard LAN Controller	Enables or disables the onboard LAN controller.	**Enabled** **Disabled**
Onboard LAN Option ROM	Enables or disables the load of embedded option ROM for onboard network controller.	**Enabled** **Disabled**
Onboard Floppy Controller	Enables or disables the onboard Floppy controller.	**Enabled** **Disabled**
Serial Port1 Address	select a port base on address	**3F8/IRQ4**
Serial Port1 Mode	select the mode	**Normal**
Serial Port2 Address	select a port base on address	**2F8/IRQ3**
Serial Port2 Mode	select the mode	**Normal**
Parallel Port Address	select a port base on address	**378**
Parallel Port Mode	select the mode	**Normal**

Power Management Setup



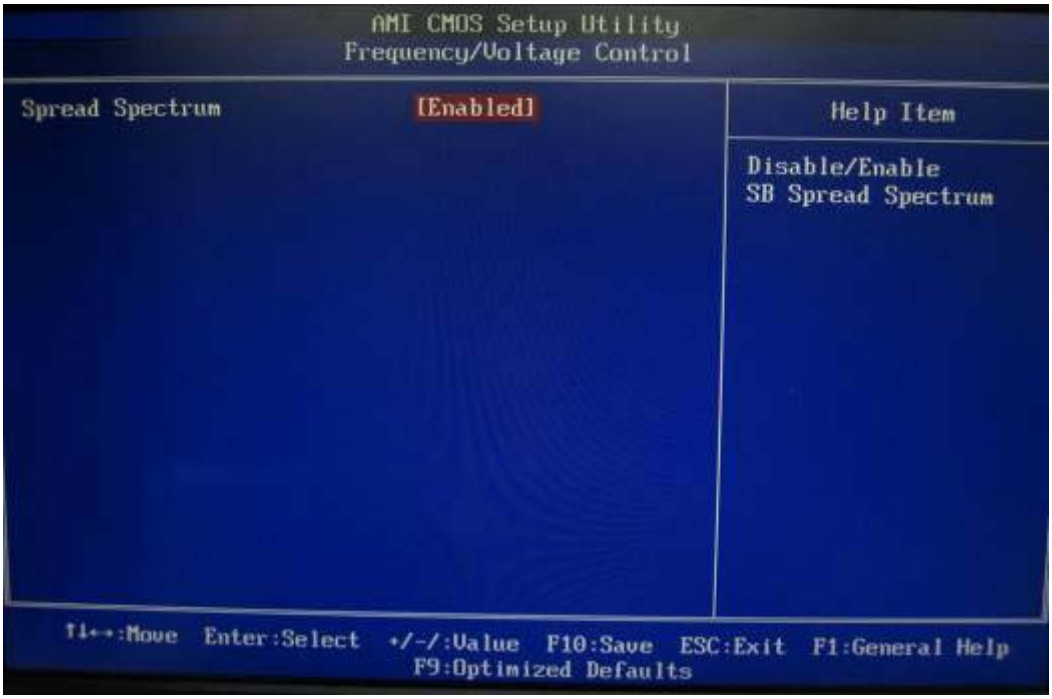
Parameter	Description	Option
ACPI Suspend Mode	Select an ACPI state.	**S3 (STR)** **S1 (POS)**
Deep power off mode	Select the Deep power off Mode	**Enabled** **Disabled**
Power On by RTC Alarm	Enables or Disables to wake up the system by RTC Alarm Function	**Enabled** **Disabled**
Power On by PCIE Devices	Enables or disables to wake up the system from a power saving mode through an event on PCI Express device.	**Enabled** **Disabled**
Power On by PCI Devices	Enables or disables to wake up the system from a power saving mode through an event on PCI device.	**Enabled** **Disabled**
Power On by Modem Ring	Enables or disables to wake up the system from a power saving mode through Modem Ring.	**Enabled** **Disabled**
Wake Up by PS/2 KB/Mouse	Enables or disables to wake up the system from a power saving mode using a PS2 keyboard or mouse.	**Enabled** **Disabled**
Wake Up by USB KB/Mouse	If enabled, press any key or click the mouse will wake system from S1/S3 state.	**Enabled** **Disabled**
Restore On AC Power Loss	Enables or disables the system to reboot after a power failure or interrupt occurs.	Power Off Power On Last State

PC Health Status



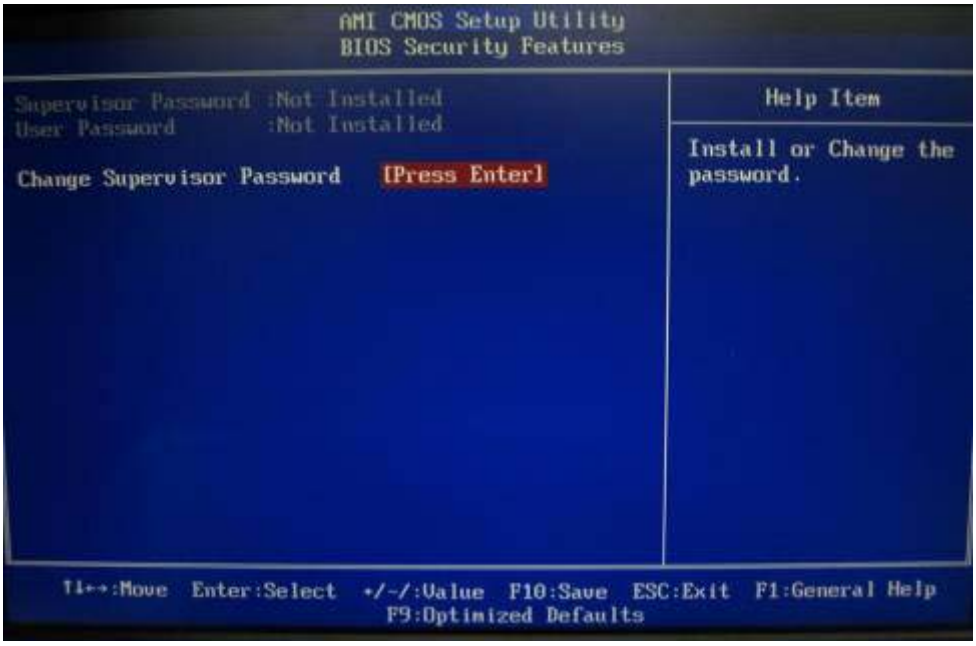
Parameter	Description	Option
system Shutdown Temperature	Select the system Shutdown Temperature	**Enabled** **Disabled**
CPU Shutdown Temperature	Select the system Shutdown Temperature	**Enabled** **Disabled**
Smart FAN	Enables or disables the smart system fan control function.	**Enabled** **Disabled**

Frequency/Voltage Control



Parameter	Description	Option
Spread Spectrum	Enables or disables the reduction of the mainboard's EMI. Note: Remember to disable the Spread Spectrum feature if you are overclocking. A slight jitter can introduce a temporary boost in clock speed causing the overclocked processor to lock up.	**Enabled** **Disabled**

BIOS Security Features



Parameter	Description
Supervisor Password	Indicates the status of the supervisor password.
User Password	Indicates the status of the user password.
Change Supervisor Password	Supervisor password prevents unauthorized access to the BIOS Setup Utility. Press Enter to change the Supervisor password.

Setting a supervisor password

1. Use the up/down arrow keys to select Change Supervisor Password menu then press **Enter**.

   A password box will appear.
2. Type a password then press **Enter**.

   The password may consist up to six alphanumeric characters (A-Z,a-z,0-9)
3. Retype the password to verify the first entry then press **Enter** again.
4. Press **F10**.
5. Select **Yes** to save the new password and close the Setup Utility.

Changing the supervisor password

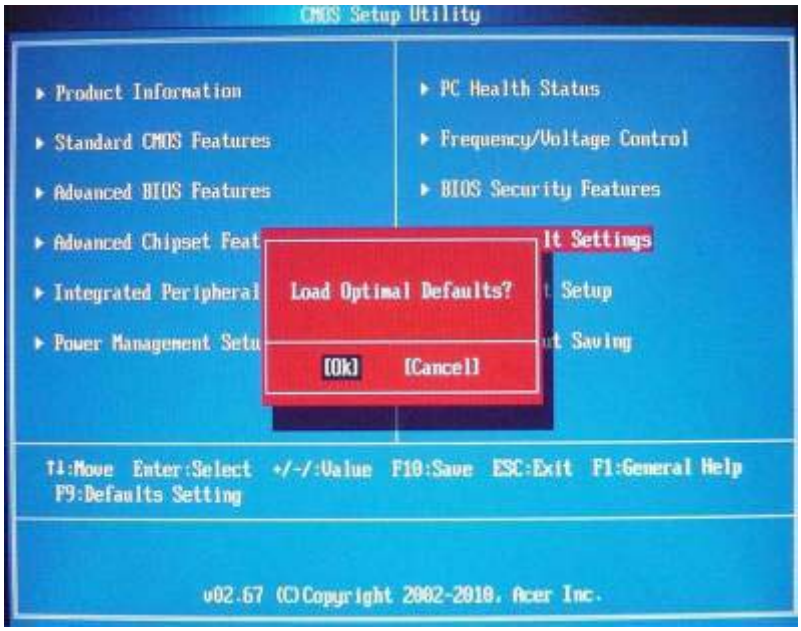
1. Use the up/down arrow keys to select Change Supervisor Password menu then press **Enter**.
2. Type the original password then press **Enter**.
3. Type a new password then press **Enter**.
4. Retype the password to verify the first entry then press **Enter** again.
5. Press **F10**.
6. Select **Yes** to save the new password and close the Setup Utility.

Removing a supervisor password

1. Use the up/down arrow keys to select Change Supervisor Password menu then press **Enter**.
2. Enter the current password then press **Enter**.
3. Press **Enter** twice without entering anything in the password fields.

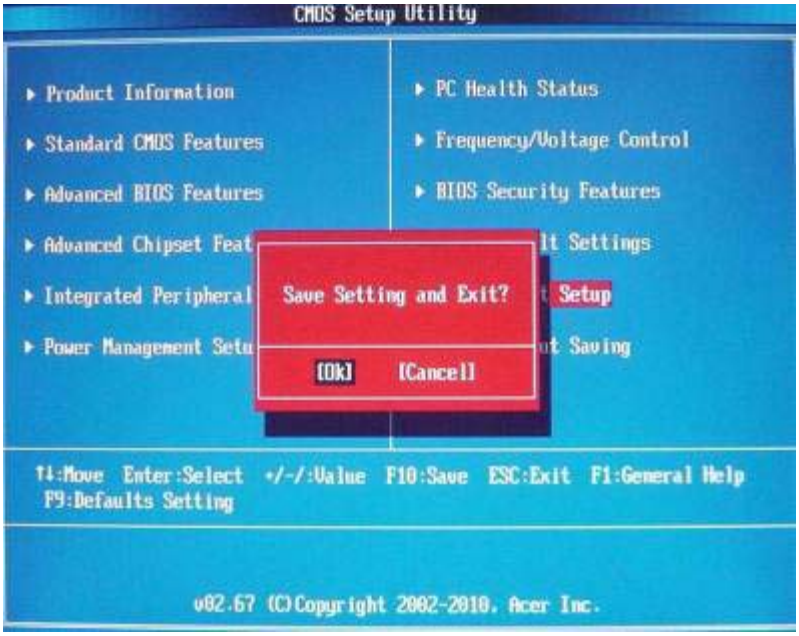
Load Default Settings

The Load Default Settings menu allows you to load the default settings for all BIOS setup parameters. Setup defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly.



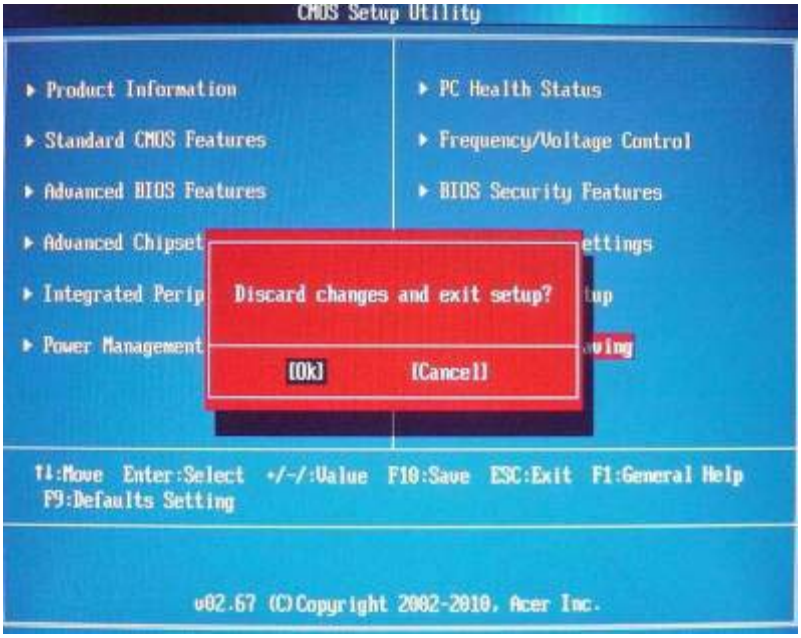
Save & Exit Setup

The Save & Exit Setup menu allows you to save changes made and close the Setup Utility.



Exit Without Saving

The Exit Without Saving menu allows you to discard changes made and close the Setup Utility.



System Disassembly and Assembly

This chapter contains step-by-step procedures on how to disassemble and assembly the desktop computer for maintenance and troubleshooting.

