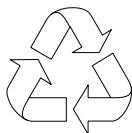# Veriton N2110G
ThinClient Computer Service Guide

100% Recycled Paper

Revision History

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

Date	Version	Chapter	Updates
07-31-2012	First Draft		
07-31-2012	V1.00		

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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.

Table of Contents

Table of Contents

Features and Specifications

This chapter lists the features and specifications of the Veriton N2110G ThinClient computer.

NOTE The items listed in this section are for reference only. The exact configuration of your TC depends on the model purchased. Refer to the FRU list chapter on page 53 for a detailed list of models supported by each hardware component.

System Features

Component	Description
Operating system support	• Microsoft Windows Embedded Standard 7 SP1 (WES7) • Devon - Detos v7.1.x
Processor	AMD Fusion APU G-T56N Dual core 1.65GHz
Chipset	AMD Hudson A55E FCH
Graphics controller	Integrated in the AMD Hudson A55E Chipset
Memory	• Two DIMM slots supporting 240-pin unbuffered DDR3 SDRAM modules • Data rate supported: 800/1066/1333 MT/s • Maximum memory: 4 GB (using two 2 GB modules)
Connectivity	• Wired LAN: BCM57781B0KMLG QFN 10/100/1000 • WLAN option: 802.11 a/b/g/n wireless network adapter
Media Storage	One SATA 3.0 SSD slot (8G or 16G capacities)
Power supply	Universal AC Adapter, 100V~240V, 50-60Hz, 12V/4A output

Audio

Item	Description
Audio codec	Realtek ALC 269Q-VC2-GR
Audio jacks	• Front panel: Headphone/line-out and microphone/line-in jacks • Rear panel: Headphone/line-out and microphone/line-in jacks

I/O Ports and LED Indicators

Component	Description

I/O ports	• Front panel
	  – USB ports (two)
	  – Headphone/line-out jack
	  – Microphone/line-in jack
	• Rear panel
	  – Two HDMI port
	  – USB ports (2*USB2.0, 2*USB3.0)
	  – Ethernet jack (RJ45)
	  – Headphone/line-out jack
	  – Microphone/line-in jack
	  – DC-in jack

LED display and buttons	• Power LED • LAN LED

Physical Specifications

Aspect	Description
Chassis dimension (W × D × H)	40 mm (W) x 213 mm (D) x 259 mm (H)
System weight	1.407 Kg.
Mainboard form factor	microATX (µATX)
Mainboard dimensions (W × H)	175mm*205mm, 6 Layers

Environmental Requirements

Aspect	Description
Operating temperature	0 to 35 °C (32 to 95 °F)
Operating humidity	20% to 80% RH non-condensing

System Tour

The pictures and tables in this section illustrate the physical outlook of the computer.

Front View
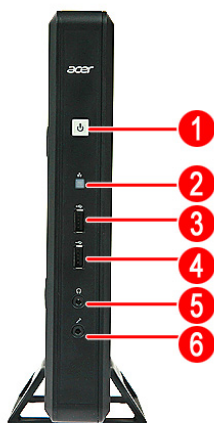
No.	Component
1	Power button/indicator
2	LAN LED indicator
3 ~ 4	USB 2.0 ports
5	Headphone/line-out jack
6	Microphone/line-in jack

Rear Panel
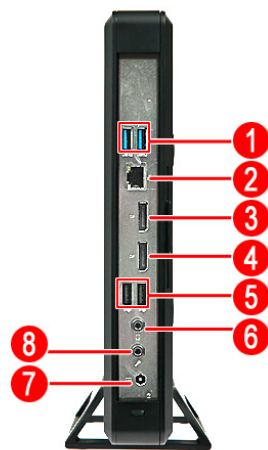
No.	Component
1	USB 3.0 ports
2	LAN connector
3 ~ 4	HDMI ports
5	USB 2.0 ports
6	Headphone/line-out jack
7	DC-in jack
8	Microphone/line-in jack

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 can not retain configuration values in CMOS. Ask a qualified technician for assistance.

CMOS setup loads the configuration values in a battery-backed non-volatile 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 as those found in your system.

