

Acer

**Aspire R3700
Service Guide**

PRINTED IN TAIWAN

Revision History

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

Date	Chapter	Updates

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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.

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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.

Operating System

- Microsoft Windows 7 Home Premium X86/ X64
- Microsoft Windows 7 Home Basic X86/ X64
- Microsoft Windows 7 Starter x86
- Linux x-Window mode
- Free DOS

Processor

- Socket Type: None
- Processor Type:
 - Intel Atom D400/D500 series CPU
 - Atom D525+GT218

Chipset

- Intel NM10
- Design Criteria:
 - Should meet Intel Pine Trail-D platform design guide
- Super I/O: ITE/8721
 - Should support SST signal output

PCB

- 170mm*170mm (Proprietary)

Memory subsystem

- Socket Type: DDR III SO-DIMM connector
- Socket Quantity: 2
- Only support single channel
- Capacity support:
 - 1GB / 2 GB DDRIII 800 SO-DIMM support (follow Intel Spec.)
 - 1GB to 4GB Max memory support(follow Intel Spec.)
- Design Criteria:
 - Should follow Pine Trail-D platform design guide
 - Should meet Pine Trail-D BIOS Specification

On-Board Graphic solution

- NV GT218-ION with 512MB VRAM
 - 1 D-Sub port on rear
 - 1 HDMI port on rear
 - Dual view support

Hard disk

- Support up to one SATA ports
- 2.5"
- Capacity and models are listed on FRU

Optical disk

- None

Serial ATA controller

- Slot Type: SATA connector
- Slot Quantity: 1
- Storage Type support: HDD

Audio

- Chip: vendor propose (Realtek 662)
- Connectors support:
 - Audio jacks color coding: should meet Microsoft Windows Logo Program Device Requirements: Audio-0002
 - Front 2 jack follow HD audio definition
 - Add HD de-pop CKT

LAN

- Controller: Proposed by vender
 - Port: 1 x RJ45 rear port for Gigabit Ethernet
- Design Criteria:
 - Should be worked under 10/100/1000Mbs environment
- Reserved disable function on both hardware & BIOS side. Default is enabled
- Support network PXE boot

USB ports

- Controller: Intel NM10
- Ports Quantity: 6 for aPluto
 - 4 back panel ports
 - 2 ports for front (Daughter board)
- Connector Pin: standard Intel FPIO pin definition
- USB 2.0/1.1Data transfer rate support

Extension slot

- Support one Mini PCIe slot

All On-Board Connectors

- Rear I/O connectors
 - 1 HDMI VGA output
 - 1 D-Sub VGA output
 - Two USB stack *2
 - 1 RJ45 LAN port
 - 1 DC-in jack
- On-board connectors
 - Two DDRIII SO-DIMM memory sockets
 - One Mini PCIe slot
 - Board to board design for Power Switch, Power Indicator and 2*USB 2.0
 - 2 audio connector HD
 - One SATA sockets (For HDD)
 - One 5V power port for HDD
 - One 1*4 pin CPU FAN
 - One 3 pin clear CMOS header
 - One on board buzzer
 - Color management for on board connector(pls refer to Acer spec)
 - One S/PDIF port

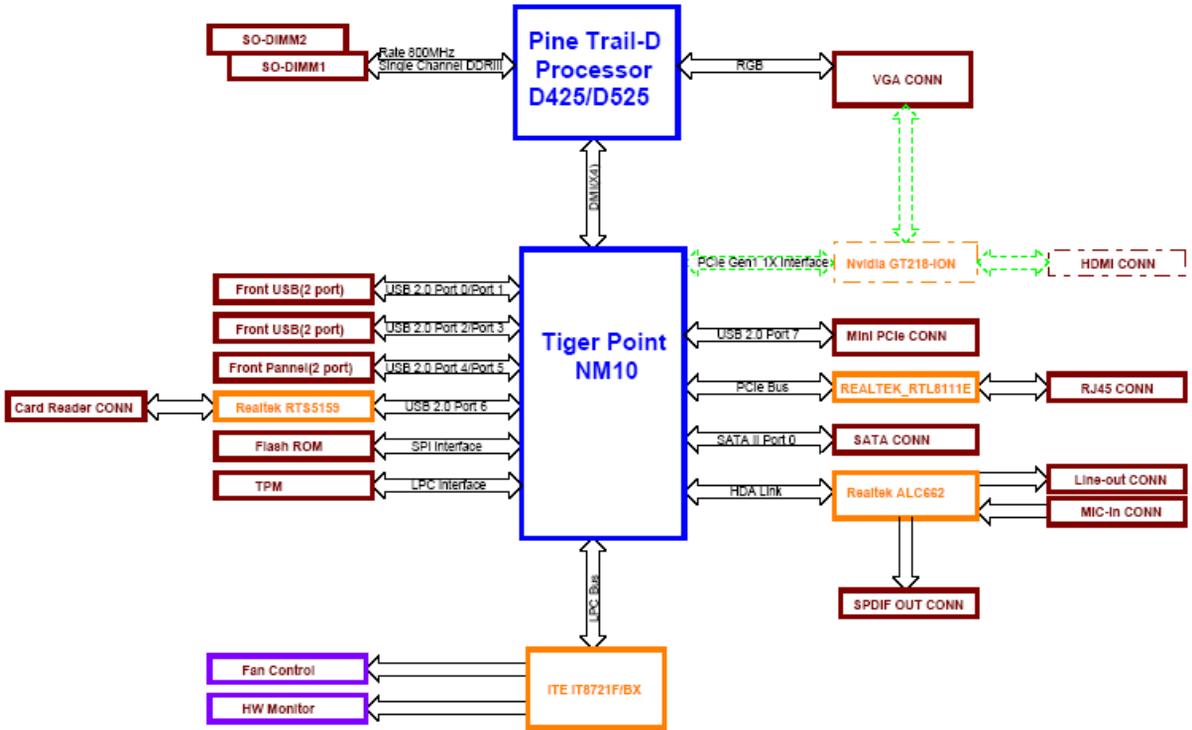
System BIOS

- BIOS Type: AMI Kernel with Acer skin
- Size: 8Mb(depend on chipset BIOS programming guide)

Adapter

- Universal AC adapter, 90~264V AC, 47~63HZ
- 3-pin 65W with 19VDC output
- Small DC jack
- Energy Star5.0 support

Block Diagram



System Components

This section is a virtual tour of the system's interior and exterior components.

Front Panel



No.	Component
1	USB 2.0 port
2	Power Button
3	S/PDIF port
4	Media Card Reader(4 in 1: XD/SD/MMC/MS)
5	Headphone/Speaker-out/line-out jack
6	Microphone-in jack

Rear Panel



No.	Component
1	USB 2.0 port
2	LAN Connector
3	HDMI port
4	D-sub port
5	DC-in Jack
6	Kensington lock

Hardware Specifications and Configurations

Processor

Item	Specification
Type	Intel Atom D500 series CPU
Socket	Non
FSB	800 MHz
Minimum operating speed	0 MHz (If Stop CPU Clock in Sleep State in BIOS Setup is set to Enabled.)

BIOS

Item	Specification
BIOS code programmer	AMI Kernel with Acer
BIOS version	P01-A0
BIOS ROM type	SPI ROM
BIOS ROM size	8MB
Support protocol	SMBIOS(DMI)2.6
Device Boot Support	1st priority: SATA HDD/SDD 2nd priority: CD-ROM 3rd priority: Removable Device 4th priority: LAN
Support to LS-120 drive	NO
Support to BIOS boot block feature	YES

BIOS Hotkey List

Hotkey	Function	Description
Del	Enter BIOS Setup Utility	Press while the system is booting to enter BIOS Setup Utility.

Main Board Major Chips

Item	Specification
North Bridge	Intel NM10
VGA controller	Nvidia GT218-ION
Audio controller	Realtek ALC662-VC
LAN controller	REALTEK_RTL8111E
USB controller	Intel NM10

Memory Combinations

Slot	Memory	Total Memory
Slot 1	1GB,2GB	1GB ~2GB
Slot 2	1GB,2GB	1GB ~2GB
Maximum System Memory Supported		1GB ~4GB

System Memory

Item	Specification
Memory slot number	2 slot
Support Memory size per socket	1GB,2GB
Support memory type	DDR3 SO-DIMM
Support memory interface	DDR3 800MHz
Support memory voltage	1.5V
Support to parity check feature	Yes
Support to error correction code (ECC) feature	No
Memory module combinations	You can install memory modules in any combination as long as they match the above specifications.