Disassembly Requirements

To disassemble the computer, you need the following tools:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge
- Flat-blade screwdriver
- Philips screwdriver
- Hex screwdriver
- Plastic flat-blade screwdriver
- Plastic tweezers

NOTE: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

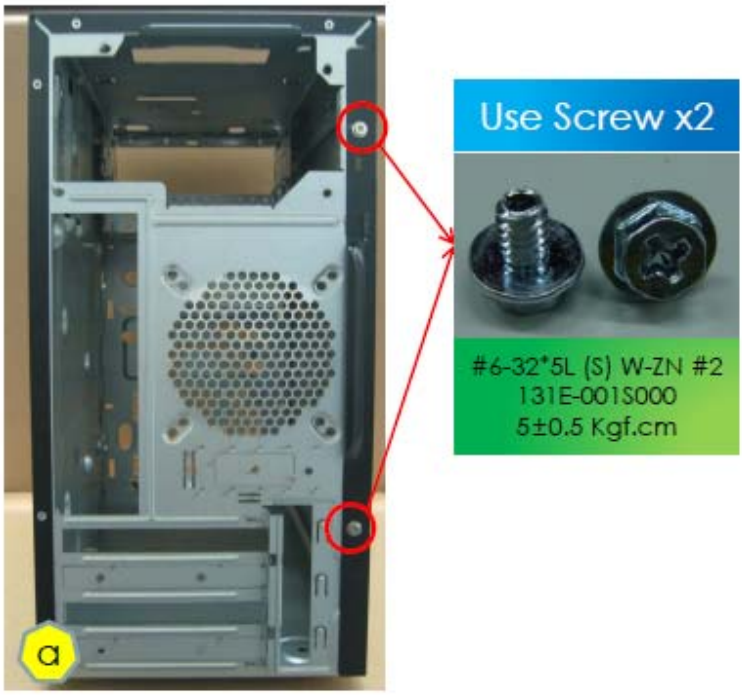
Pre-disassembly Procedure

Before proceeding with the disassembly procedure, perform the steps listed below:

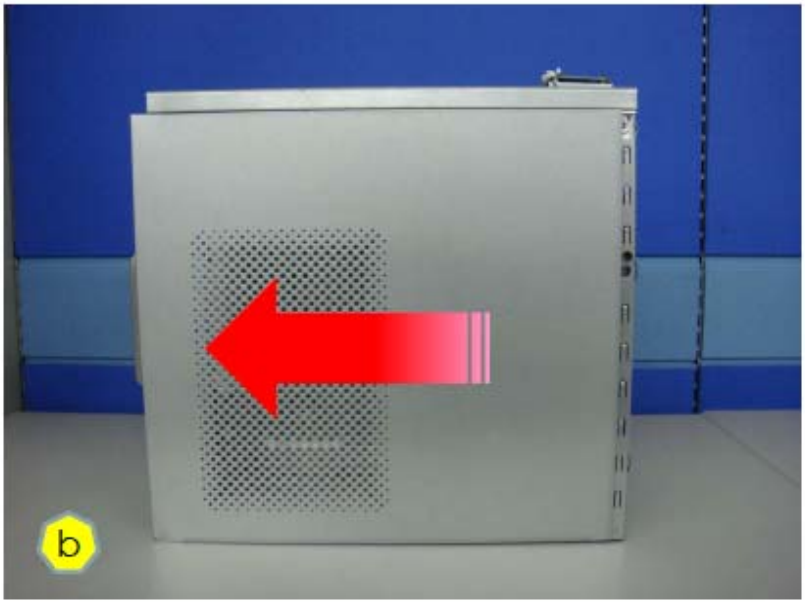
1. Turn off the system and all the peripherals connected to it.
2. Unplug the power cord from the power outlets.
3. Unplug the power cord from the system.
4. Unplug all peripheral cables from the system.
5. Place the system unit on a flat, stable surface.

Removing the Side Panel

a. Loose screw x 2.(5±0.5 Kgf.cm)

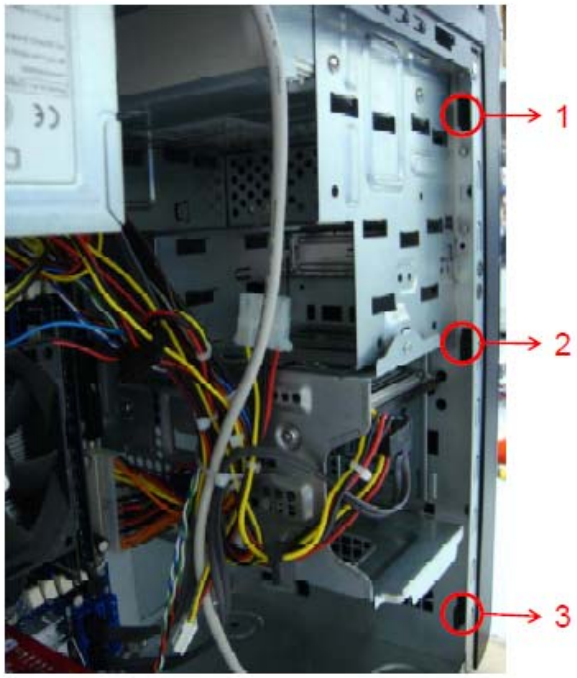


b. Remove left side panel and take out it.

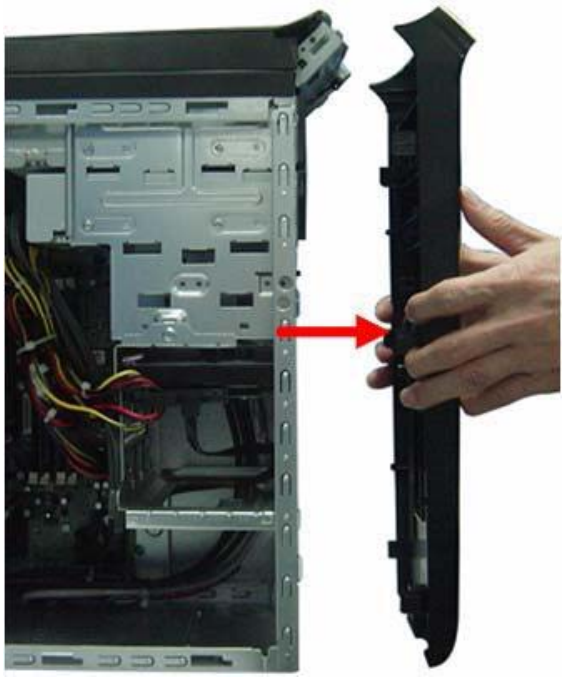


Removing the Front Bezel

a. Release the front bezel retention tabs from the chassis interior.

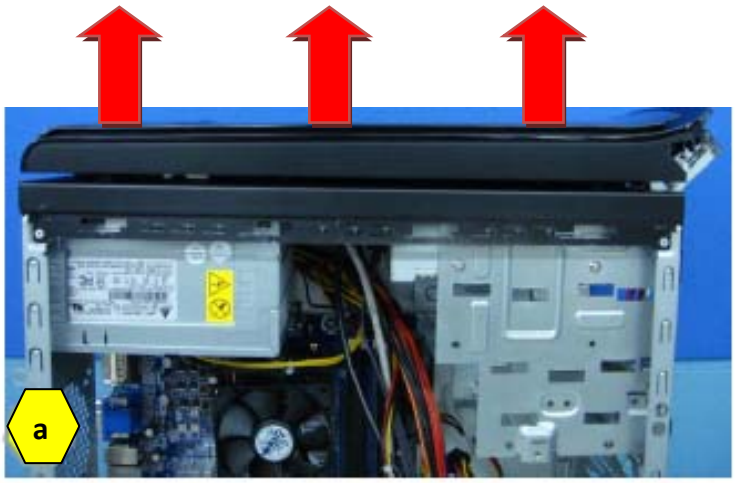


b. Pull the bezel away from the chassis.

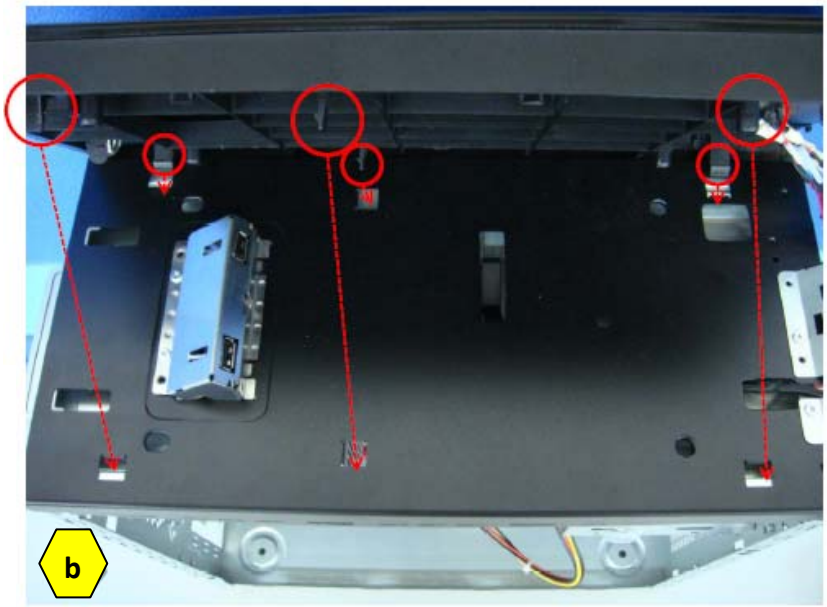


Removing the Top Bezel

a. Pull the Top Bezel away from the Chassis.



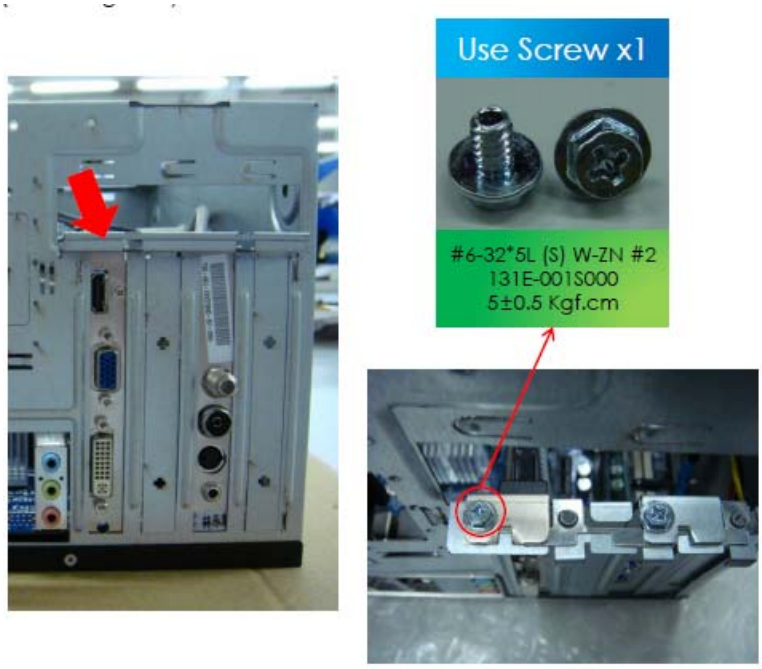
b. Release the top bezel retention tabs from the chassis interior.



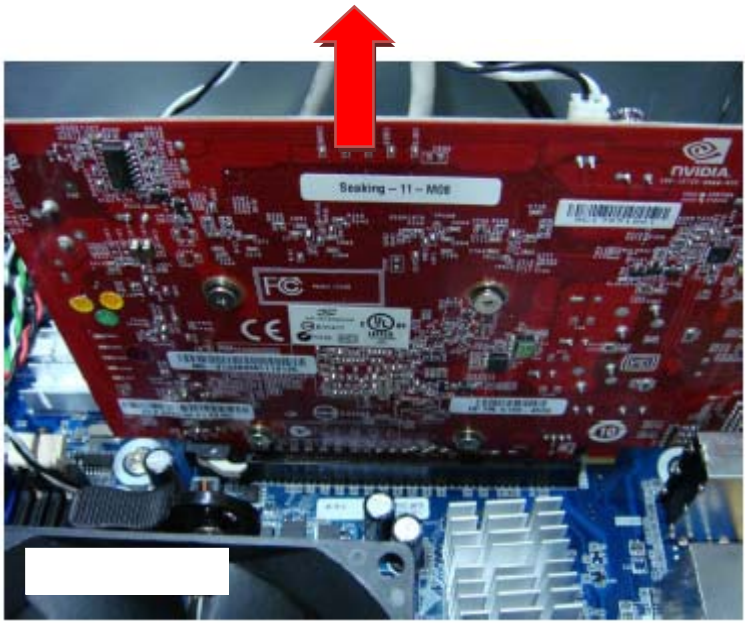
Removing the VGA Card

a. Releasing cover slot.

b. Remove the screw that secures the card to the chassis.

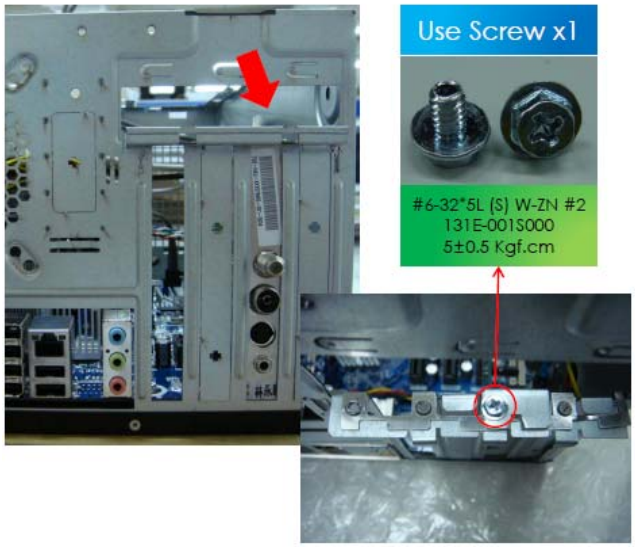


c. Gently pull the card to remove it from the main board (PCI-E x16).

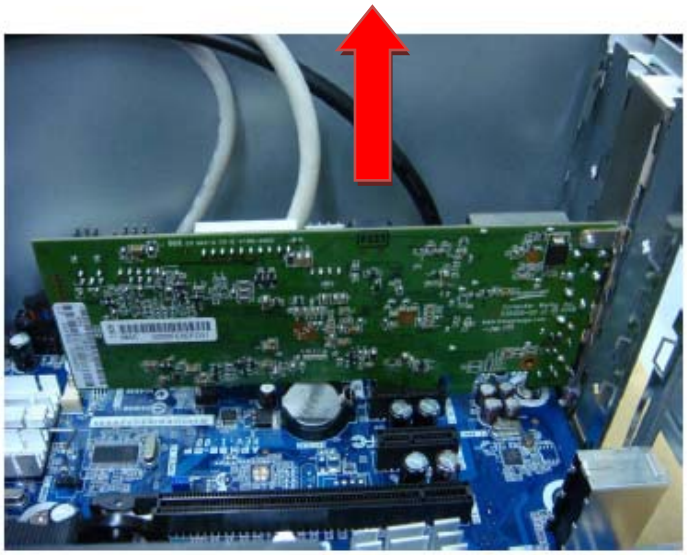


Removing the TV Card

a. Remove the screw that secures the card to the chassis.

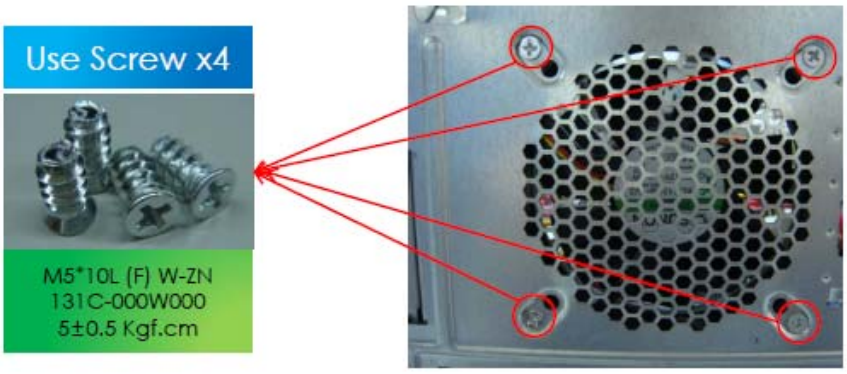


b. Gently pull the card to remove it from the main board (PCI-E x1).