Entering CMOS Setup

1. Turn on the computer and the monitor.

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

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

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

   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.
- **+** 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.
- **F7** – Press to load user default values.
- **F8** – Press to save user default values.
- **F9** – Press to load optimized 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.

- Info
- Advanced
- Boot
- Security
- Exit

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

Info

The Info menu displays basic information about the system.
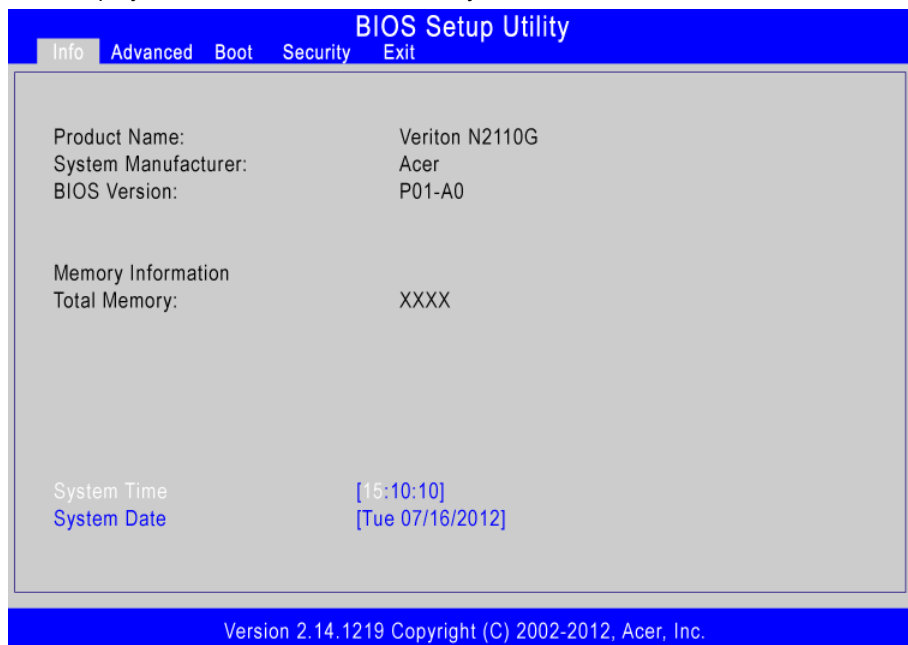
Parameter	Description
Product Name	Displays the product name (15 characters).
System Manufacturer	Displays the system manufacturer.
BIOS Version	Displays the current system BIOS version.
Memory Information	
Total Memory	Total size of system memory installed on the system.
System Date	Set the date following the weekday-month-day-year format.
System Time (hh:mm:ss)	Set the system time following the hour-minute-second format.