Audio Interface

Item	Specification
Audio controller	Realtek ALC662
Audio controller type	ALC662-VC
Audio channel	2 channel analog audio
Audio function control	Enable/Disable by BIOS setup
Mono or stereo	Stereo
Compatibility	The ALC662-VC series support host audio controller from the Intel ICH series chipset, and also from any other HDA compatible audio controller. With EAX/ Direct Sound 3D/I3DL2/A3D compatibility, and excellent software utilities like environment sound emulation, multiple bands of software equalizer and dynamic range control, optional Dolby® Digital Live, DTS® CONNECT™, and Dolby® Home Theater programs, provides an excellent home entertainment package and game experience for PC users.
Music synthesizer	Yes,internal FM synthesizer
Sampling rate	192KHz (max)
MPU-401 UART support	Supported
Microphone/Headphone jack	Supported

SATA Interface

Item	Specification
SATA controller	Intel NM10
SATA controller resident bus	PCI bus
Number of SATA channel	SATA X 1
Support bootable CD-ROM	YES

USB Port

Item	Specification
Universal HCI	USB 2.0/1.1
USB Class	Support legacy keyboard for legacy mode
USB Connectors Quantity	6 port for vPluto_D3 <ul style="list-style-type: none"> 4 back panel ports 2 ports for front (Daughter board)

Environmental Requirements

Item	Specification
Temperature	
Operating	+5°C ~ +35°C
Non-operating	-20 ~ +60°C (Storage package)
Humidity	
Operating	15% to 80% RH
Non-operating	10% to 90% RH
Vibration	
Operating (unpacked)	5 ~ 500 Hz: 2.20g RMS random, 10 minutes per axis in all 3 axes. 5 ~500 Hz: 1.09g RMS random, 1 hour per axis in all 3 axes.

Power Management

Devices	S1	S3	S4	S5
Power Button	V	V	V	V
USB Keyboard/Mouse	V	V	N/A	N/A
PME	Disabled	Disabled	Disabled	Disabled
RCT	Disabled	Disabled	Disabled	Disabled
WOR	Disabled	Disabled	Disabled	Disabled

- Devices wake up from S3 should be less than.
- Devices wake up from S5 should be less than 10 second

Power Management Function(ACPI support function)

Device Standby Mode

- Independent power management timer for hard disk drive devices(0-15 minutes,time step=1 minute).
- Hard Disk drive goes into Standby mode(for ATA standard interface).
- Disable V-sync to control the VESA DPMS monitor.
- Resume method:device activated (keyboard for DOS, keyboard &mouse for Windows).
- Resume recovery time 3-5sec.

Global Standby Mode

- Global power management timer(2-120minutes,time step=10minute).
- Hard disk drive goes into Standby mode(for ATA standard interface).
- Disable H-sync and V-sync signals to control the VESA DPMS monitor.
- Resume method: Resume to original state by pushing external switch Button,modem ring in,keyboard an mouse for APM mode.
- Resume recovery time :7-10sec

Suspend Mode

- Independent power management timer(2-120minutes,time step=10minute)or pushing extern switch button.
- CPU goes into SMM
- CPU asserts STPCLK# and goes into the Stop Grant State.
- LED on panel turns amber colour.
- Hard disk drive goes into SLEEP mode (for ATA standard interface).
- Disable H-sync and V-sync signals to control the VESA DPMS monitor.
- Ultra I/O and VGA chip go into power saving mode.
- Resume method: Resume to original state by pushing external switch Button,modem ring in,keyboard an mouse for APM mode
- Return to original state by pushing external switch button,modem ring inand USB keyboard for ACPI mode.

ACPI

- ACPI specification 1.0b
- S0,S1,S2 and S5 sleep state support.
- On board device power management support.
- On board device configuration support.

System Utilities

CMOS Setup Utility

CMOS setup is a hardware 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 conditions.

- 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 screenshots 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.

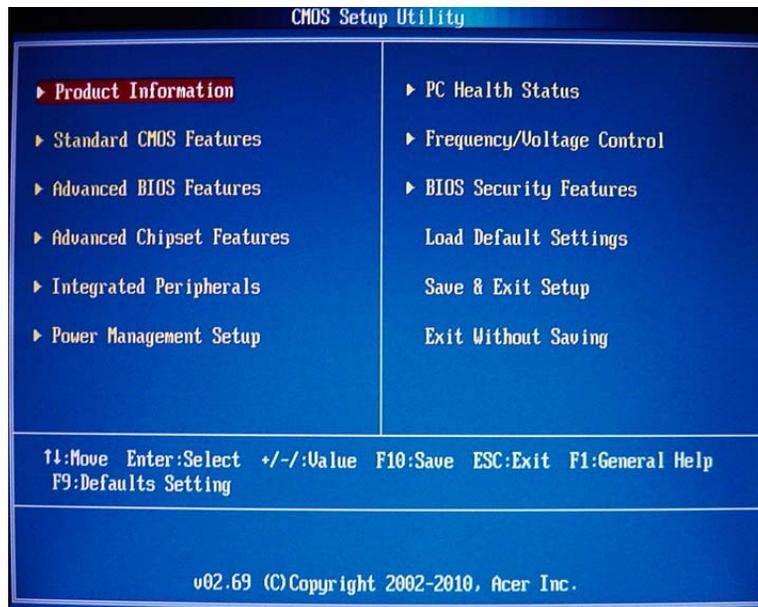
- **Enter** key – Display a submenu screen.

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.

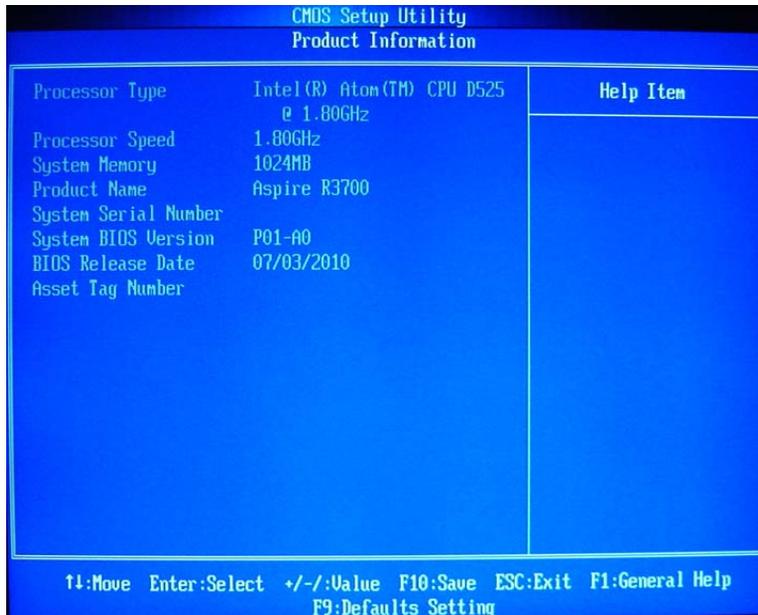


Parameter	Description
Product Information	This page shows the relevant information of the main board
Standard CMOS Features	This setup page includes all the items in standard compatible BIOS
Advanced Chipset Features	This setup page includes all the items of Award special enhanced features
Advanced Chipset 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 parameters which the system would be in best performance configuration
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 screenshots, settings in **boldface** are the default and suggested settings.

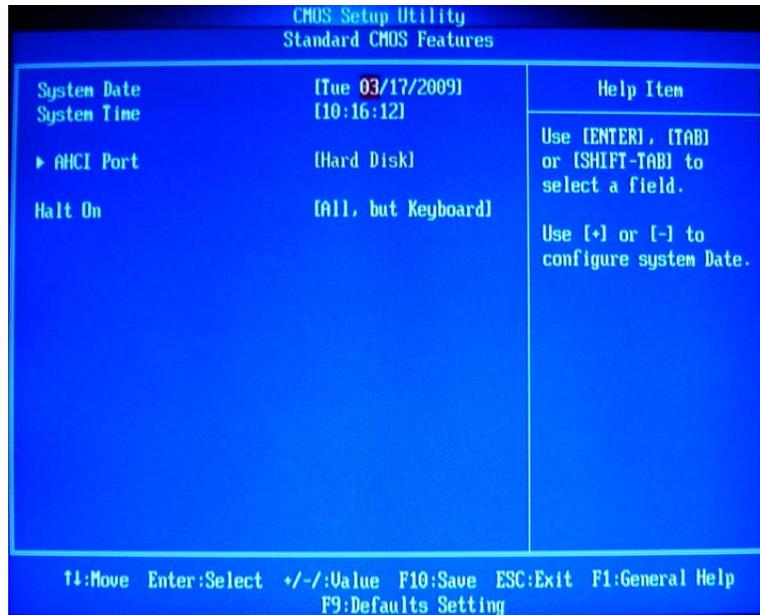
Product Information

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



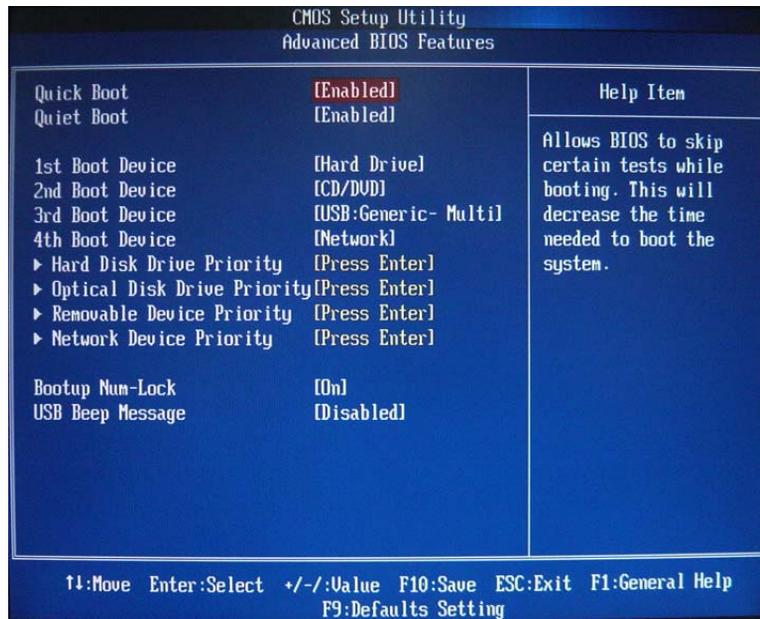
Parameter	Description
Processor Type	Type of CPU installed on the system.
Processor Speed	Speed of the CPU installed on the system.
System Memory	Total size of system memory installed on the system.
System Manufacturer	Name of the manufacturer of this system.
Product Name	Product name of the system.
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