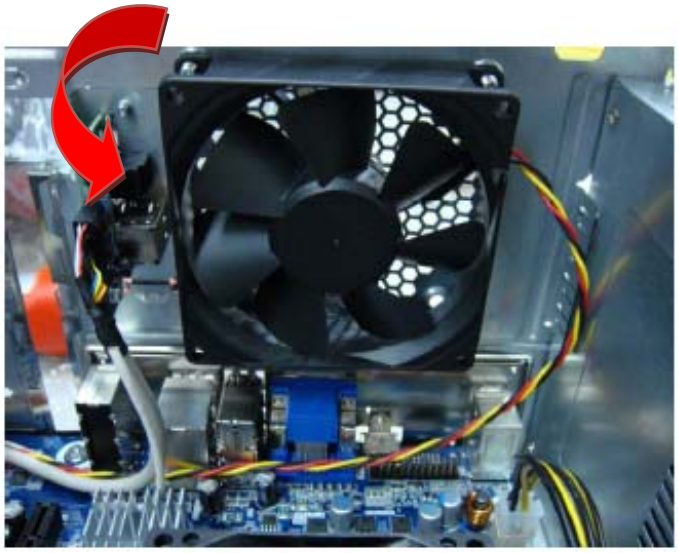


Removing the System Fan

a. Removing the four screws that secures the system fan to the chassis.



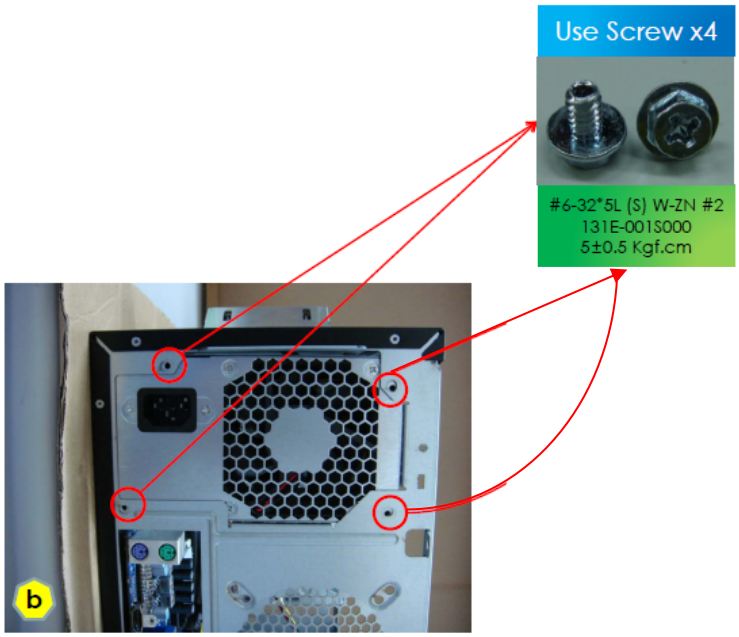
b. Take out the system fan from the chassis.



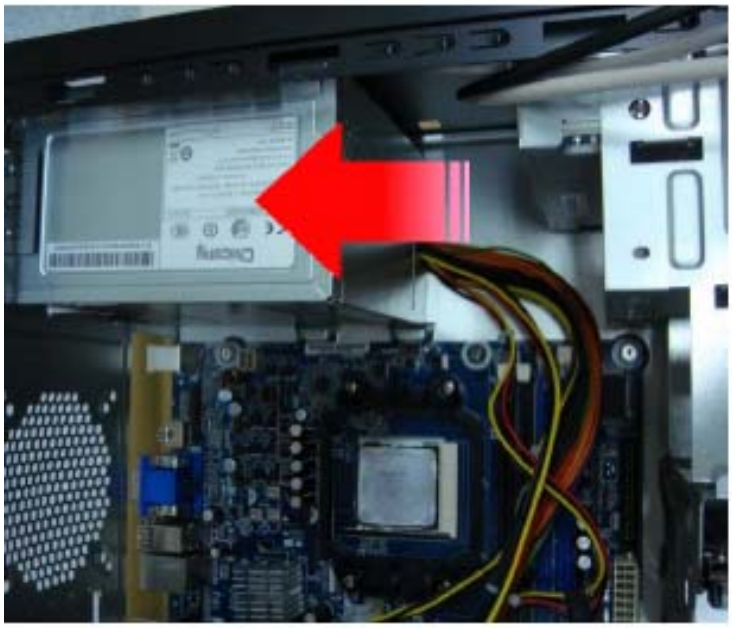
Removing the Power Supply

a. Disconnect the 4-pin and 24-pin power supply cables from the main board.

b. Remove the screw that secures the power supply to the chassis.

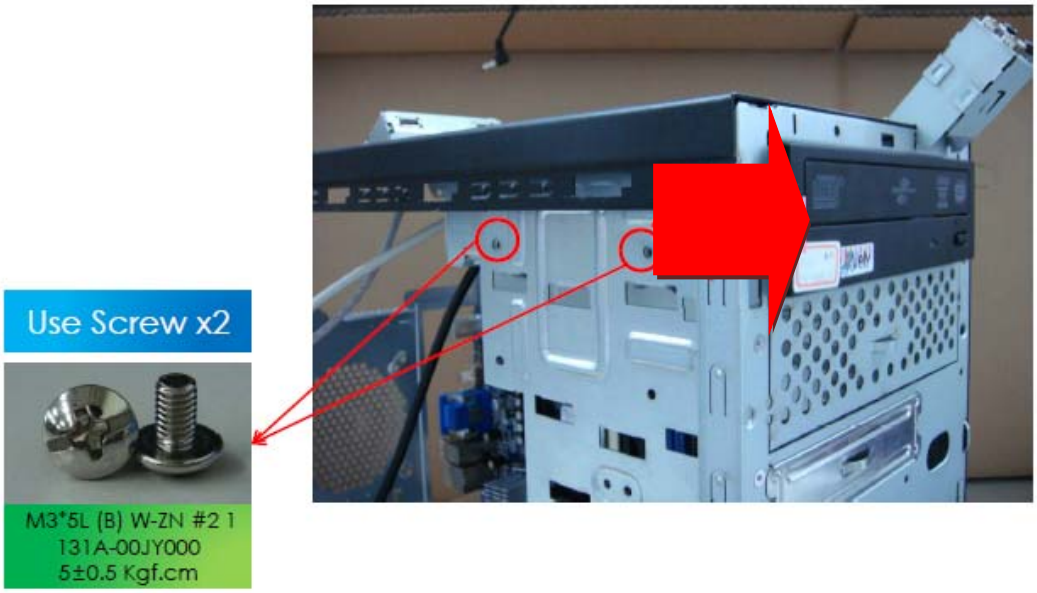


c. Lift the power supply module out of the chassis.



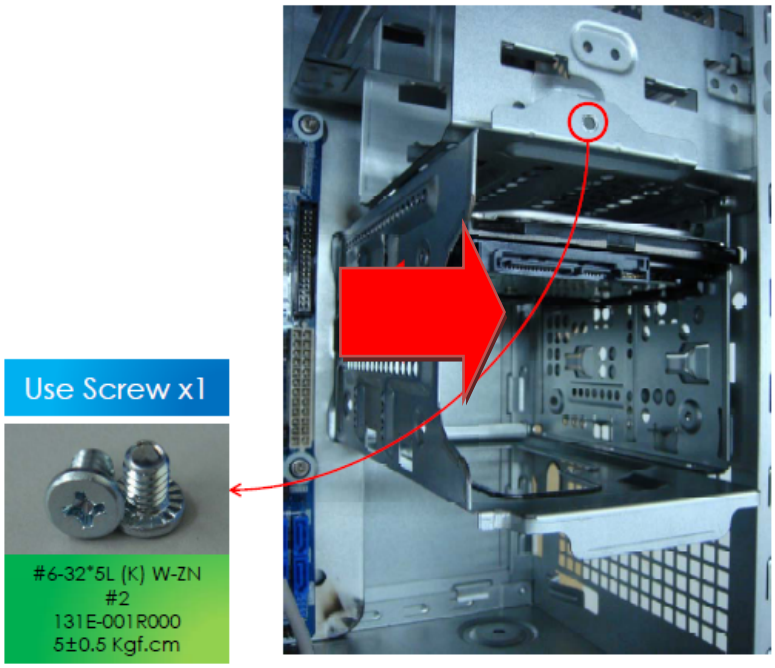
Removing the Optical Drive

a. Remove the two screws that secure the main board to the chassis..

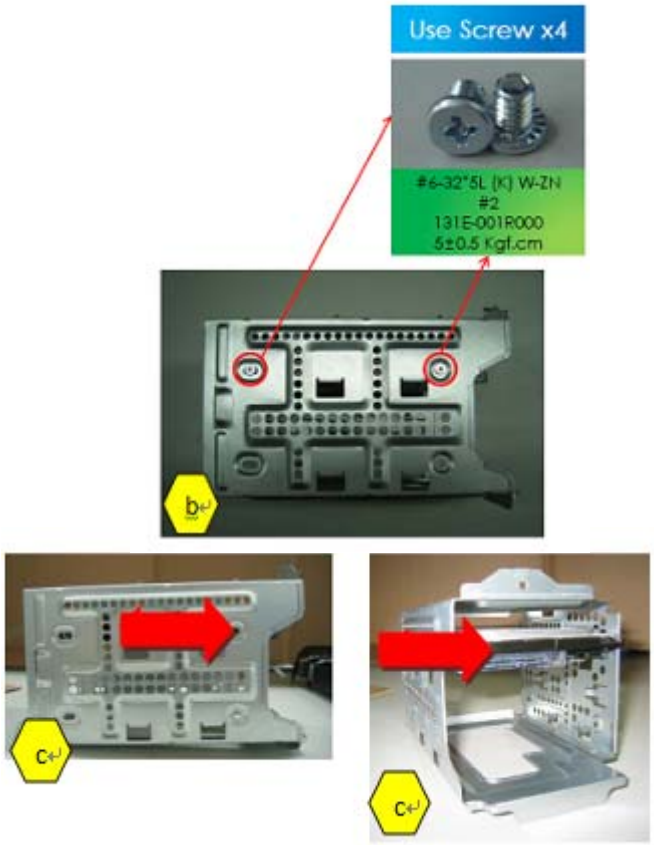


Removing the Hard Disk Drive

a. Release the two screws that secure the HDD bracket to the chassis.

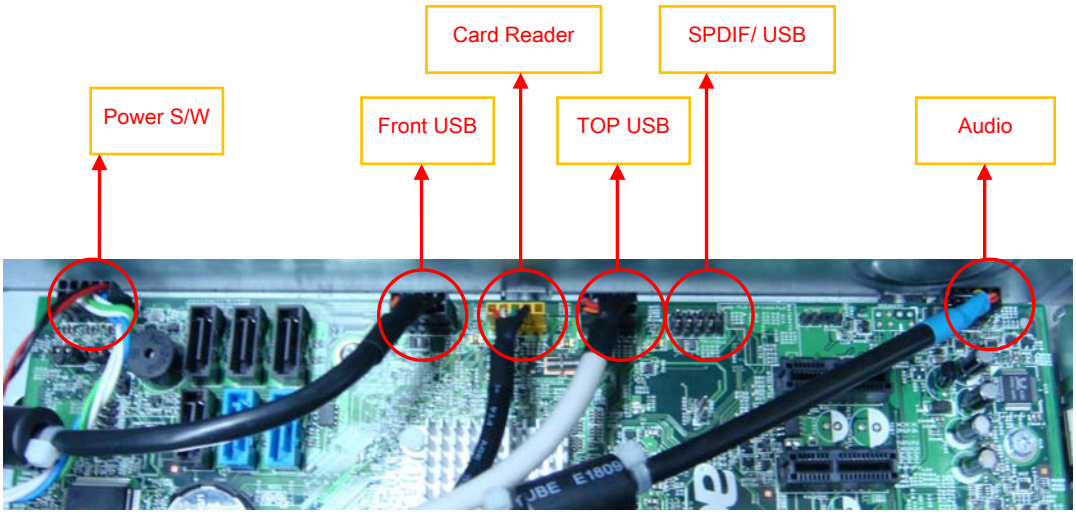


b. Remove the two screws that secure HDD to the HDD bracket.

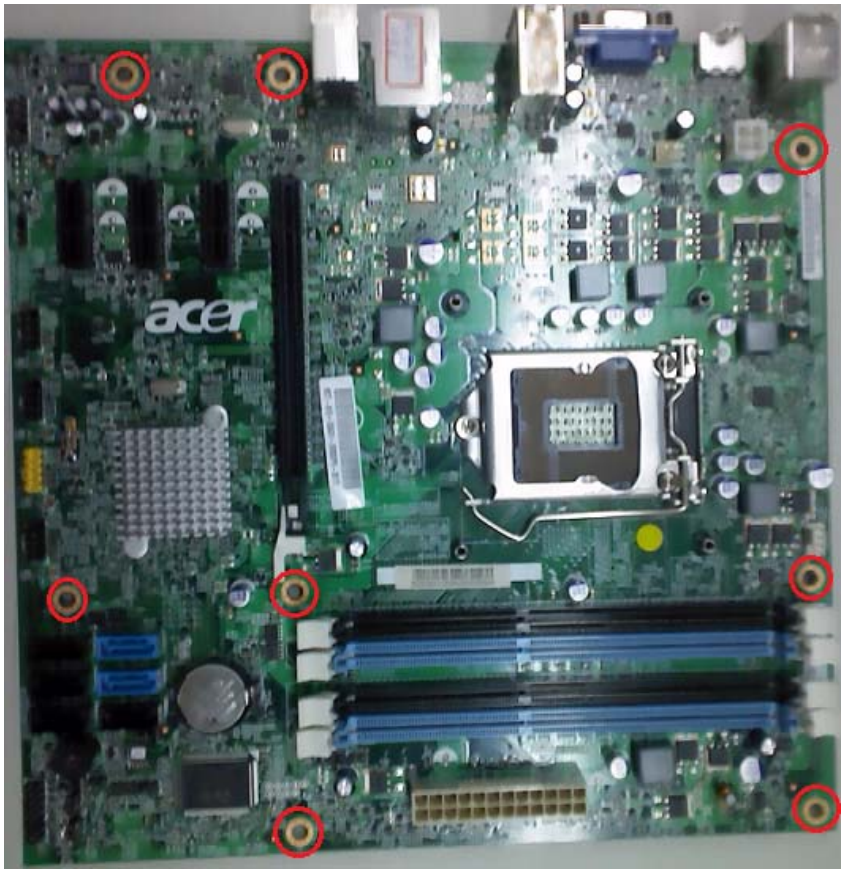


Removing the Main board

a. Disconnect the cable from the main board .



b. Remove the seven screws that secure the main board to the chassis.

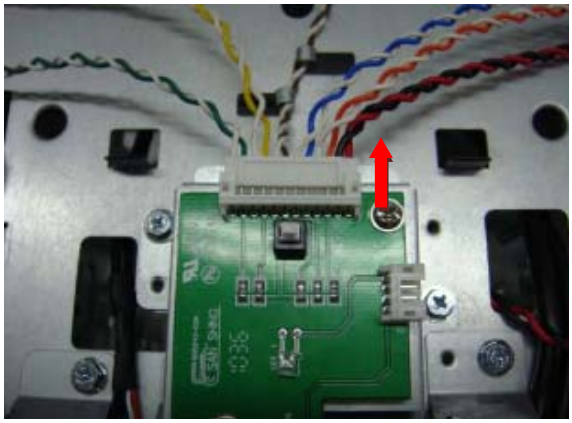


c. Punching in IO Shield then you can remove it.