Advanced
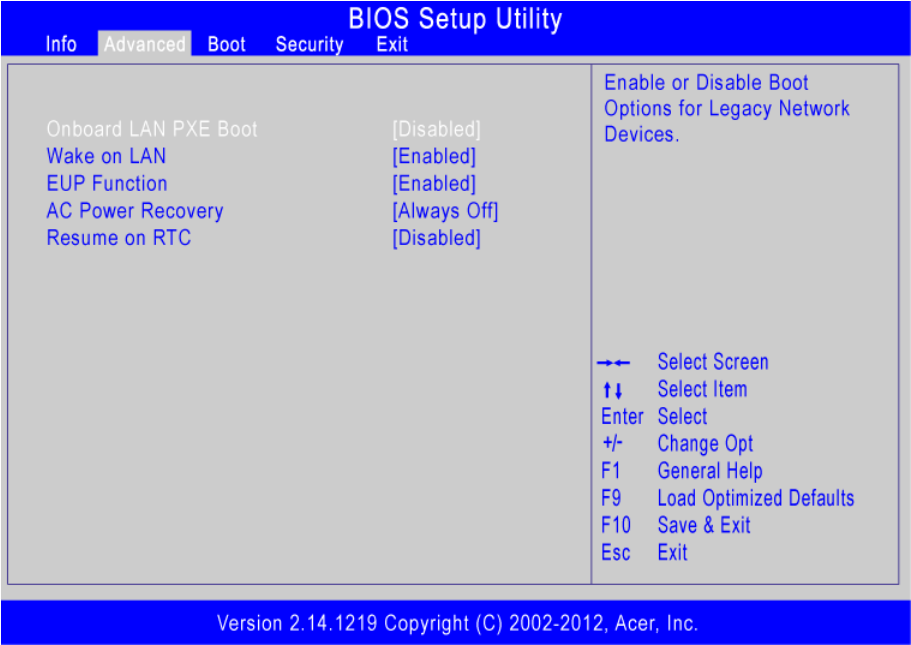
Parameter	Description	Option
Onboard LAN PXE Boot	Enable or Disable Boot Option for Legacy Network Devices.	Enabled **Disabled**
Wake up on LAN	Turning this feature on will wake the system up when the internal LAN device receives a Magic Packet in Power-Off state.	**Enabled** Disabled
EUP Function	Enable/Disable EUP Function.	**Enabled** Disabled
AC Power Recovery	Specifies behaviour on AC power recovery after AC power is disconnected and then plugged in.	On **Always Off**
Resume on RTC	Enable/Disable RTC Function. Note: The RTC function will not work in S5 when EUP function is enabled.	Enabled **Disabled**

Boot
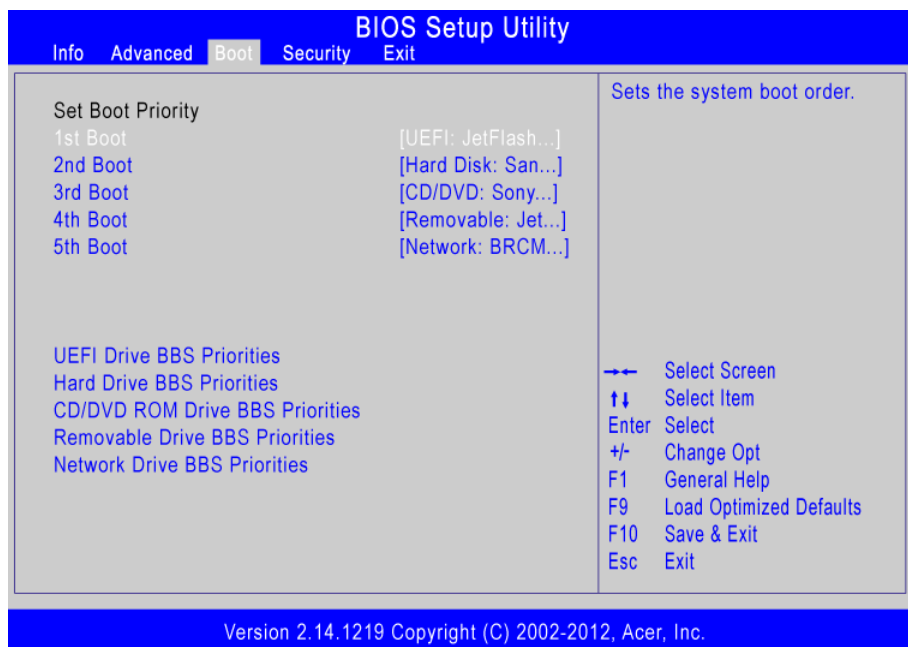
Parameter	Description	Option
Set Boot Priority		
1st/2nd/3rd/4th/5th Boot Device	Specifies the boot order from the available devices.	**EFI** Hard Disk CD/DVD Removable Device Network Device