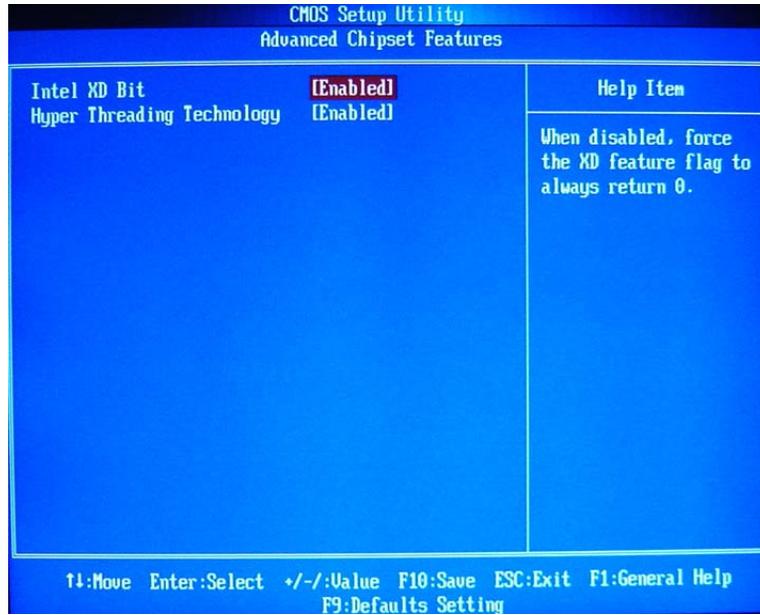
Parameter	Description	Option
System Date	Set the date following the weekday-month-day-year format.	
System Time	Set the system time following the hour-minute-second format.	
AHCI Port	Press Enter to view detailed device information connected to the SATA connectors.	
Halt On	Determines whether the system will stop for an error during the POST.	All, But Keyboard No Errors All Errors

Advanced BIOS Feature



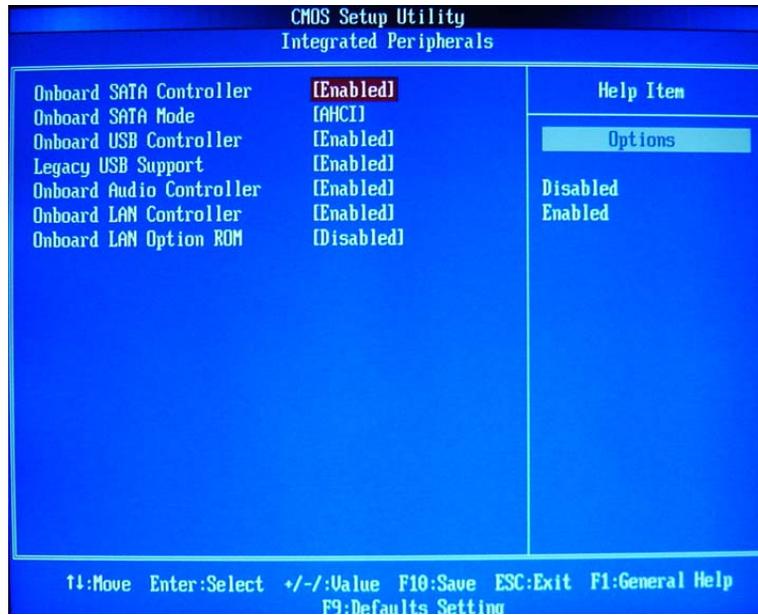
Parameter	Description	Option
Quick Boot	Allows you to decrease the time it takes to boot the computer by shortening or skipping certain standard booting process.	Enabled Disabled
Quiet Boot	When enabled, the BIOS splash screen displays during startup. When disabled, the diagnostic screen displays during 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 Drive Priority	Press Enter to access the Optical Disk Drive Priority submenu and specify the boot device priority sequence from available optical drives.	
Removable Drive Priority	Press Enter to access the Removable Drive Priority submenu and specify the boot device priority sequence from available removable drives.	
Network Drive Priority	Press Enter to access the Network Drive Priority submenu and specify the boot device priority sequence from available network 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



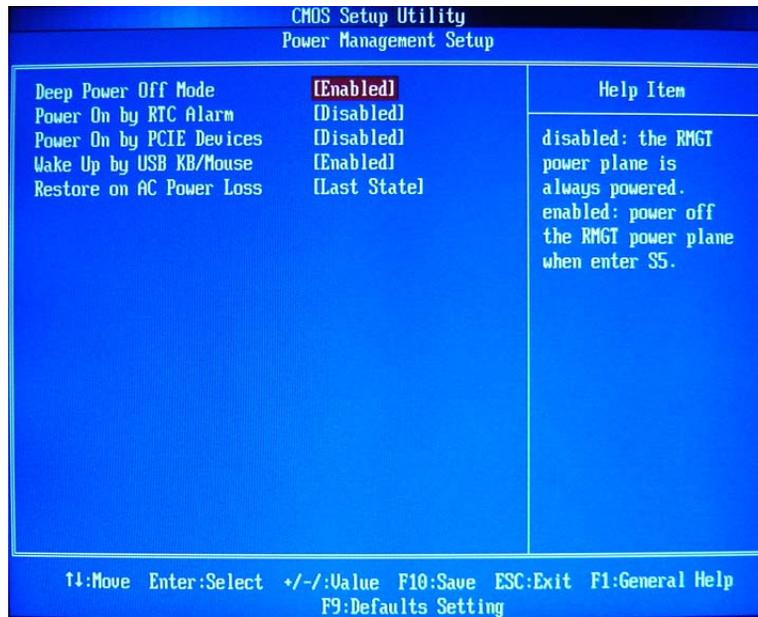
Parameter	Description	Option
Intel XD Bit	When enabled, the processor disables code execution when a worm attempts to insert a code in the buffer preventing damage and worm propagation. When disabled, the processor forces the Execute Disable (XD) Bit feature flag to always return to 0.	Enabled Disabled
Hyper Threading Technology	Enabled for Windows XP and Linux4(OS optimized for Hyper Threading Technology) Disabled for other OS(OS not optimized for Hyper Threading Technology)	Enabled Disabled

Integrated Peripherals



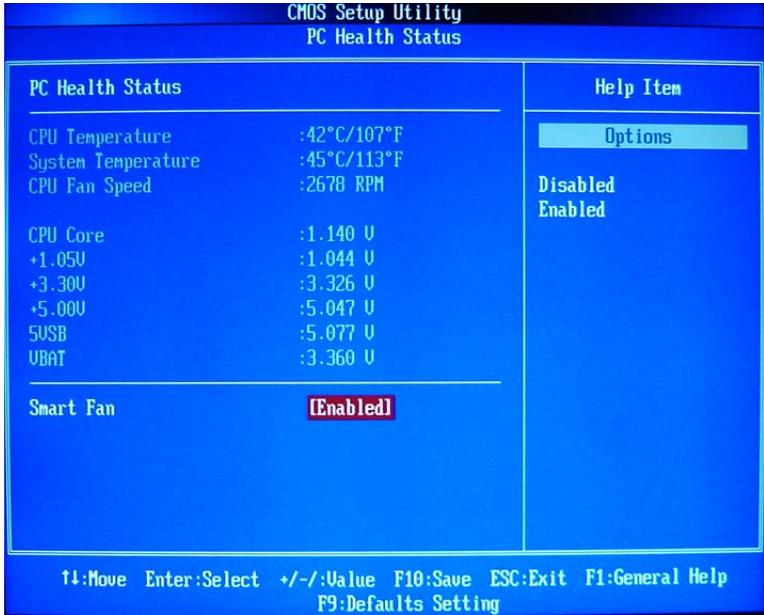
Parameter	Description	Option
Onboard SATA Controller	Enables or disables the onboard SATA controller.	Enabled Disabled
Onboard SATA Mode	Select an operating mode for the onboard SATA.	RAID Native IDE
Onboard USB Controller	Enables or disables the onboard USB controller.	Enabled Disabled
Legacy USB Support	Enables or disables support for legacy USB devices.	Enabled Disabled
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