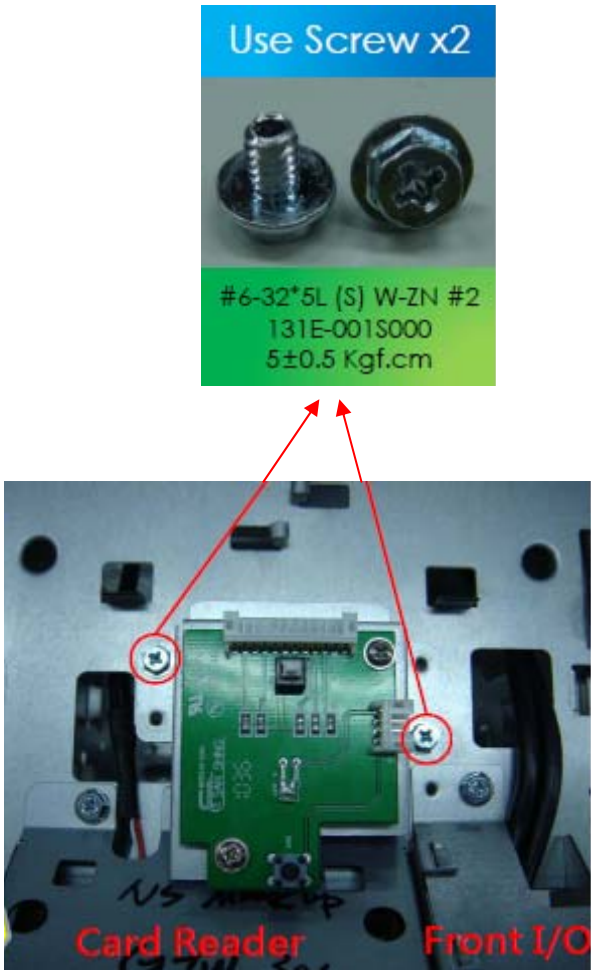
.

Removing the Light Board Module and LED Cable

a. Release LED cable from the chassis interior.

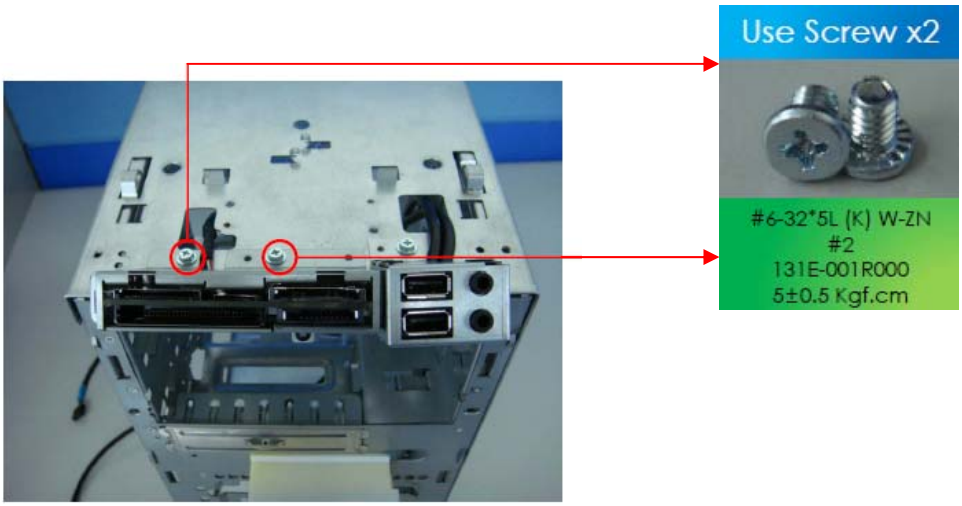


b. Remove the two screws that secure the light board to the chassis.

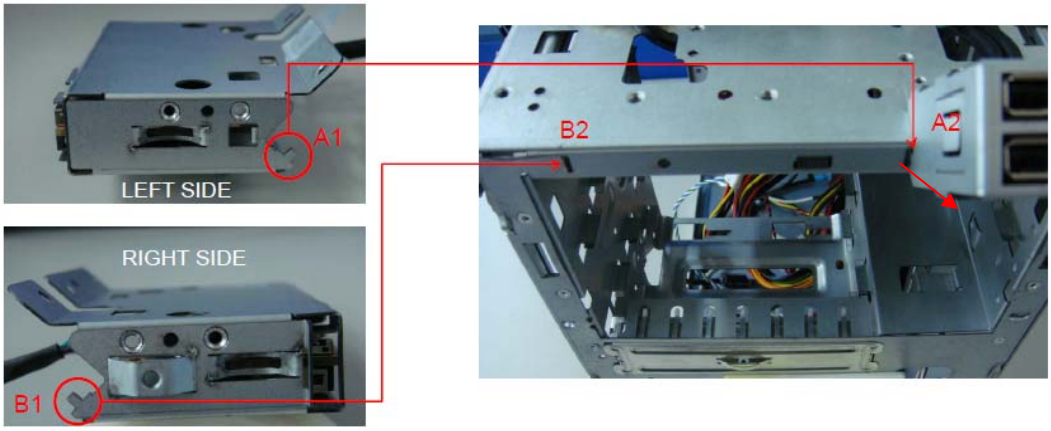


Removing the Card Reader and LED Cable Assembly

a. Remove the two screws that secure the bracket to the chassis.

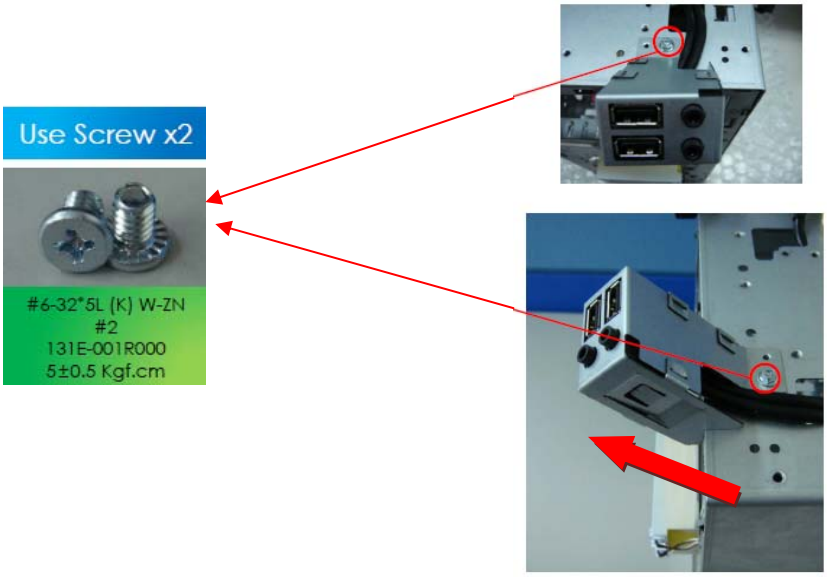


b. Remove the card reader away from chassis.



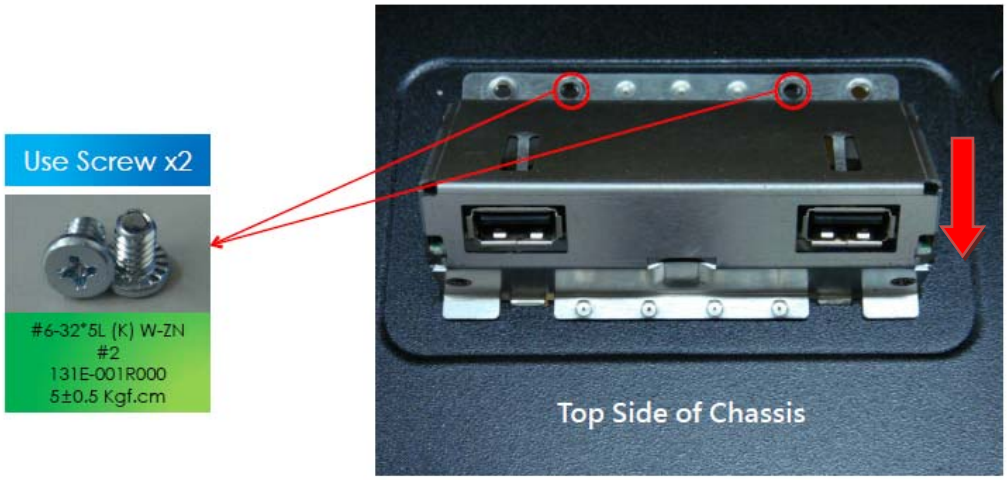
Removing the Front I/O Module

a. Remove the screws that secure the bracket to the chassis.



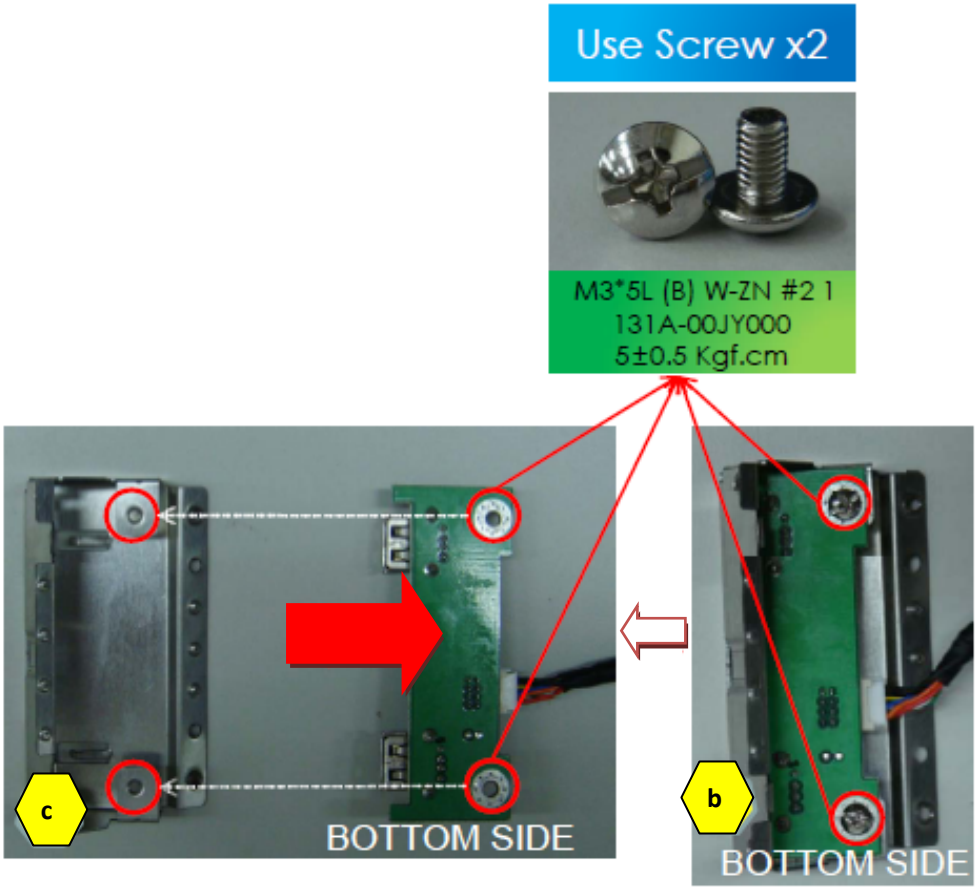
Removing the Top USB Module

a. Remove the two screws that secure the bracket to the chassis.



b. Remove the two screws that secure the USB board to the bracket.

c. Remove the USB board then lift the USB board out of bracket.



d. Disconnet the USB cable away from USB board.

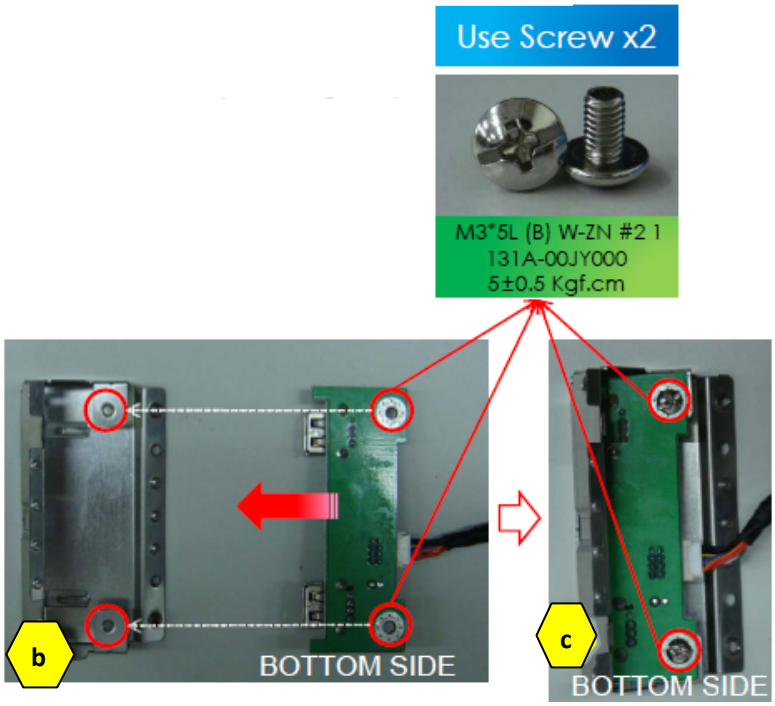
Disassembly Procedure

Assembly the Top USB Module

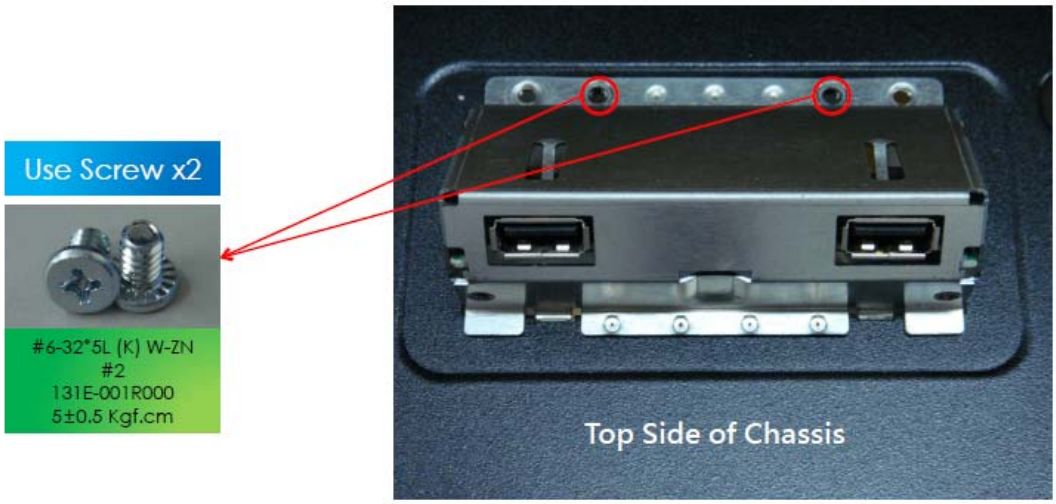
a. Connet the USB cable to USB board.

b. Assembly the USB board with bracket.

c. Assembly the two screws that secure the USB board to the bracket.