Security

```
                          BIOS Setup Utility
   Info    Advanced   Boot   Security   Exit

                                                Set Administrator Password.

   Administrator Password
   User Password


                                             →←   Select Screen
                                             ↑↓   Select Item
                                             Enter  Select
                                             +/-    Change Opt
                                             F1     General Help
                                             F9     Load Optimized Defaults
                                             F10    Save & Exit
                                             Esc    Exit

          Version 2.14.1219 Copyright (C) 2002-2012, Acer, Inc.
```
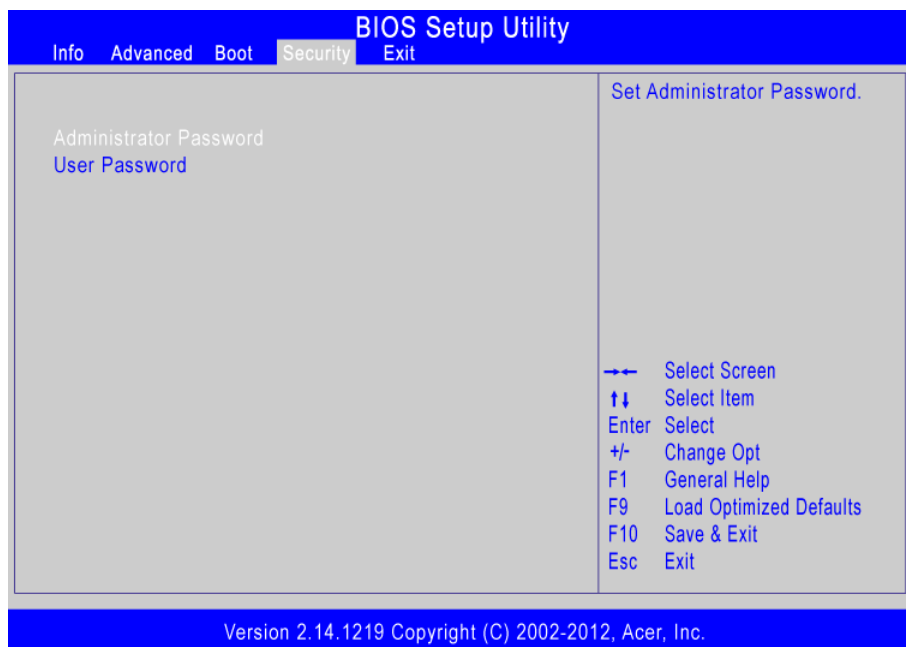
Parameter	Description	Option
Administrator Password	Indicates the status of the supervisor password.	**Installed** Not Installed
User Password	Indicates the status of the User password.	**Installed** Not Installed

Setting an system password

1. Use the up/down arrow keys to select a password parameter (Set Administrator Password or Set User Password) menu then press **Enter**. A password box will appear.
2. Type a password then press **Enter**.

    The password may consist up to twenty alphanumeric characters (A-Z, a-z, 0-9) with a minimum of three characters required.
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 system password

1. Use the up/down arrow keys to select password parameter (Change Administrator Password or Change User 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 system password

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

Exit
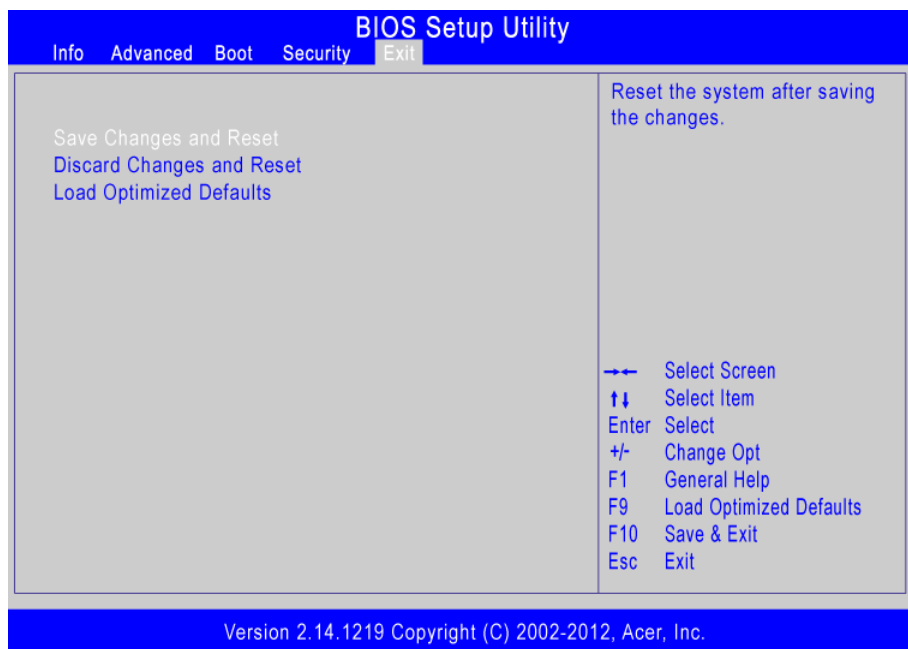
Parameter	Description
Save Changes and Reset	Reset the system after saving the changes of setup menu.
Discard Changes and Reset	Reset without saving.
Load Optimized Defaults	Restore/Load Defaults values for all the setup options.