Power Management Setup



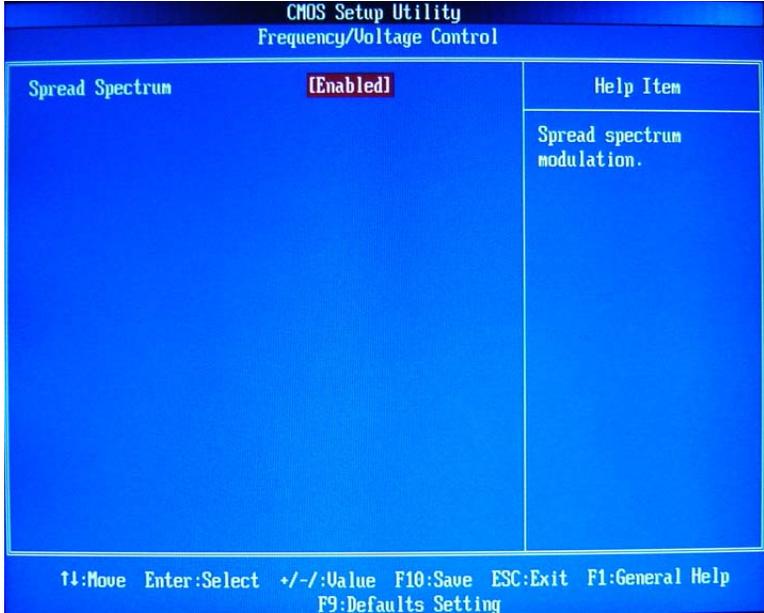
Parameter	Description	Option
Deep Power Off Mode	If Enabled, it will support EUP Lot6 Function. If Disabled, it will not support EUP Lot6Function.	Enabled Disabled
Power On by RTC Alarm	Enables or Disables to wake up the system by RTC Alarm Function	Enabled Disabled
Power On by PCIE Devices	Enables or disables to wake up the system from a power saving mode through an event on PCI Express device.	Enabled Disabled
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



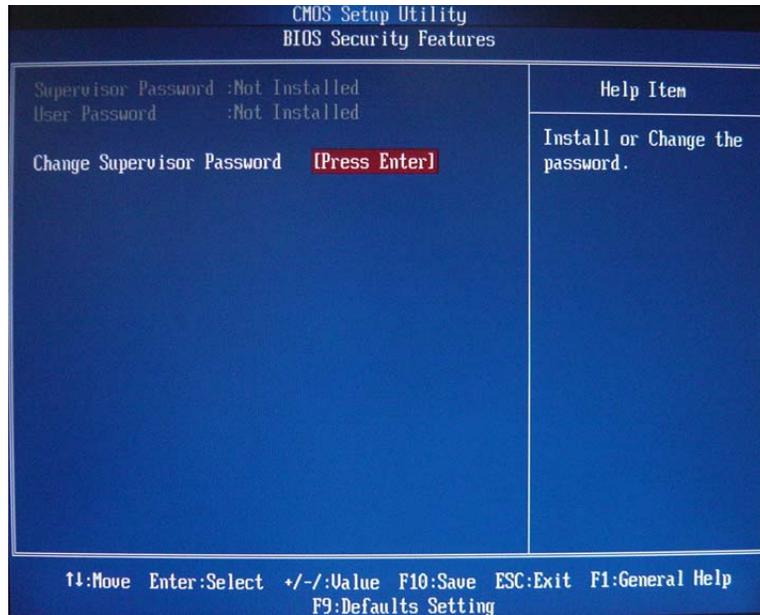
Parameter	Description	Option
Smart FAN	Enables or disables the smart system fan control function.	Enabled Disabled

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

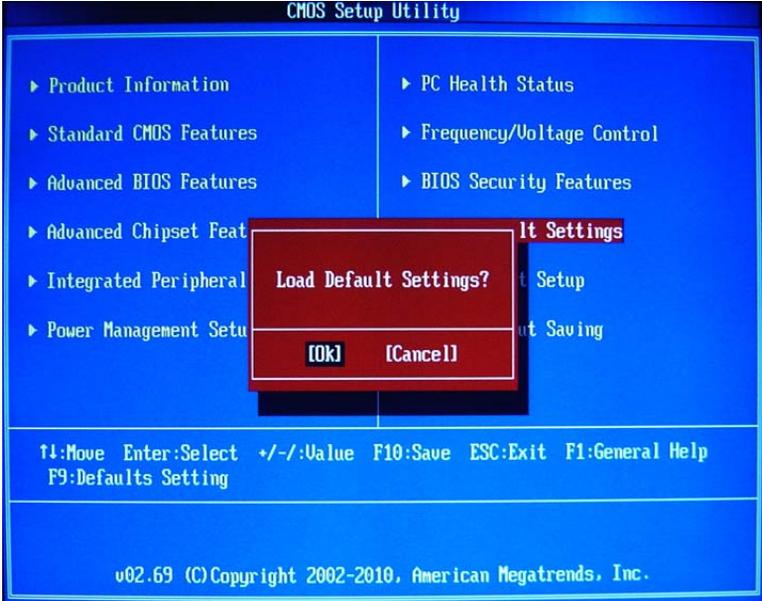
BIOS Security Features



Parameter	Description	Option
Supervisor Password	This item indicates whether a supervisor password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.	
User Password	This item indicates whether a user password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.	
HDD Password	This item indicates whether a HDD password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.	
Change Supervisor Password	You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.	

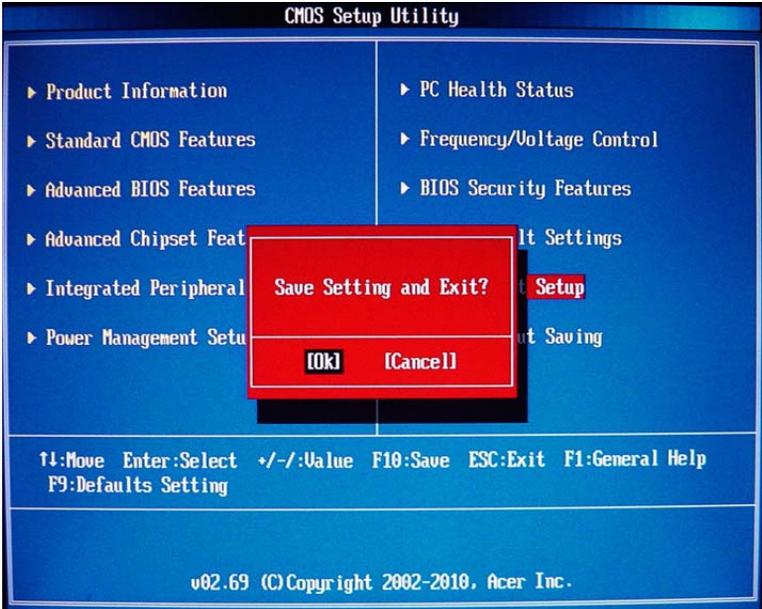
Load Default Settings

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 and Exit Setup

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



Exit Without Saving

The Discard Changes and Exit Setup menu allows you to discard changes made and close the Setup Utility.



System Disassembly

This chapter contains step-by-step procedures on how to disassemble 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

1. Put the Computer on the worktable lightly.
2. Release the base bracket.



3. Remove 1pc screws.



4. Remove side cover away from the server.



WARNING:Please be careful when open the cover,in order not to damage the EMI shielding.

Removing the CPU Fan

WARNING: The heat sink becomes very hot when the system is on. NEVER touch the heat sink with any metal or with your hands.

1. Disconnect fan cable from the motherboard.



2. Use screwdriver to loosen the three screws from the CPU cooler.



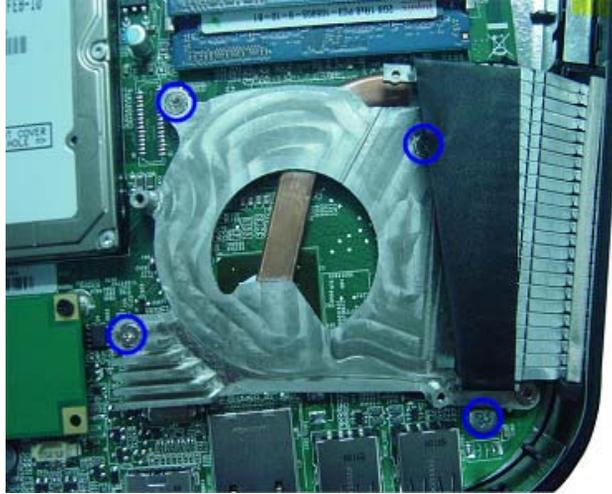
3. Lift CPU fan from CPU cooler.



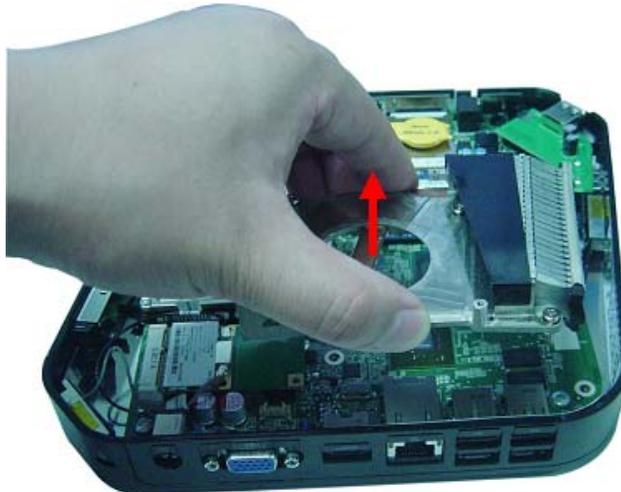
Removing the CPU Cooler

WARNING:The heat sink becomes very hot when the system is on. NEVER touch the heat sink with any metal or with your hands.