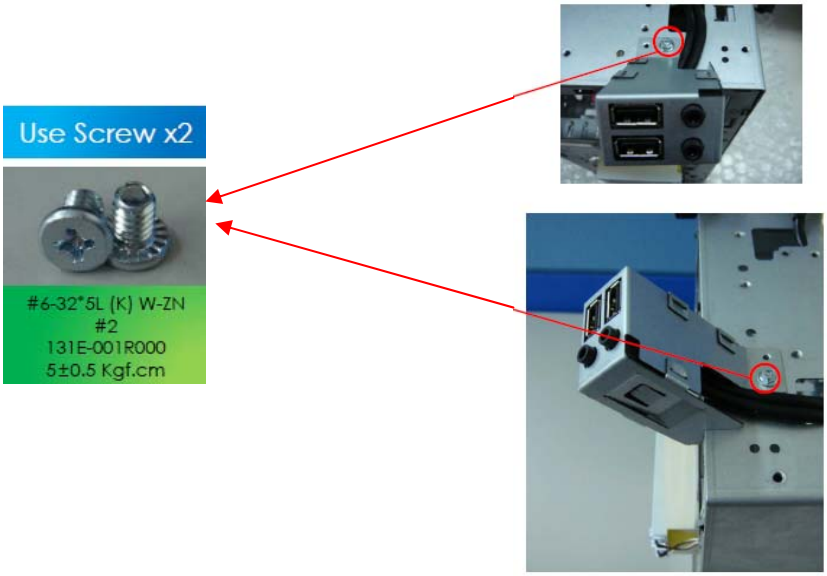


d. Put top USB module into the top side of chassis and fix two screws.



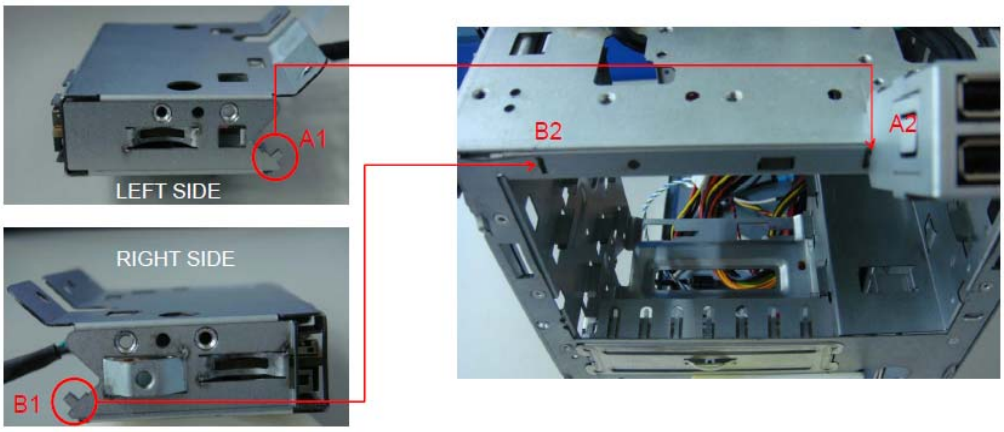
Assembly the Front I/O Module

a. Put front I/O module into the top side of chassis and fix 1 screw.



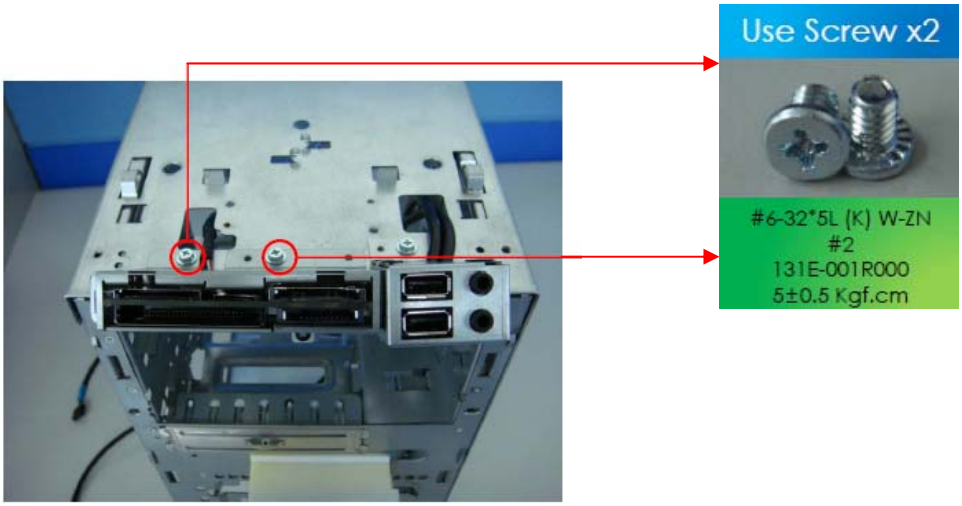
Assembly the Card Reader and LED Cable Assembly

a. Put card reader module into the front side of chassis and A1 hook to A2 holes / B1 hook to B2 holes.



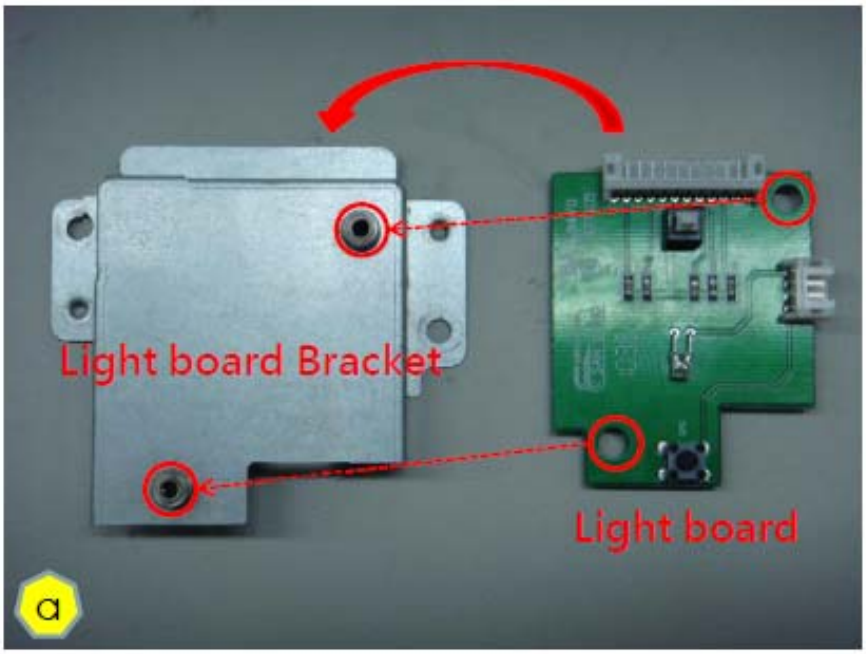
b. Fix 2 screws to add the bracket to the chassis

.

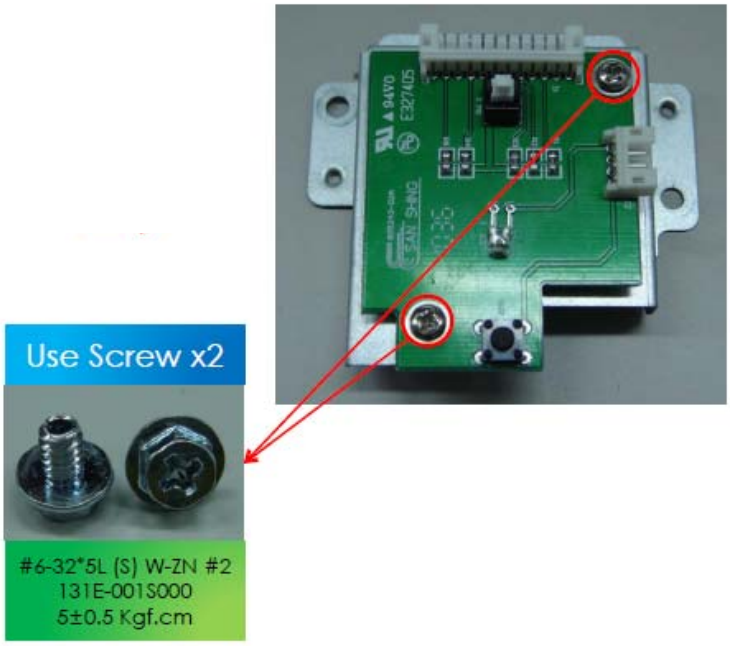


Assembly the Light Board Module and LED Cable

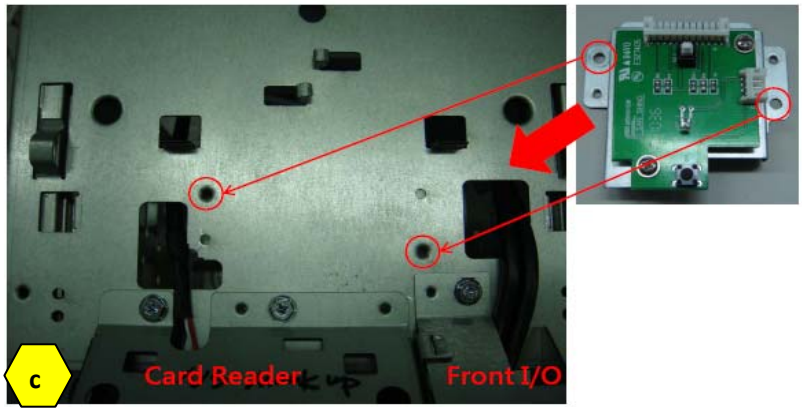
a. Put Light board to Light board bracket along the arrow.



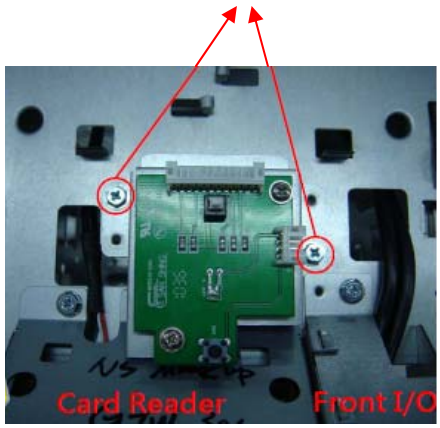
b. Fix 2 screws.



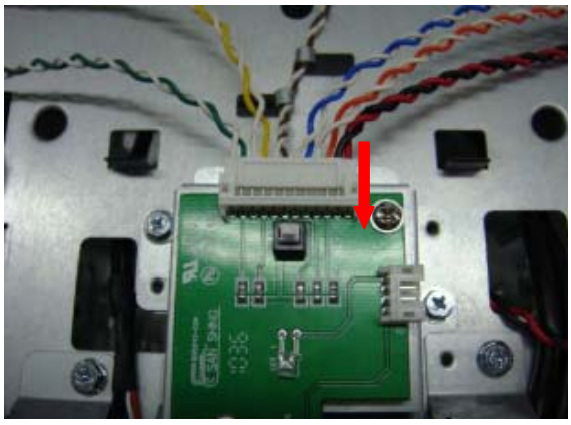
c. Put Light board module into the top side of chassis



d. Fix 2 screws.



e. Add the LED cable



Assembly the Main Board

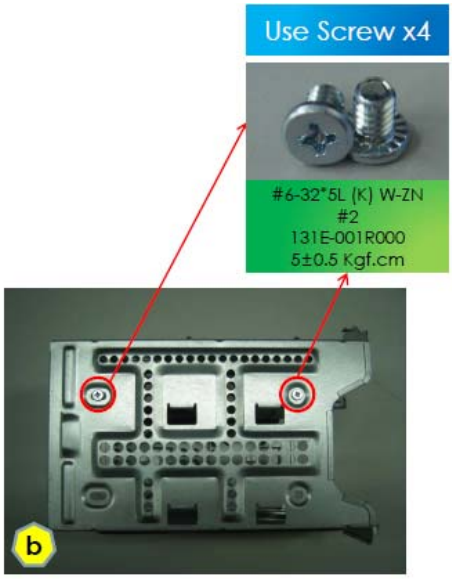
a. Put Real I/O shielding to chassis.

b. Fix 8 screws in chassis.

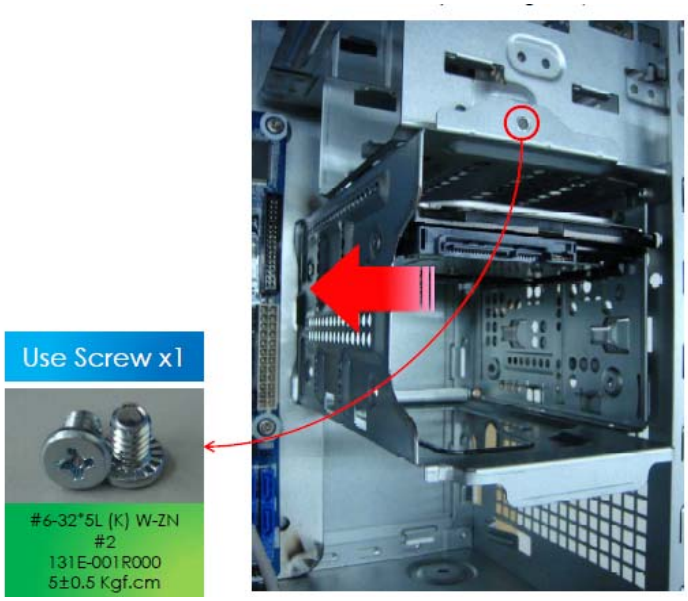
Assembly the Hard Disk Drive

a. Put HDD in the cage along the arrow.

b. Fix screws x4 (5±0.5 Kgf.cm) on the cage.

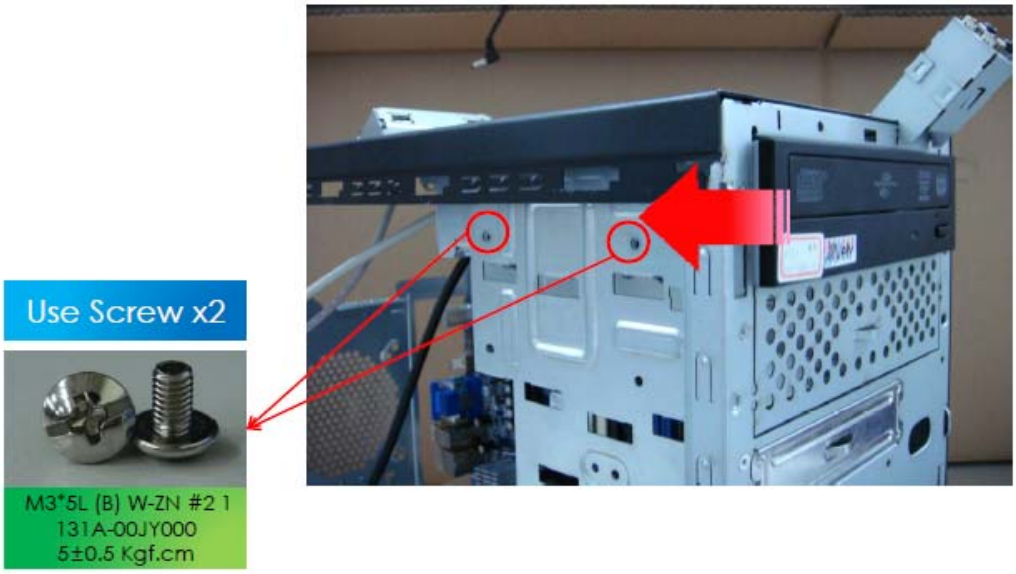


c. Push HDD bracket along the arrow and fix 1 screw.