System Disassembly

This chapter contains step-by-step procedures on how to disassemble the ThinClient 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
- Philips screwdriver

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.

Disassembly Procedures

Removing the Computer Stand

1. Place the computer on its side in a flat surface.
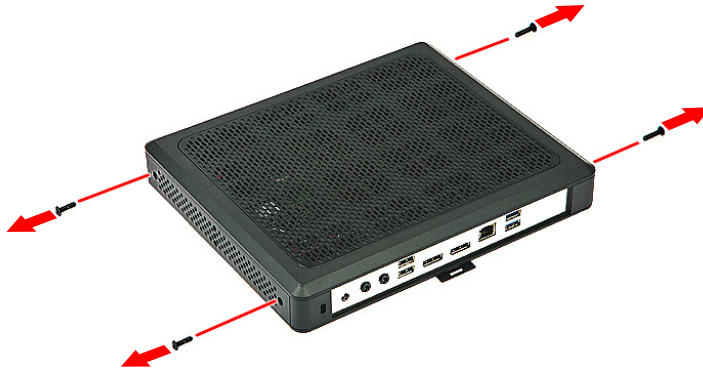2. Remove the screw securing the computer stand to the chassis.

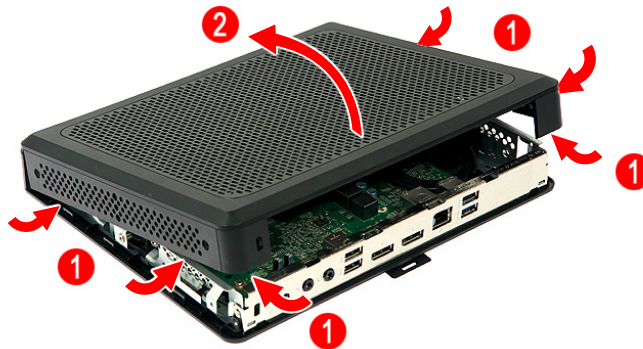3. Pull the computer stand away from the chassis.

Removing the Side Panel

1.   Remove the four screws securing the side panel to the chassis.

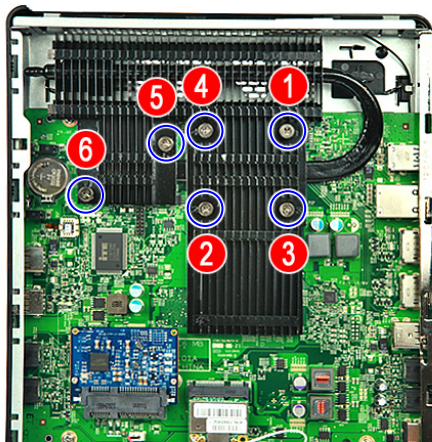2.   Gently pry the sides of the panel away from the chassis (**1**) then detach the side panel (**2**).