1. Use screwdriver to loosen the four screws.

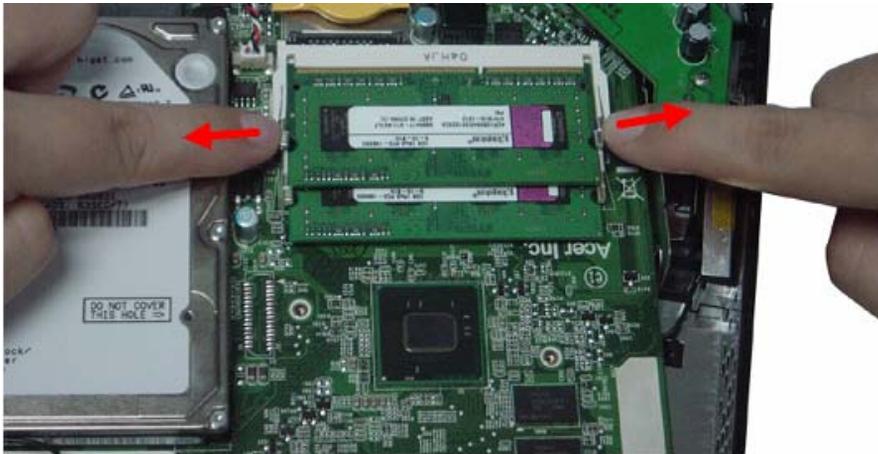


2. Lift the CPU cooler from the motherboard.



Removing the Memory Modules

1. Release the hook as show below.



2. Remove the Memory from SO-DIMM socket.

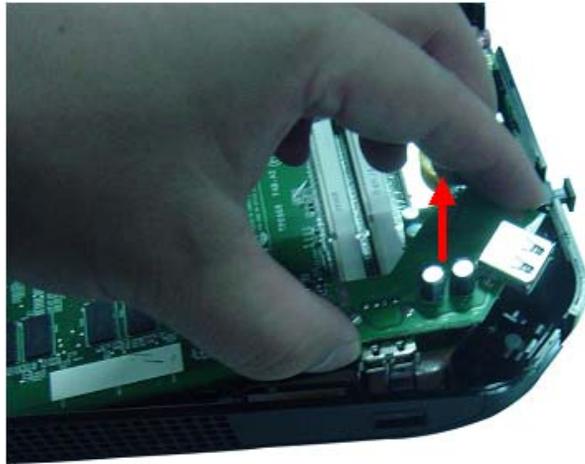


Removing the Front D/B

1. Use hand to loosen both sides the clasp.



2. Lift the D/B away from the main board.



Removing the Wireless LAN Card

1. Remove wireless LAN antenna cable from connector of wireless LAN.



2. Use screwdriver to loosen the screw.

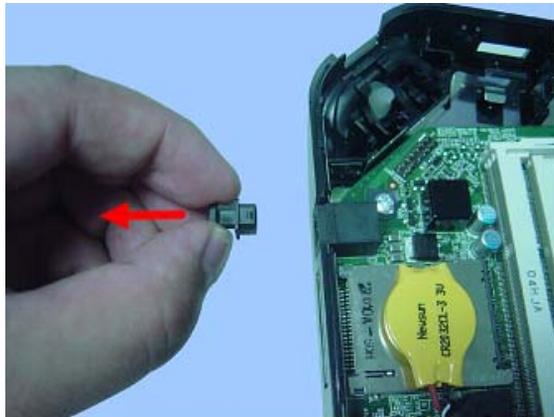


3. Remove the wireless Lan card.



Removing the S/PDIF Cover

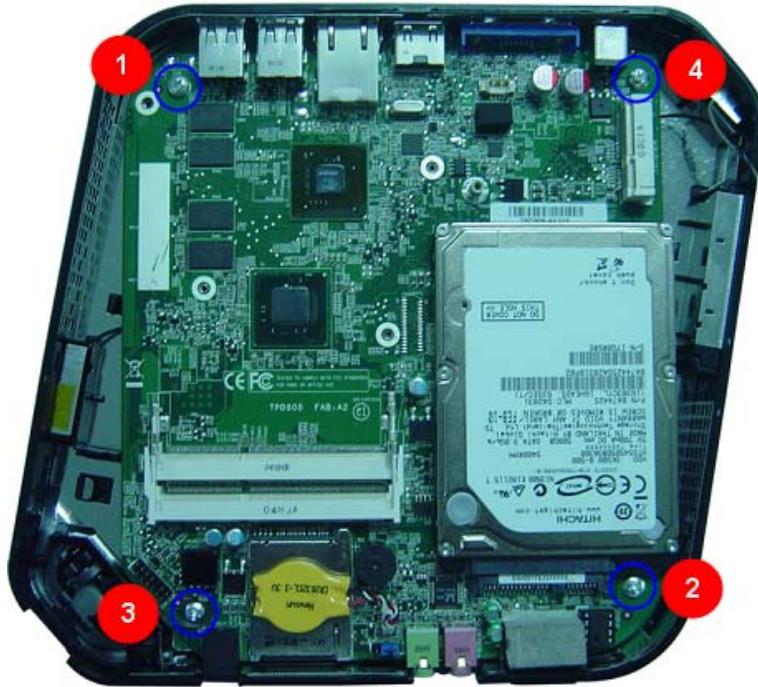
1. Pull the S/PDIF cover away from the motherboard.



Removing the Main Board

WARNING:Please be careful when lift the motherboard,in order not to damage the EMI shielding.

1. Remove the four screws that secure the main board to the chassis.



2. Lift the board from the chassis.



Removing the Hard Disk Drive

1. Use screwdriver to loosen the four screws.

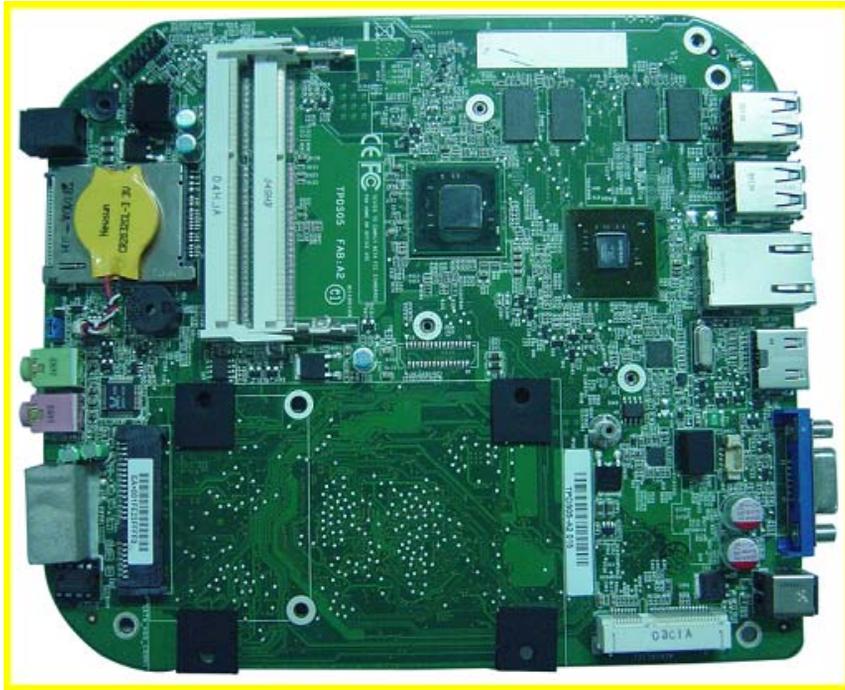


2. Remove HDD from Main board.



Remove the Battery.

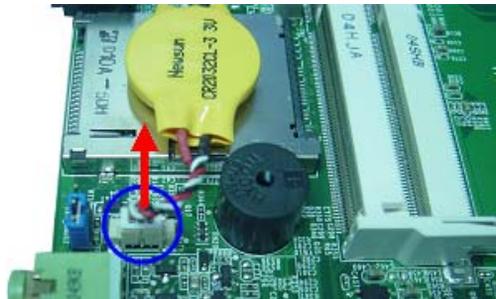
1. Place the motherboard on a clean, static-free work surface.



Note: Circuit boards >10 cm² has been highlighted with the yellow rectangle as above image shows.

Please detach the Circuit boards and follow local regulations for disposal.

2. Disconnect the cable from the motherboard.



3. Remove the battery.



Note: RTC battery has been highlighted with the yellow circle as above image shows. Please detach the

RTC battery and follow local regulations for disposal.

System Troubleshooting

This chapter provides instructions on how to troubleshoot 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 switch is 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” on page 27.
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.

Beep Symptom	Cause and Description
One short beep	System is ready. System is OK.
Continuous one long beep	Memory not installed or memory error.
One long beep and two short beeps then repeat.	VGA not installed or VGA error. Graphics card error/not installed, graphics card memory error or graphics card BIOS checksum error.
One long beep then two short beep	BIOS damaged. BIOS is damaged, BIOS POST jumps to Boot Block to execute the default procedures.
Two short beeps	CMOS damaged. CMOS checksum error or CMOS battery loss occurs.