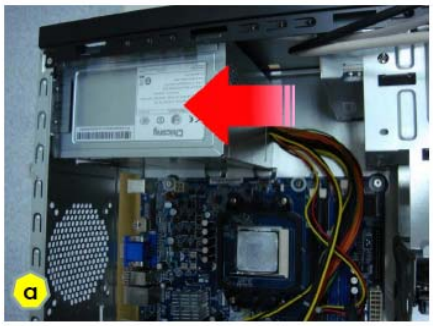
Assembly the Optical Drive

a. Push ODD along the arrow and fix screws x2 on the chassis.

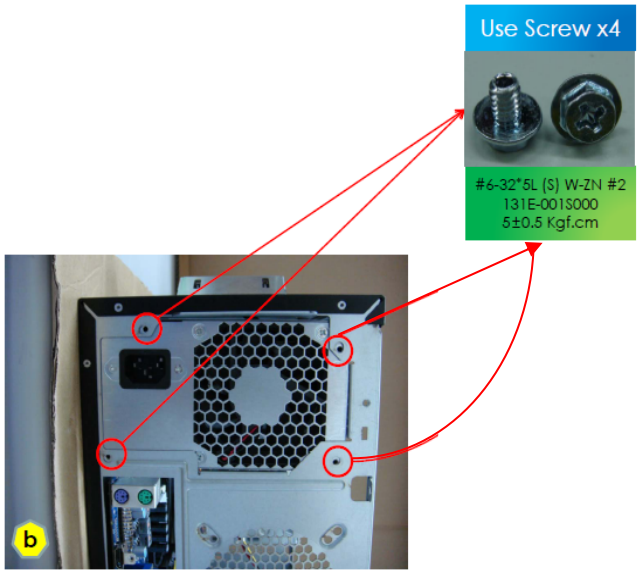


Assembly the Power Supply

a. Disconnect the 4-pin and 24-pin power supply cables from the main board.



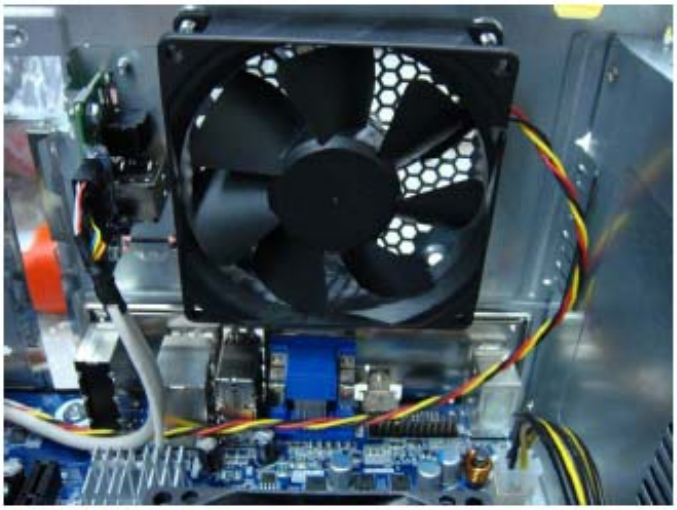
b. Remove the screw that secures the power supply to the chassis.



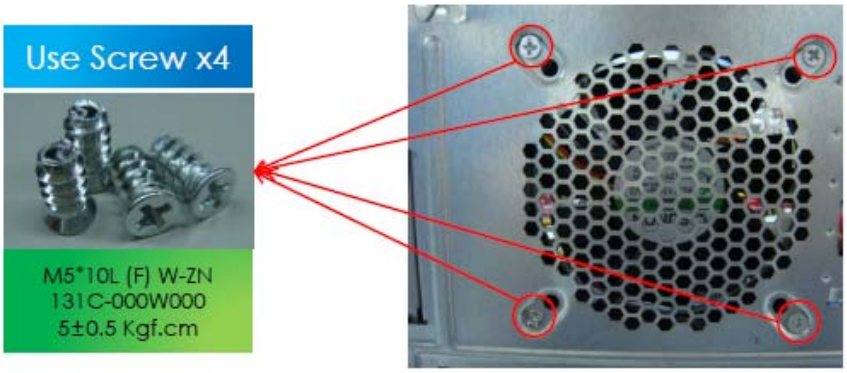
c. Connect 24 pin main power and 4 pin power cable to MB.

Assembly the system Fan

a. Put System fan into chassis

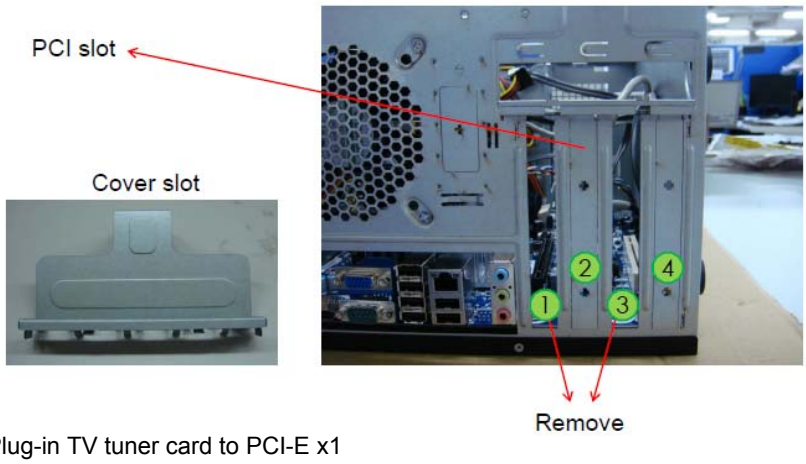


b. Fix 4 screws.



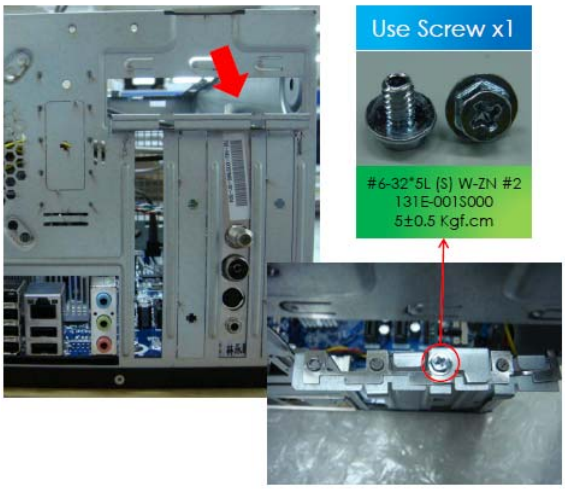
Assembly the TV Card

a. Remove cover slot lock and PCI slot 1、3.



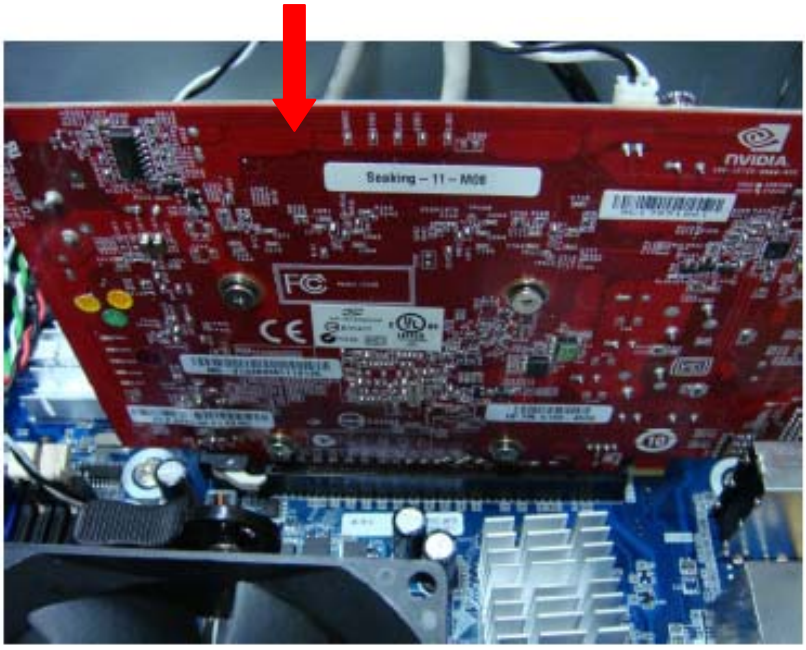
b. Plug-in TV tuner card to PCI-E x1

c. Fix 1 screw. .

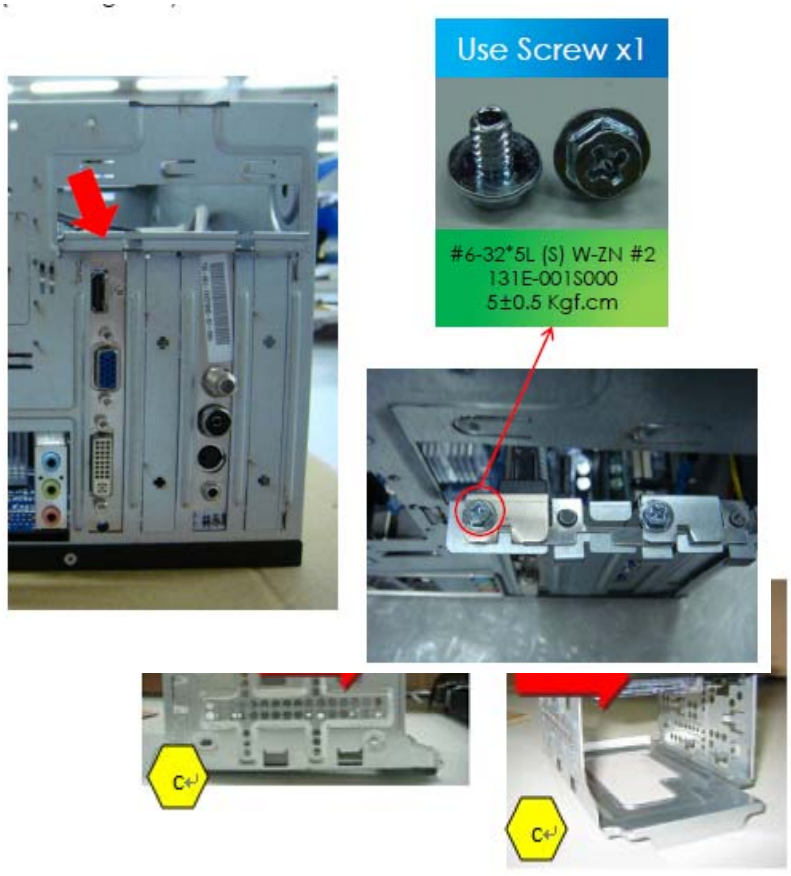


Assembly the VGA Card

a. Plug-in VGA card to PCI-E x16.

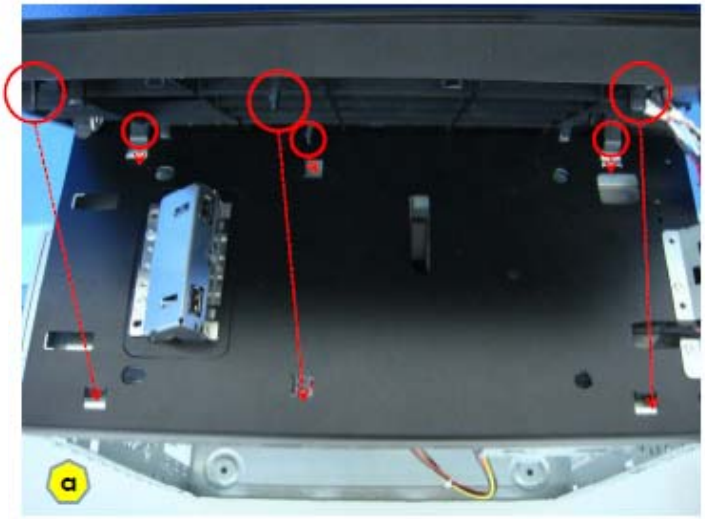


b. Fix 1 screw.



Assembly the Top Bezel

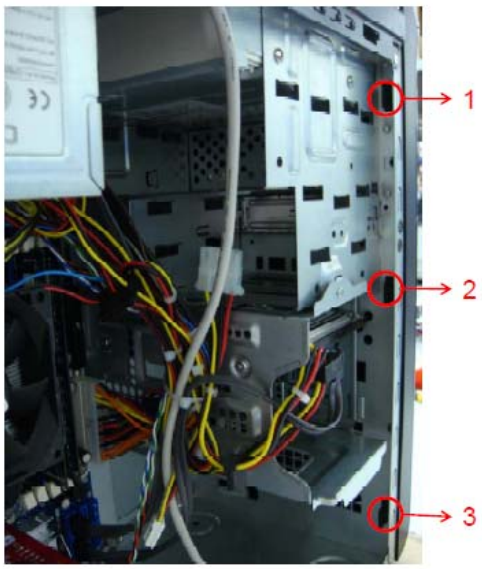
a. Put back the top bezel along the arrow .



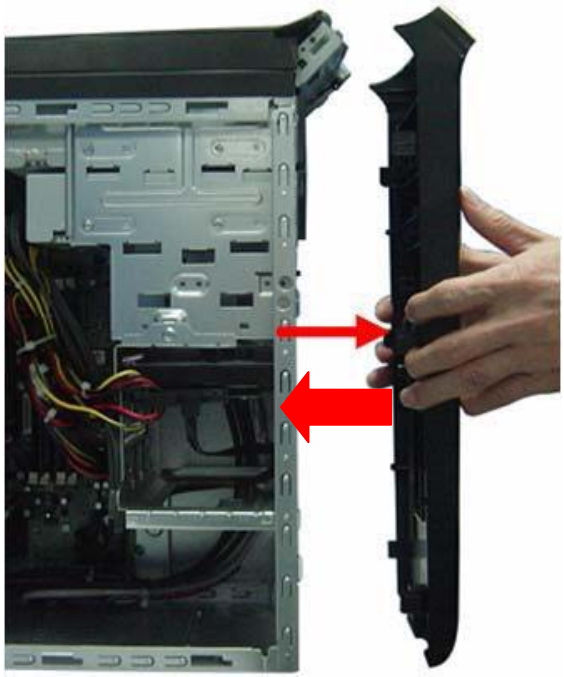
b. Push back the top bezel to chassis.

Assembly the Front Bezel

a. Put back front bezel hook 1,2,3.

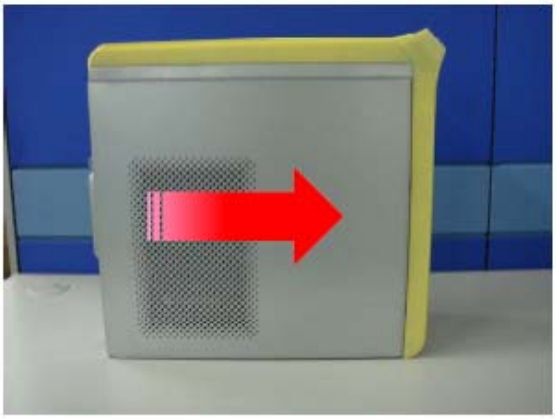


b. Push the front bezel to chassis.