Removing the Heatsink Assembly

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

1. Loosen the six screws that secure the heatsink assembly to the mainboard.

2. Lift the heatsink assembly off the mainboard.
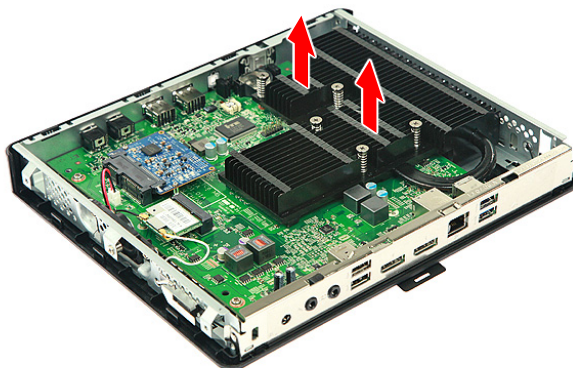
Removing the Speaker Module

1. Disconnect the speaker cable from the mainboard.
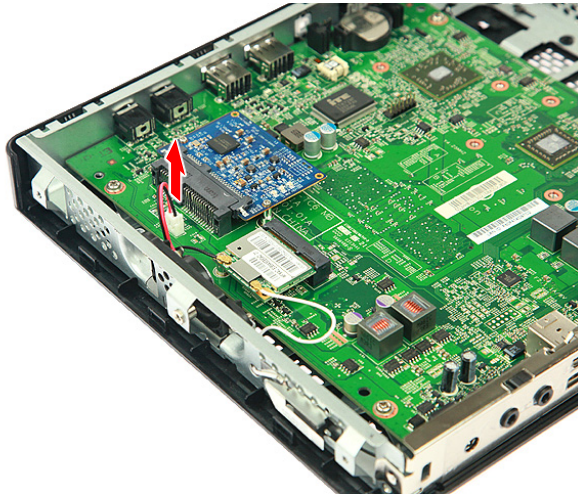
2. Remove the two screws securing the speaker module to the chassis.
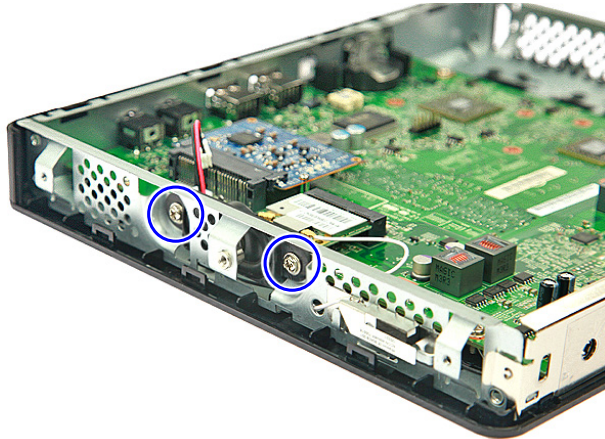
3. Lift the speaker module from the chassis.
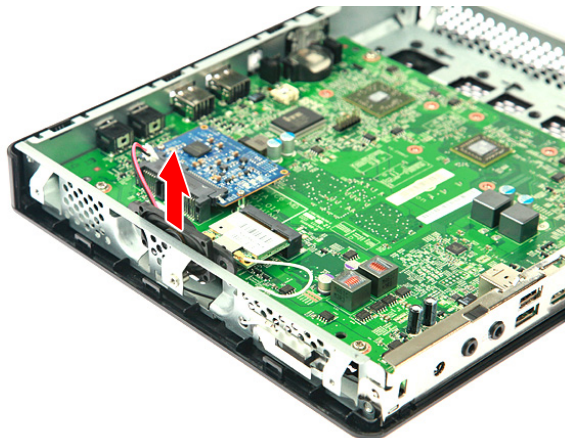
Removing the WLAN Module

1. Disconnect the antenna cables from the WLAN card.
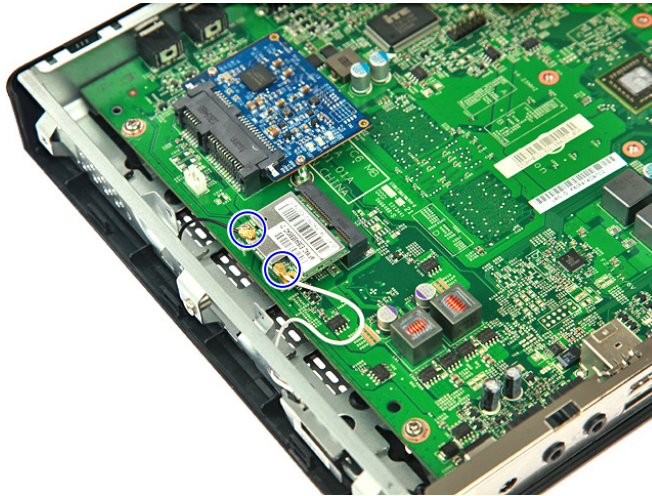
NOTE: For reference during machine reassembly, note which cable color corresponds to the main (white) and auxiliary (black) connectors.