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. Checkpoints are 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 a checkpoint 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 is limited, 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 D1	Early chipset initialization is done. Early super I/O initialization is done including RTC and keyboard controller. NMI is disabled.
D0	Go to flat mode with 4GB limit and GA20 enabled. Verify the bootblock checksum.
D1	Perform keyboard controller BAT test. Check if waking up from power management suspend state. Save power-on CPUID value in scratch CMOS.
D2	Disable CACHE before memory detection. Execute full memory sizing module. Verify that flat mode is enabled.
D3	If memory sizing module not executed, start memory refresh and do memory sizing in Bootblock 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.
D6	Both key sequence and OEM specific method is checked to determine if BIOS recovery is forced. Main BIOS checksum is tested. If BIOS recovery is necessary, control flows to checkpoint E0. See Bootblock Recovery Code Checkpoints section for 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.
DA	Restore CPUID value back into register. Give control to BIOS POST (Execute POST Kernel). See POST Code Checkpoints section of document for more information.

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.

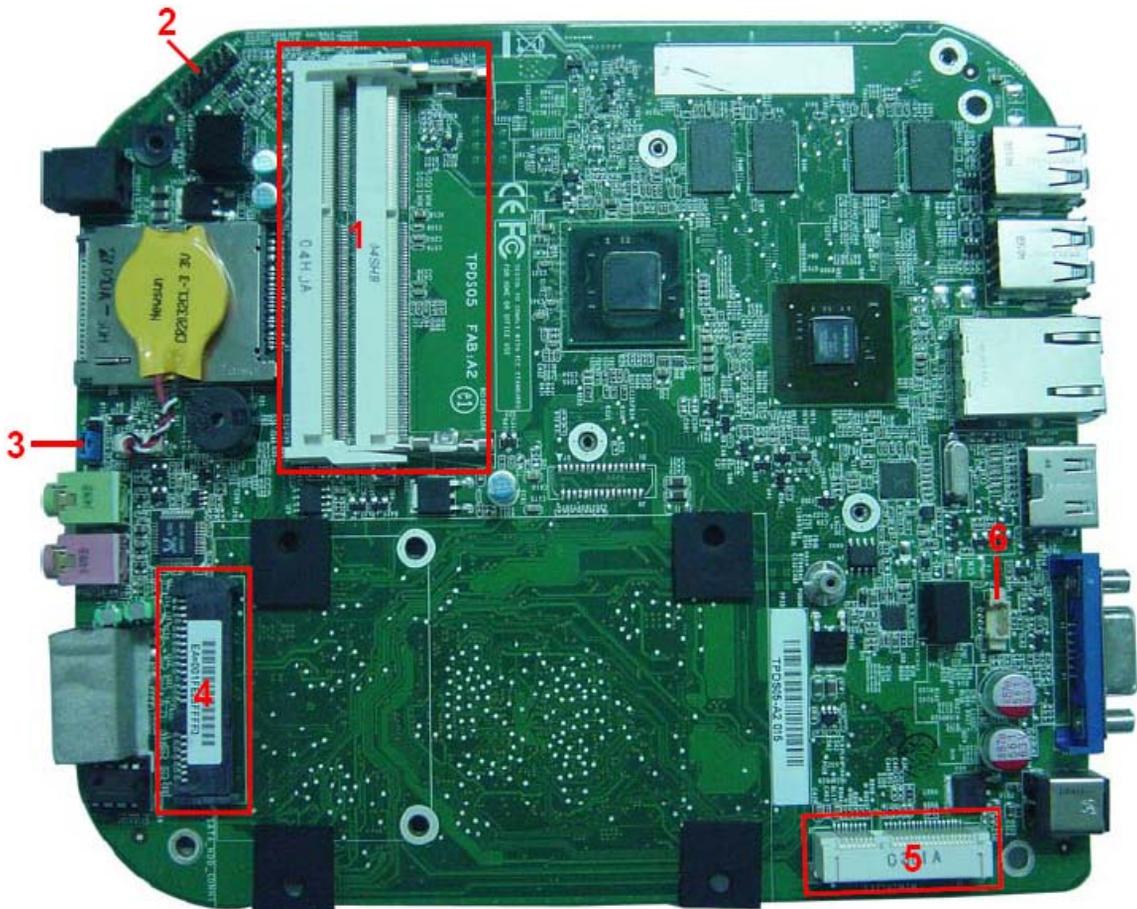
Checkpoint	Description
E0	Initialize the floppy controller in the super I/O. Some interrupt vectors are initialized. DMA controller is initialized. 8259 interrupt controller is initialized. L1 cache is enabled.
E9	Set up floppy controller and data. Attempt to read from floppy.
EA	Enable ATAPI hardware. 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. Copy the target BIOS rom file to a USB disk. Rename the target BIOS to "amiboot.rom". Plug the USB disk to computer that you want to recovery the system BIOS.
2. Power on the system, BIOS recovery will be done. Wait for about 3 minutes the system will reboot automatically after flash update completed successfully.
3. Press "Del" Key to enter BIOS Setup.
4. Choose " Load Default Settings " and press " Enter " key.
4-1. Choose " OK " and press "Enter " key.
5. Choose "Save & Exit Setup " and press "Enter" key.
5-1. Choose " OK " and press "Enter " key.
6. AMIBIOS Recovery is finished.

Jumper and Connector Information

M/B Placement



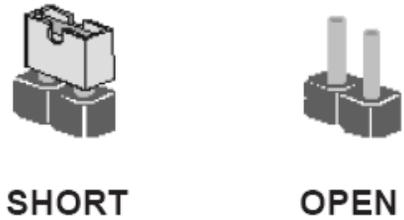
No	Label	Description	No	Label	Description
1	SODIMM1~2	DIMM socket	2	FP1	Front panel header
3	CLR_CMOS 1	Clear CMOS jumpers	4	SATA_HDD_CONN1	SATA data transfer connectors
5	MINIPCIE1	PCIE socket	6	SYS_FAN1	SYS fan header

Jumper Setting

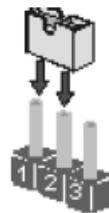
The section explains how to set jumper for correct configuration of the mainboard.

Use the motherboard 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 both pins, the jumper is SHORT. If you re-move the jumper cap, or place the jumpercap on just one pin, the jumper is OPEN.

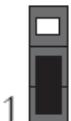


This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT.

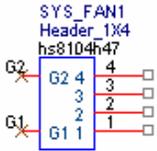
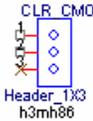
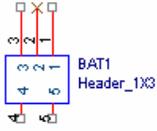


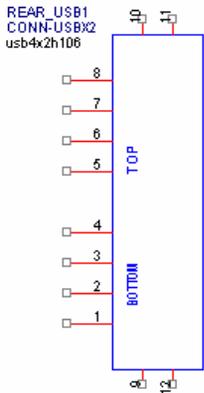
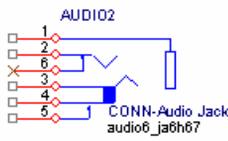
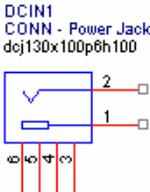
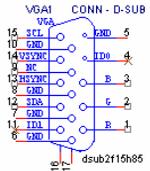
Setting Jumper

Use the motherboard 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.

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

System Board Pin Definition

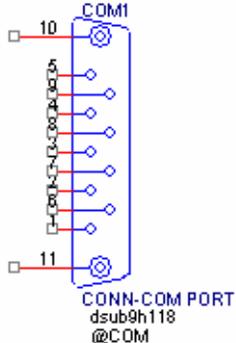
Jumper/Header Name	Function	Definition
SYS_FAN1 (4 PIN) 	SYSTEM FAN HEADER	1: GND 2: 5V_S0 3: FANTAC 4: PWM CONTROL
CLR_CMOS1 	CLEAR CMOS HEADER	1-2: CLEAR CMOS 2-3: NORMAL (Default)
BAT1(3 PIN) 	BATTERY HEADER	3: Battery power output 2: NC 1,4,5: GND
FP1 	Front panel header	1: GND 2: F_USBPWR2 3: USB_P5+ 4: USB_P5- 5: GND 6: F_USBPWR2 7: USB_P4+ 8: USB_P4- 9: OBR_GPIO 10: KEY 11: PANSWHJ 12: LEDP 13: GND 14: PMSLED

Jumper/Header Name	Function	Definition
	FRONT_USB1, FRONT_USB2	1,5:USB_REAR_PW R
		2:USB_0_FBJ
		3:USB_0_FB
		6:USB_1_FBJ
		7:USB_1_FB
		4,8,9,10,11,12:GND
	AUDIO1 (MIC IN /Pink in Color)	1:GND
		2:MIC1_L2
		3:MIC1_R5
		4:MIC1-JD
		5:FRONT-IO- SENSE1
		6:NC
	AUDIO2 (LINE OUT / Lime in Color)	1:GND
		2:LINE_OUT_L2
		3:LINE_OUT_R5
		4:FRONT-JD
		5:FRONT-IO- SENSE2
		6:NC
	DCIN1	1:DCIN1
		2:GND
		3:GND
		4:GND
		5:GND
		6:GND
	VGA1(D-SUB)	1:RED_CONN
		2:GREEN_CONN
		3:BLUE_CONN
		4:NC
		5:GND