Assembly the Side Panel

a. Recover left side panel.



b. Fix 2 screws.

Chapter 4

System Trouble shooting

This chapter provides instructions on how to trouble shoot system hardware problems.

Hardware Diagnostic Procedure

IMPORTANT: The diagnostic tests described in this chapter are only intended to test Acer products. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.

1. Obtain the failing symptoms in as much detail as possible.
2. Verify the symptoms by attempting to recreate the failure by running the diagnostic tests or repeating the same operation.
3. Refer to “Power System check” and “Beep Codes” to determine which corrective action to perform.

System Check Procedures

Power System Check

If the system will power on, skip this section. Refer to System External Inspection.

If the system will not power on, do the following:

- Check if the power cable is properly connected to the system and AC source.
- Check if the voltage selector switchis set to the correct voltage setting.

System External Inspection

1. Inspect the LED indicators on the front panel, which can indicate the malfunction.
2. Make sure that air flow is not blocked.
3. Make sure nothing in the system is making contact that could short out power.
4. If the problem is not evident, continue with System Internal Inspection.

System Internal Inspection

1. Turn off the system and all the peripherals connected to it.
2. Unplug the power cord from the power outlets.
3. Unplug the power cord from the system.
4. Unplug all peripheral cables from the system.
5. Place the system unit on a flat, stable surface.
6. Remove the system covers. For instructions on removing system covers, refer to “System Disassembly”.
7. Verify that components are properly seated.
8. Verify that all cable connectors inside the system are firmly and correctly attached to their appropriate connectors.
9. Verify that all components are Acer-qualified and supported.
10. Replace the system covers.
11. Power on the system.
12. If the problem with the system is not evident, you can try viewing the POST messages and BIOS event logs during the system startup.

Beep Codes

Beep codes are used by the BIOS to indicate a serious or fatal error to the end user. Beep codes are used when an error occurs before the system video has been initialized. Beep codes will be generated by the system board speaker, commonly referred to as the PC speaker.

AMIBIOS displays the checkpoints in the bottom right corner of the screen during POST. This display method is limited, since it only displays checkpoints that occur after the video card has been activated.

Not all computers using AMIBIOS enable this feature. In most cases, a checkpoint card is the best tool for viewing AMIBIOS checkpoints.

System ready	
Symptom: One short beep.	Description: System is OK.
Memory not installed or memory error	
Symptom: Continuous one long beep.	Description: Something is wrong with the memory installed. Note that there could also be something wrong with just accessing the memory (ie the motherboard has a problem).
VGA not installed or VGA error	
Symptom: One long beep, then two short beeps and repeat.	Description: The motherboard is not able to access the video card for some reasons. Either the video card is not working, its memory is not accessible, or its BIOS may be corrupt. This error code could also mean something is wrong with the motherboard.
BIOS damaged	
Symptom: One long beep, then one short beep.	Description: BIOS damaged. Processor jump to BootBlock to execute the default procedure.
CMOS damaged	
Symptom: Two short beeps.	Description: CMOS checksum error.

.

Checkpoints

A checkpoint is either a byte or word value output to I/O port 80h. The BIOS outputs checkpoints throughout bootblock and Power-On Self Test (POST) to indicate the task the system is currently executing. Checkpoint sare very useful in aiding software developers or technicians in debugging problems that occur during the pre-boot process.

Viewing BIOS checkpoints

Viewing all checkpoints generated by the BIOS requires acheckpoint card, also referred to as a POST card or POST diagnostic card. These are ISA or PCI add-in cards that show the value of I/O port 80h on a LED display. Checkpoints may appear on the bottom right corner of the screen during POST. This display method islimited, since it only displays checkpoints that occur after the video card has been activated.

Bootblock Initialization Code Checkpoints

The Bootblock initialization code sets up the chipset, memory, and other components before system memory is available. The following table describes the type of checkpoints that may occur during the bootblock initialization portion of the BIOS.

NOTE: Please note that checkpoints may differ between different platforms based on system configuration. Checkpoints may change due to vendor requirements, system chipset or option ROMs from add-in PCI devices.

Checkpoint	Description
Before D0	If boot block debugger is enabled, CPU cache-as-RAM functionality is enabled at this point. Stack will be enabled from this point.
D0	Early Boot Strap Processor (BSP) initialization like microcode update, frequency and other CPU critical initialization. Early chipset initialization is done.
D1	Early super I/O initialization is done including RTC and keyboard controller. Serial port is enabled at this point if needed for debugging. NMI is disabled. Perform keyboard controller BAT test. Save power-on CPUID value in scratch CMOS. Go to flat mode with 4GB limit and GA20 enabled.
D2	Verify the boot block checksum. System will hang here if checksum is bad.
D3	Disable CACHE before memory detection. Execute full memory sizing module. If memory sizing module not executed, start memory refresh and do memory sizing in Boot block code. Do additional chipset initialization. Re-enable CACHE. Verify that flat mode is enabled.
D4	Test base 512KB memory. Adjust policies and cache first 8MB. Set stack.
D5	Bootblock code is copied from ROM to lower system memory and control is given to it. BIOS now executes out of RAM. Copies compressed boot block code to memory in right segments. Copies BIOS from ROM to RAM for faster access. Performs main BIOS checksum and updates recovery status accordingly.
D6	Both key sequence and OEM specific method is checked to determine if BIOSrecovery is forced. Main BIOS checksum is tested. If BIOS recovery is necessary,control flows to checkpoint E0. See Bootblock Recovery Code Checkpoints sectionfor more information.
D7	Restore CPUID value back into register. The Bootblock-Runtime interface module is moved to system memory and control is given to it. Determine whether to execute serial flash.
D8	The Runtime module is uncompressed into memory. CPUID information is stored in memory.
D9	Store the Uncompressed pointer for future use in PMM. Copying Main BIOS into memory. Leaves all RAM below 1MB Read-Write including E000 and F000 shadow areas but closing SMRAM.

Checkpoint	Description
DA	Restore CPUID value back into register. Give control to BIOS POST (ExecutePOSTKernel).See POST Code Checkpoints section of document for more information.
DC	System is waking from ACPI S3 state.
E1-E8 ECEE	OEM memory detection/configuration error. This range is reserved for chipset vendors & system manufacturers. The error associated with this value may be different from one platform to the next.

Bootblock Recovery Code Checkpoints

The Bootblock recovery code gets control when the BIOS determines that a BIOS recovery needs to occur because the user has forced the update or the BIOS checksum is corrupt. The following table describes the type of checkpoints that may occur during the Bootblock recovery portion of the BIOS.

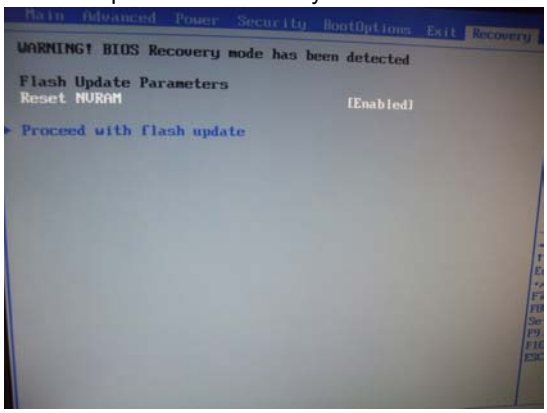
NOTE: Checkpoints may differ between different platforms based on system configuration. Checkpoints may change due to vendor requirements, system chipset or option ROMs from add-in PCI devices.

Checkpoint	Description
E0	Initialize the floppy controller in the super I/O. Some interrupt vectors are initialized. DMA controller is initialized. 8259 interrupt controller is initialized. L1 cache is enabled.
E9	Set up floppy controller and data. Attempt to read from floppy.
EA	Enable ATAPI hardware. Attempt to read from ARMD and ATAPI CDROM.
EB	Disable ATAPI hardware. Jump back to checkpoint E9.
EF	Read error occurred on media. Jump back to checkpoint EB.
F0	Search for pre-defined recovery file name in root directory.
F1	Recovery file not found.
F2	Start reading FAT table and analyze FAT to find the clusters occupied by the recovery file.
F3	Start reading the recovery file cluster by cluster.
F5	Disable L1 cache.
FA	Check the validity of the recovery file configuration to the current configuration of the flash part.
FB	Make flash write enabled through chipset and OEM specific method. Detect proper flash part. Verify that the found flash part size equals the recovery file size.
F4	The recovery file size does not equal the found flash part size.
FC	Erase the flash part
FD	Program the flash part.
FF	The flash has been updated successfully. Make flash write disabled. Disable ATAPI hardware. Restore CPUID value back into register. Give control to F000 ROM at F000:FFF0h.

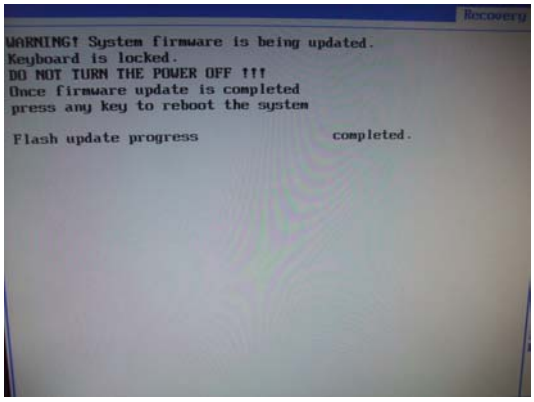
BIOS Recovery

1. Put the BIOS.ROM (like P01-A0) to a bootable USB memory key (Disk on Key,DOK).
2. Install the DOK to the system
3. Press power button to boot the system.
4. The BIOS recovery function will be executed. (you will head a long beep and one short beep)
5. Press <Del> to enter BIOS setup menu when you see the logo and message

6. Press Proceed with flash update start recovery.



7. Wait it compeled



8. ENTER and exit. (Recovery completed.)

Jumper Information

M/B Placement

No.	Label	Description	No.	Label	Description
1	CPU socket	AM3 socket for CPU	2	DIMM	DDRIII DIMM slot
3	ATXPOWER	M/B Main Power connector	4	ATX CPU	CPU Power connector
5	CPU Fan	CPU Fan header	6	SATA1~6	SATA connectors
7	F_PANEL	Front panel switch/LED	8	F_USB1	Card reader USB header
9	F_USB2~4	Front panel USB headers	10	SPDIF_OUT	SPDIF out header
11	F_AUDIO	Front panel audio header	12	BATTERY	RTC BATTERY
13	PCIE X16	PCIEx16 slot	14	PCIE X1	PCIEx1 slot
15	PCIE X1	PCIEx1 slot	16	PCIE X1	PCIEx1 slot

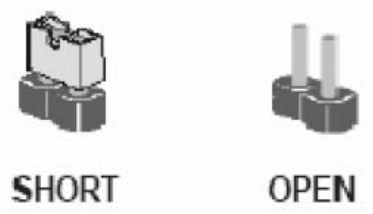
Jumper Setting

The section explains how to set jumper for correct configuration of the main board.

Setting Jumper

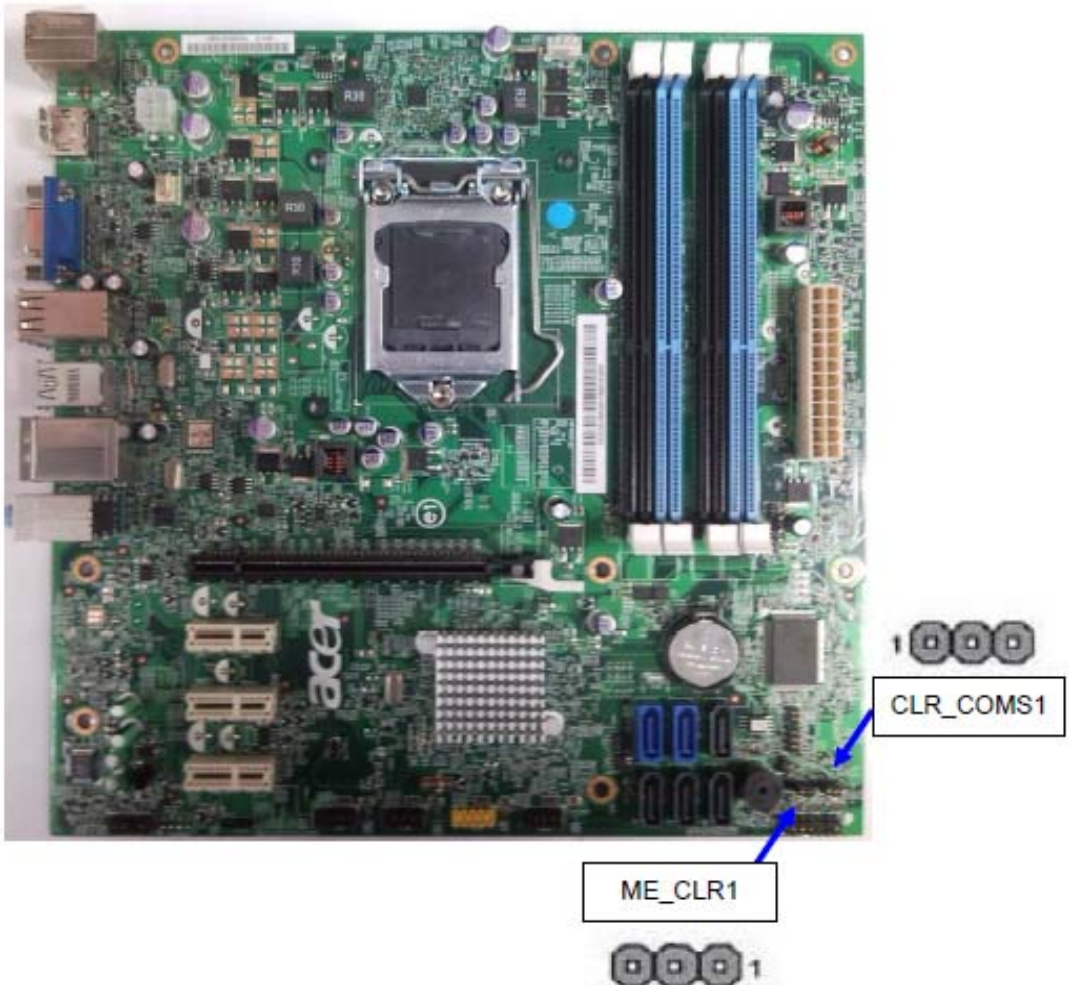
Use the mother board jumpers to set system configuration options. Jumpers with more Than one pin are numbered. When setting the jumpers, ensure that the jumper caps are Placed on the correct pins.

The illustrations show a 2-pin jumper.When the jumper cap is placed on bothpins,the jumper is SHORT.If you re-move the jumper cap,or place the jumpercap on just one pin,the jumper is OPEN.



This illustration shows a 3-pin jumper.Pins 1 and 2 are SHORT.