2. Remove the screw securing the WLAN module to the mainboard.
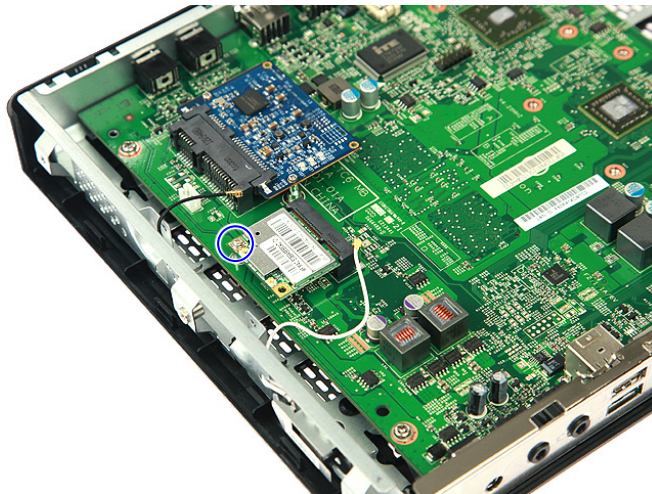
3. Detach the WLAN module from the mainboard.
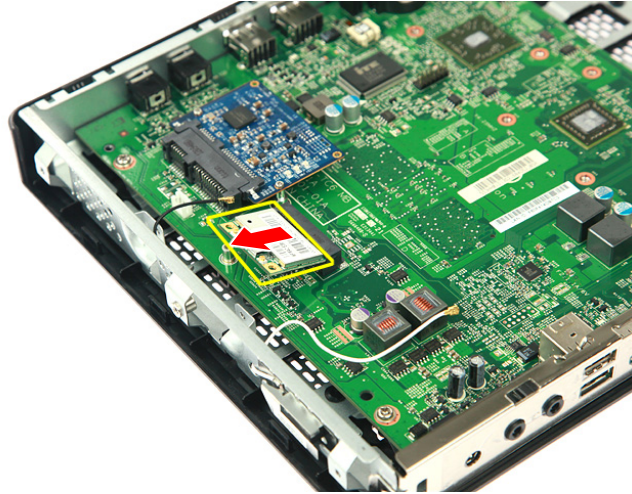
⚠️ **Note:** A circuit board >10 cm^2 has been highlighted with the yellow rectangle as above image shows. Please follow local regulations for disposal of detached circuit boards.

Removing the SSD Module

1. Remove the two screws securing the SSD module to the mainboard.

2. Detach the SSD module from the mainboard.
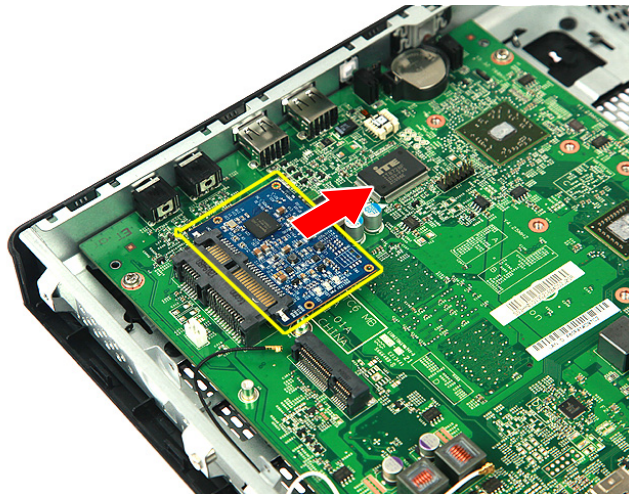
Note: A circuit board >10 cm^2 has been highlighted with the yellow rectangle as above image shows. Please follow local regulations for disposal of detached circuit boards.