Jumper/Header Name	Function	Definition
		6:GND
		7:GND
		8:GND
		9:5V_CONN
		10:GND
		11:NC
		12:5V_DDCA_DATA
		13:HSYNC_R
		14:VSYNC_R
		15:5V_DDCA_CLK
		16:GND
17:GND		
	HDMI1	1:HDMIC_D2
		2:GND
		3:HDMIC_D2J
		4:HDMIC_D1
		5:GND
		6:HDMIC_D1J
		7:HDMIC_D0
		8:GND
		9:HDMIC_D0J
		10:HDMIC_TXC
		11:GND
		12:HDMIC_TXCJ
		13:HDMI_CEC_C
		14:NC
		15:I2C_CLK_HDMI_CONN
		16:I2C_SDA_HDMI_CONN
		17:GND
		18:5V_CONN
		19:HDMIC_HPD_C
		GROUND1:GND
		GROUND1:GND

Jumper/Header Name	Function	Definition
		GND:GND
		GND:GND
<p>SATA HDD CONN1</p> <p>S1 GND1 S2 A+ S3 A- S4 GND2 S5 B- S6 B+ S7 GND3</p> <p>P1 GND8 P2 V331 P3 V332 GND9 P4 V333 P5 GND4 P6 GND5 P7 GND6 P8 V51 P9 V52 P10 V53 P11 GND7 P11 Reserved P12 GND P13 V121 P14 V122 P15 V123</p> <p>CONN - SATA sata22jrh96</p>	SATA CONN1	S1:GND
		S2:STX_DP0_C
		S3:STX_DN0_C
		S4:GND
		S5:SRX_DN0_C
		S6:SRX_DP0_C
		S7:GND
		P1:3D3V_S0
		P2:3D3V_S0
		P3:3D3V_S0
		P4:GND
		P5:GND
		P6:GND
		P7:VCC5_SATA_HD D
		P8:VCC5_SATA_HD D
P9:VCC5_SATA_HD D		
P10:GND		
P11:NC		
P12:GND		
P13:NC		
P14:NC		
P15:NC		
	Card reader	SD-1:SD_DAT3
SD-2:SD_CMD		
SD-3:GND		
SD-4:CARD_3V3		
SD-5:SD_CLK		
SD-6:GND		
SD-7:MS_SD_DAT0		
SD-8:SD_DAT1		

Jumper/Header Name	Function	Definition
<p>Card Reader 1</p>		SD-9:SD_DAT2
		SD-CD1:GND
		SD-CD2:SD_CD#
		SD-WP1:GND
		SD-WP2:SD_WP
		MS-1:GND
		MS-2:MS_BS
		MS-3:MS_D1
		MS-4:MS_SD_DAT0
		MS-5:MS_D2
		MS-6:MS_INS#
		MS-7:MS_D3
		MS-8:CR_CLK
		MS-9:CARD_3V3
		MS-10:GND
		G1:GND
		G2:GND
		XD-1:GND
		XD-2:XD_CD#
		XD-3:XD_RDY
		XD-4:XD_RE#
		XD-5:XD_CE#
		XD-6:XD_CLE
		XD-7:XD_ALE
		XD-8:XD_WE#
		XD-9:XD_WP#
		XD-10:GND
		XD-11:XD_D0
	XD-12:XD_D1	
	XD-13:XD_D2	
	XD-14:XD_D3	
	XD-15:XD_D4	
	XD-16:XD_D5	
	XD-17:XD_D6	

Jumper/Header Name	Function	Definition
		XD-18:XD_D7
		XD-19:CARD_3V3
	COM1 PORT	1:JD CD1J
		2:JSIN1
		3:JSOUT1
		4:JDTR1J
		5:GND
		6:JDSR1J
		7:JR TS1J
		8:JCT S1J
		9:JRI1J
		10:GND
		11:GND

FRU (Field Replaceable Unit) List

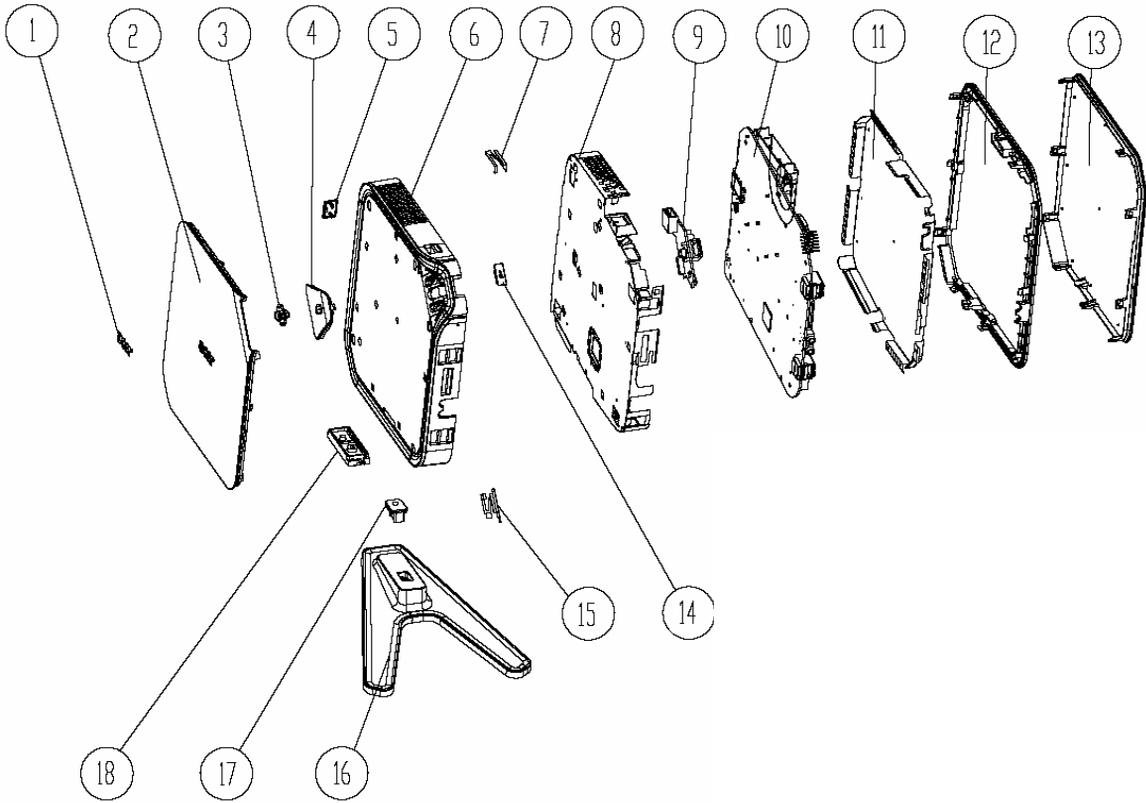
This chapter offers the FRU (Field Replaceable Unit) list in global configuration of the Aspire R3700 desktop computer. Refer to this chapter whenever ordering the parts to repair or for RMA (Return Merchandise Authorization).

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 defective parts, 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.

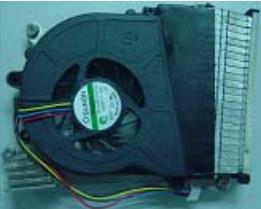
Aspire R3700 Exploded Diagram

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



ITEM	NAME	ITEM	NAME
1	ACER LOGO	10	MOTHER BOARD
2	TOP COVER	11	SHEETMETAL TOP
3	LED LENS	12	COVER PANNEL
4	POWER BUTTON	13	BOT COVER
5	PLUG HDMI	14	USB RELEASE
6	MAIN BEZEL	15	ANTENNA
7	ANTENNA	16	FOOT STAND
8	SHEETMETAL BOT	17	FOOT STAND HEAD
9	DAUGHTER BOARD	18	BAFFLE

Aspire R3700 FRU List

Category	Description	Part Number	Exploded Diagram Item
MB			
	Mainboard R3700 nVidia NM10 Proprietary LF w/o eSATA, w/ HDMI,S/PDIF , D525	MB.SEM09.00 1	10
Bezel			
	Aspire Bezel AL150 w/front USB2.0x2 , CR, 2 audio jack; w/ rear USB2.0x4, RJ45, VGA/ HDMI, SPDIF, w/Y stand for aPluto	PZ.11900.207	N/A
Chassis			
	Chassis uLtraSFF HL102A w/ front USB2.0x2 w/ front CR w/foot stand for aPluto	HS.13100.155	N/A
Cooler			
	aPluto (DDR3) Cooler Intel Pineview w/GPU NBT-PCPLUTO-A1 Processor-Intel Pineview D410/D510, VGA Nv	HI.10800.084	N/A
CPU			
	Atom D525 (1.8G 1024K) Pineview-D	KC.ADB01.52 5	N/A
Memory			
	Memory SAMSUNG SO-DIMM DDRIII 1333 1GB M471B2873FHS-CH9 LF 128*8 46nm	KN.1GB0B.03 5	N/A
	Memory UNIFOSA SO-DIMM DDRIII 1333 1GB GU672203EP0200 LF 128*8 0.065um	KN.1GB0H.01 7	
	KINGSTON SO-DIMM DDRIII 1333 1GB ACR128X64D3S1333C9 LF 128*8 0.065um	KN.1GB07.00 4	
	Memory MICRON SO-DIMM DDRIII 1333 2GB MT8JSF25664HZ-1G4D1 LF 256*8 0.055um	KN.2GB04.01 7	
	Memory HYNIX SO-DIMM DDRIII 1333 2GB HMT325S6BFR8C-H9 LF 256*8 46nm	KN.2GB0G.01 8	
	Memory NANYA SO-DIMM DDRIII 1333 2GB NT2GC64B88B0NS-CG LF 256*8 46nm	KN.2GB03.02 1	
HDD			