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper	Type	Description	Setting(default)	
CLR_CMOS1	3-pin	CLEAR CMOS	1-2：NORMAL 2-3：CLEAR Before clearing the CMOS,make sure toturn the system off.	 CLR_CMOS1
ME_CLR1	3-pin	MEDISABLE	1-2：NORMAL 2-3：MEDISABLE	 ME_CLR1

FRU (Field Replaceable Unit) List

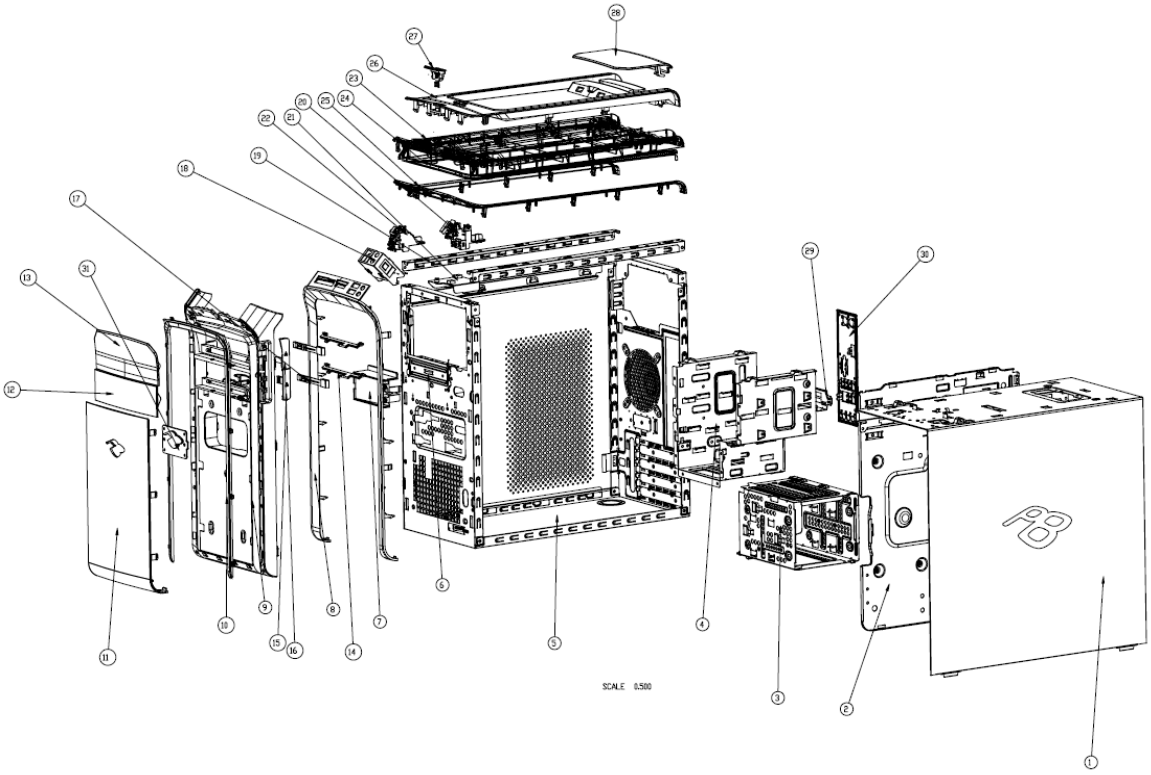
This chapter offers the FRU (Field Replaceable Unit) list in global configuration of the IXTREMEM5860 desktop computer. Refer to this chapter whenever ordering the parts to repair or for RMA (Return Merchandise Authorization).

NOTES:

- When ordering FRU parts, check the most up-to-date information available on your regional web or channel. For whatever reasons a part number is changed, it will NOT be noted on the printed Service Guide. For Acer authorized service providers, your Acer office may have a different part number code from those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for service.
- To scrap or to return the defectives, follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.
- This document will be updated as more information about the FRU list becomes available.

DX4380(G) Exploded Diagram

NOTE: This section will be updated when more information becomes available.



Item	Description	Q'ty	Remark
1	Side Cover Right	1	Part
2	MB Plate	1	Part
3	HDD Cage	1	Part
4	ODD Cage	1	Part
5	Main Chassis	1	Part
6	FDD EMI Cover	1	Part
7	Logo Light Base	1	Part
8	Front Bezel Trim	1	Assembly
9	Front Bezel Frame	1	Assembly
10	Front Light Guide	1	Part
11	Front Cover	1	Part
12	ODD Door 2	1	Part
13	ODD Door 1	2	Part
14	ODD Door Shift	1	Part
15	ODD Eject Button 2	1	Part
16	ODD Eject Button 1	2	Part
17	ODD Eject Rod	1	Part
18	Front IO Bracket	2	Part
19	Top Link Bar	1	Part
20	LED & Switch Holder Right	1	Assembly
21	Power PCB Bracket	1	Assembly
22	LED & Switch Holder Left	1	Assembly
23	Top Bezel Frame	1	Assembly
24	Top Light Guide	1	Part
25	Top Bezel Trim	1	Part
26	Top Bezel	1	Assembly
27	Power Button	1	Assembly
28	Top Cover	1	Part
29	SPDIF Bracket	1	Part
30	Rear IO Shielding	1	Part
31	Logo Light Pipe	1	Part

ixtremeM5860 FRU List

Category	Description	Number
Main board		
	SKU1: Baseline	MB.GBL01.001
Chassis		
	Chassis MicroATX HM100C with front+top USB port for P5_30L (PB) Bezel w/o 3.5" HDD carrier	HS.13100.162
	Chassis MicroATX HM100D with front+top USB port for P5_30L (PB) Bezel w/o 3.5" HDD carrier	HS.13100.163
Bezel		
	ECS (AVC) PB Bezel PM350 USB 2+2 port bezel for HM100A, w/o 3.5" HDD carrier, w/i PhotoFrame & Backup button	PZ.11900.215
	CS (AVC) PB Bezel PM351 USB 2+2 port bezel for HM100B, w/i one 3.5" HDD carrier, w/i PhotoFrame & Backup button	PZ.11900.216
CPU Cooler		
	Intel LGA1156	HI.10800.058
	Intel LGA1156	HI.10800.048
System Fan		
	SYSTEM FAN KDE 1209/GP 92*92*25 (ROHS)	HI.S150F.002
PSU		
	DPS-250AB-63A	DPS-250AB-63A
	PS-5251-7A2	PS-5251-7A2
	ATX-250PA(1)(A01004)	ATX-250PA(1)(A01004)
	DPS-250AB-66A	PY.25009.019
	FSP450-60EP(A01003)	PY.50008.005
CPU		
	Ci7-2600	KC.26001.CI7
	Ci5-2500	KC.25001.CI5
	Ci5-2400	KC.24001.CI5
	Ci5-2300	KC.23001.CI5
	Ci3-2100	KC.21001.CI3

Category	Description	Number
Memory		
	M378B2873FHS-CH9 LF 128*8 46nm	KN.1GB0B.036
	M378B5673FH0-CH9 LF 128*8 46nm	KN.2GB0B.029
	M378B5273DH0-CH9 4GB	KN.4GB0B.014
	ACR128X64D3U1333C9 LF 128*8 0.07um	KN.1GB07.002
	ACR256X64D3U1333C9 LF 128*8 0.07um	KN.2GB07.002
	GU502203EP0201 LF 128*8 0.065um 1GB	KN.1GB0H.015
	GU512303EP0202 LF 128*8 0.065um 2GB	KN.2GB0H.009
	75.073C1.G02 LF 128*8 0.065um 2GB	KN.2GB03.022
	NT4GC64B8HB0NF-CG 4GB	KN.4GB03.006
	Memory APACER UNB-DIMM DDRIII 1333 1GB 75.073C1.G02 LF 128*8 0.065um	KN.1GB01.031
	Memory APACER UNB-DIMM DDRIII 1333 2GB 75.A73C1.G02 LF 128*8 0.065um	KN.2GB01.025
	Memory A-DATA UNB-DIMM DDRIII 1333 1GB AD63I1A0823EU LF 128*8 0.065um	KN.1GB0C.010
HDD		
	HDD HGST 3.5" 7200rpm 500GB HDS721050CLA362 (Jupiter) SATA II 16MB LF F/W:3EA	KH.50007.012
	HDD HGST 3.5" 7200rpm 640GB HDS721064CLA332 (Jupiter) SATA II 32MB LF F/W:3EA	KH.64007.002
	HDD HGST 3.5" 7200rpm 1000GB HDS721010CLA332 (Jupiter) SATA II 32MB LF F/W:3EA	KH.01K07.003
	HDD SEAGATE 3.5" 7200rpm 500GB ST3500418AS(Pharaoh PB) SATA II 16MB LF F/W:CC44	KH.50001.019
	HDD SEAGATE 3.5" 7200rpm 1000GB ST31000528AS(Pharaoh BP) SATA II 32MB LF F/W:CC44	KH.01K01.013
	HDD SEAGATE 3.5" 7200rpm 1500GB ST31500341AS(Brinks) SATA II 32MB LF F/W:CC4H	KH.15K01.002
	HDD WD 3.5" 7200rpm 500GB WD5000AAKS-22V1A0 SATA II 16MB LF F/W:05.01D05	KH.50008.014
	HDD WD 3.5" 7200rpm 640GB WD6400AAKS-22A7B2 XL320M 640G SATA II 16MB LF F/W:01.03B01	KH.64008.003
	HDD WD 3.5" 5400rpm 1500GB WD15EADS-22P8B0 (GP500) SATA 32MB LF F/W:01.00A01	KH.15K08.001
	HDD WD 3.5" 5400rpm 2000GB WD20EADS-22R6B0 (GP500) SATA II 32MB LF F/W:01.00A01	KH.02K08.001
SuperMulti		
	ODD HLDS Super-Multi DRIVE HH DL 16X GH60N LF+HF Black Bezel SATA HF+Win7	KU.0160D.052
	ODD PLDS Super-Multi DRIVE HH DL 16X DH-16ABSH LF Black Bezel (HF+Win7) SATA	KU.0160F.011
BD Combo		
	ODD HLDS BD COMBO HH 6X CH20N Black Bezel SATA HF + Win7	KO.0060D.005
	ODD PLDS BD COMBO HH 6X DH-6E2S Black Bezel SATA w/ Win 7	KO.0060F.002

Category	Description	Number
BD Writer		
	ODD HLDS BD RW HH 6X BH30N Black Bezel SATA HF +Win7	KU.0060D.004
	ODD PLDS BD RW HH DL 6X DH-6B2SH LF+HF Black Bezel SATA (Win7+HF)	KU.0060F.001
VGA		
	288-7E160-A00AC HD6750 1GB GDDR 5 (128BITS) SAMSUNG DVI HDMI DP W/ATX BKT ROHS	VG.APC67.501
	288-5E142-001AC HD6570 1GB DDR3 128BITS DVI-I (SL) HDMI SAMSUNG ATX BRACKET	VG.APC65.701
	288-5E153-000AC HD6450 1GB SDDR3 64bits DVI-I + HDMI SAMSUNG (ATX)	VG.APC64.520
	288-1E180-000AC HD6450 512MB SDDR3 64bits DVI-I + HDMI SAMSUNG (ATX)	VG.APC64.501
	288-2N162-101AC GT420 2GB 128bit DVI-I+HDMI+VGA ATX Hynix	VG.PCPT4.251
	288-2N162-001AC GT420 2GB SDDR3 128bit Samsung DVI+HDMI+VGA ATX	VG.PCPT4.252
	288-1N162-001AC GT420 1GB 128bit DVI-I+HDMI+VGA ATX Samsung	VG.PCPT4.201
	288-1N162-101AC GT420 1GB 128bit DVI-I+HDMI+VGA ATX Hynix	VG.PCPT4.202
	288-1E153-200AC AMD HD5450 512MB 64bits sDDR3 DVI+HDMI+VGA ATX 4 LAYER COST DOWN (New Hynix -1.2)	VG.APC54.524
TV-Tuner		
	Avermedia H753-A TV Tuner Card PCIe Hybrid ATSC, S/W Encoder	TU.10500.072
	Avermedia H753-D TV Tuner Card PCIe Hybrid DVB-T, S/W Encoder	TU.10500.074
Remote		
	Philips Remote Controller RC2604307/01BG for EMEA ;pair with RV.11000.007	RT.11300.021
	Philips Remote Controller RC2604302/01B MSFT code US;pair with OVU430008	RT.11300.022
Receiver		
	Philips OVU710018 Win7 receiver Philips code for EMEA, H57 fixed FW, pair with RT.11300.021	RV.11000.025
	Philips Win7 OVU430008 with IR blaster	RV.11000.023
Modem		
	D-1156E#/A10A, Modem PCI-Ex1 card, LSI Universal Modem (PCI-E) 56K V.92 - Concorde (C40)	FX.10100.002
WLAN		
	WN7601R, Ralink RT3090, 802.11b/g/n 1x1 WLAN PCI-E x1 card	NI.10200.037

Category	Description	Number
Speaker		
	Neosonica mini speaker USB black ;meet Win7	SP.10600.032
USB keyboard		
	Keyboard LITE-ON SK-9020 USB 104KS Black US	KB.USB0B.283
	Keyboard LITE-ON SK-9020 USB 105KS Black UK	KB.USB0B.284
	Keyboard LITE-ON SK-9020 USB 105KS Black Spanish Latin	KB.USB0B.285
	Keyboard LITE-ON SK-9020 USB 105KS Black English/Canadian French	KB.USB0B.286
	Keyboard LITE-ON SK-9020 USB 104KS Black Traditional Chinese	KB.USB0B.287
	Keyboard LITE-ON SK-9020 USB 104KS Black Thailand	KB.USB0B.373
	Keyboard LITE-ON SK-9020 USB 109KS Black Japanese	KB.USB0B.374
	Keyboard LITE-ON SK-9020 USB 109KS Black Brazilian Portuguese leverage the JA 109 key top cover	KB.USB0B.375
USB Mouse		
	USB/P5	MS.11200.081
	USB/P5	MS.11200.083
Wireless KB		
	Keyboard LITE-ON SK-9061 RF2.4 104KS Black US	KB.RF40B.083
	Keyboard LITE-ON SK- 9061 RF2.4 104KS Black Traditional Chinese	KB.RF40B.084
	Keyboard LITE-ON SK- 9061 RF2.4 104KS Black Thailand	KB.RF40B.085
	Keyboard LITE-ON SK- 9061 RF2.4 105KS Black Spanish Latin	KB.RF40B.086
	Keyboard LITE-ON SK- 9061 RF2.4 107KS Black Brazilian Portuguese	KB.RF40B.087
	Keyboard LITE-ON SK- 9061 RF2.4 109KS Black Japanese	KB.RF40B.088
	Keyboard LITE-ON SK-9061 RF2.4 105KS Black UK	KB.RF40B.089
	Keyboard LITE-ON SK- 9061 RF2.4 105KS Black English/Canadian French	KB.RF40B.090
Wireless mouse		
	Lite-on P5 optical mouse RF2.4 SM-9661 with receiver(nano dangle)	MS.11200.084
Card Reader		
	P5 Cardreader	CR.10400.125
	P5 Cardreader	CR.10400.126