Category	Description	Part Number	Exploded Diagram Item
	"HDD HGST 2.5"" 5400rpm 160GB HTS545016B9A300 Panther B SATA LF F/ W:C60F Disk imbalance criteria = 0.0"	KH.16007.026	N/A
	"HDD WD 2.5"" 5400rpm 160GB WD1600BEVT-22A23T0 , WD, ML320S SATA 8MB LF F/W:01.01A01 "	KH.16008.027	
	"HDD HGST 2.5"" 5400rpm 250GB HTS545025B9A300 Panther B SATA LF F/ W:C60F Disk imbalance criteria = 0.0"	KH.25007.016	
	"HDD HGST 2.5"" 5400rpm 320GB HTS545032B9A300 Panther B SATA LF F/ W:C60F Disk imbalance criteria = 0.0"	KH.32007.008	
	"HDD WD 2.5"" 5400rpm 320GB WD3200BEVT-22A23T0,ML320S,WD SATA 8MB LF F/W:01.01A01 "	KH.32008.019	
	"HDD HGST 2.5"" 5400rpm 500GB HTS545050B9A300 Panther B SATA LF F/ W:C60F Disk imbalance criteria = 0.0 "	KH.50007.010	
Wireless LAN (mini-card)			
	Lite-On WN6602R, Ralink RT3090 WLAN Lite- On WN6602R, Ralink RT3090, 802.11b/g/n 1x1 WLAN (mini-card) Full Size	NI.10200.035	N/A
Adapter			
	ADP-65JH DBA (LV5)	AP.06501.026	N/A
	Adapter HIPRO 65W 19V 1.7x5.5x11 Yellow HP-A0652R3B 2LF, LV5 (for DT) LED LF	AP.0650A.014	
USB Mouse			
	Logitech optical mouse USB M-U0005 Black	MS.11200.057	N/A
RF Mouse			
	black mouse RF2.4 MGR0919 with Receiver	MS.11200.059	N/A

Category	Description	Part Number	Exploded Diagram Item
USB Keyboard			
	Keyboard CHICONY KU-0906 USB 85KS Black US	KB.USB03.24 0	N/A
	Keyboard CHICONY KU-0906 USB 86KS Black UK	KB.USB03.24 1	
	Keyboard CHICONY KU-0906 USB 86KS Black Spanish Latin	KB.USB03.24 2	
	Keyboard CHICONY KU-0906 USB 86KS Black Canadian French	KB.USB03.24 3	
	Keyboard CHICONY KU-0906 USB 89KS Black Japanese	KB.USB03.24 4	
	Keyboard CHICONY KU-0906 USB 85KS Black Traditional Chinese	KB.USB03.24 5	
	Keyboard CHICONY KU-0906 USB 86KS Black Brazilian Portuguese	KB.USB03.27 3	
	Keyboard CHICONY KU-0906 USB 85KS Black Czech	KB.USB03.27 4	
	Keyboard CHICONY KU-0906 USB 85KS Black US International	KB.USB03.27 5	
	Keyboard CHICONY KU-0906 USB 85KS Black Arabic/English	KB.USB03.27 6	
	Keyboard CHICONY KU-0906 USB 85KS Black Thailand	KB.USB03.27 7	
	Keyboard CHICONY KU-0906 USB 86KS Black Spanish	KB.USB03.27 8	
	Keyboard CHICONY KU-0906 USB 86KS Black Portuguese	KB.USB03.27 9	
	Keyboard CHICONY KU-0906 USB 86KS Black German	KB.USB03.28 0	
	Keyboard CHICONY KU-0906 USB 86KS Black Italian	KB.USB03.28 1	
	Keyboard CHICONY KU-0906 USB 86KS Black French	KB.USB03.28 2	
	Keyboard CHICONY KU-0906 USB 86KS Black Swedish	KB.USB03.28 3	
	Keyboard CHICONY KU-0906 USB 86KS Black Dutch	KB.USB03.28 4	
	Keyboard CHICONY KU-0906 USB 86KS Black Swiss/G	KB.USB03.28 5	
	Keyboard CHICONY KU-0906 USB 86KS Black Belgium	KB.USB03.28 6	
Keyboard CHICONY KU-0906 USB 86KS Black Icelandic	KB.USB03.28 7		
Keyboard CHICONY KU-0906 USB 86KS Black Norwegian	KB.USB03.28 8		

Category	Description	Part Number	Exploded Diagram Item
	Keyboard CHICONY KU-0906 USB 85KS Black Hebrew	KB.USB03.28 9	
	Keyboard CHICONY KU-0906 USB 86KS Black Polish	KB.USB03.29 0	
	Keyboard CHICONY KU-0906 USB 86KS Black Slovenian	KB.USB03.29 1	
	Keyboard CHICONY KU-0906 USB 86KS Black Slovak	KB.USB03.29 2	
	Keyboard CHICONY KU-0906 USB 85KS Black Russian	KB.USB03.29 3	
	Keyboard CHICONY KU-0906 USB 86KS Black Hungarian	KB.USB03.29 4	
	Keyboard CHICONY KU-0906 USB 85KS Black Greek	KB.USB03.29 5	
	Keyboard CHICONY KU-0906 USB 86KS Black Danish	KB.USB03.29 6	
	Keyboard CHICONY KU-0906 USB 86KS Black Romanian	KB.USB03.29 7	
	Keyboard CHICONY KU-0906 USB 86KS Black Turkish	KB.USB03.29 8	
	Keyboard CHICONY KU-0906 USB 86KS Black Turkish-Q	KB.USB03.29 9	
	Keyboard CHICONY KU-0906 USB 86KS Black Arabic/French	KB.USB03.30 0	
	Keyboard CHICONY KU-0906 USB 85KS Black Kazakh	KB.USB03.30 1	
	Keyboard CHICONY KU-0906 USB 85KS Black Turkmen	KB.USB03.30 2	
	Keyboard CHICONY KU-0906 USB 86KS Black Nordic	KB.USB03.30 3	
	Keyboard CHICONY KU-0906 USB 85KS Black Simplified Chinese	KB.USB03.30 4	
	Keyboard CHICONY KU-0906 USB 86KS Black Czech/Slovak	KB.USB03.31 2	
	Keyboard CHICONY KU-0906 USB 86KS Black English/Canadian French	KB.USB03.31 7	
	Keyboard CHICONY KU-0906 USB 85KS Black Korean	KB.USB03.31 9	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black US	KB.RF403.173	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black UK	KB.RF403.174	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Spanish Latin	KB.RF403.175	

Category	Description	Part Number	Exploded Diagram Item
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Canadian French	KB.RF403.176	
	Keyboard CHICONY KG-0917 RF2.4 89KS Black Japanese	KB.RF403.177	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Traditional Chinese	KB.RF403.178	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Czech	KB.RF403.211	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black US International	KB.RF403.213	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Arabic/English	KB.RF403.214	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Thailand	KB.RF403.215	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Spanish	KB.RF403.216	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Portuguese	KB.RF403.217	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Brazilian Portuguese	KB.RF403.218	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black German	KB.RF403.219	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Italian	KB.RF403.220	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black French	KB.RF403.221	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Swedish	KB.RF403.222	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Dutch	KB.RF403.223	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Swiss/G	KB.RF403.224	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Belgium	KB.RF403.225	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Icelandic	KB.RF403.226	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Norwegian	KB.RF403.227	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Hebrew	KB.RF403.228	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Polish	KB.RF403.229	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Slovenian	KB.RF403.230	

Category	Description	Part Number	Exploded Diagram Item
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Slovak	KB.RF403.231	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Russian	KB.RF403.232	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Hungarian	KB.RF403.233	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Greek	KB.RF403.234	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Danish	KB.RF403.235	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Romanian	KB.RF403.236	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Turkish	KB.RF403.237	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Turkish-Q	KB.RF403.238	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Arabic/French	KB.RF403.239	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Kazakh	KB.RF403.240	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Turkmen	KB.RF403.241	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Nordic	KB.RF403.242	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Simplified Chinese	KB.RF403.243	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black Czech/Slovak	KB.RF403.286	
	Keyboard CHICONY KG-0917 RF2.4 86KS Black English/Canadian French	KB.RF403.487	
	Keyboard CHICONY KG-0917 RF2.4 85KS Black Korean	KB.RF403.524	
Speaker			
	Neosonica mini speaker USB black; meet win7	SP.10600.034	N/A
D-Sub Cable			
	VGA Cable DSUB to DSUB 155mm	PC.13400.045	N/A
Mounting Kit			
	Hornet Mounting Kit Mounting kit for a/p/g	PC.13400.041	N/A
Webcam			
	1.3M stand alone webcam USB V-U0008-0 with Stand (White)	PC.13400.035	N/A