Removing the Mainboard

1. Detach the rear IO bracket from the chassis.
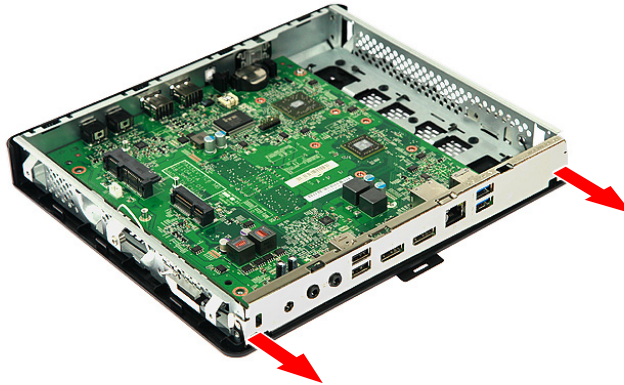
2. Remove the four screws that secure the mainboard to the chassis.
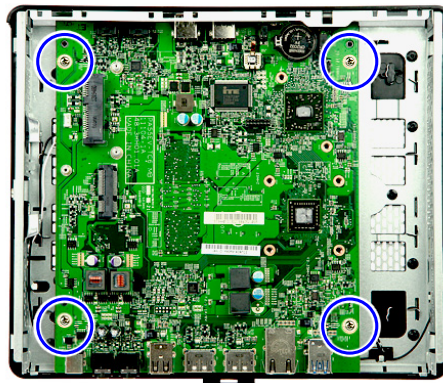
3. Gently lift the board off the chassis.
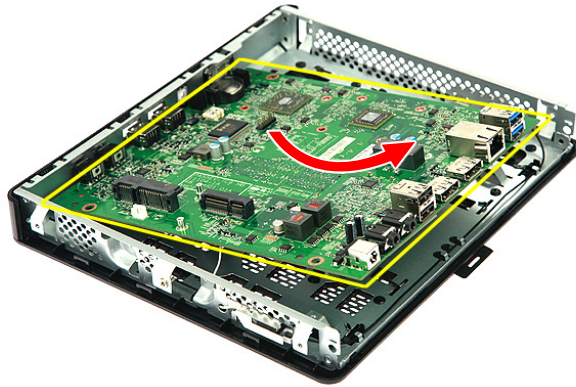
![warning icon] **Note:** A circuit board >10 cm^2 has been highlighted with the yellow rectangle as above image shows. Please follow local regulations for disposal of detached circuit boards.

4. Gently push the RTC battery sideways (**1**), then lift it off the mainboard (**2**).
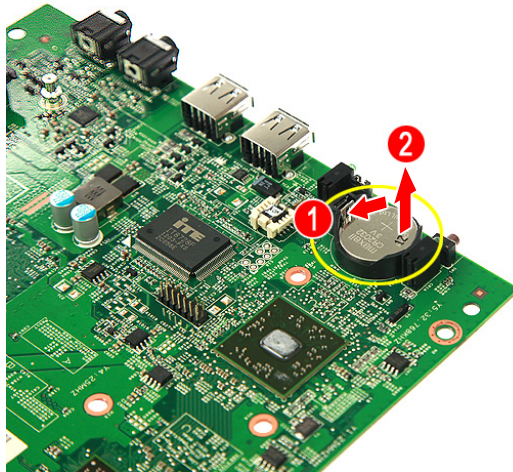
![warning icon] **Note:** The RTC battery has been highlighted with the yellow circle as above image shows. Please follow local regulations for disposal of used batteries.

![warning icon] **Caution:** Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Removing the Memory Modules

1. Turn the mainboard over to access the DIMM slots at the bottom of the mainboard.

2. Press outward the holding clips on both sides of the DIMM slot to release the DIMM (**1**), then gently pull the DIMM upward to remove it from the chassis (**2**).
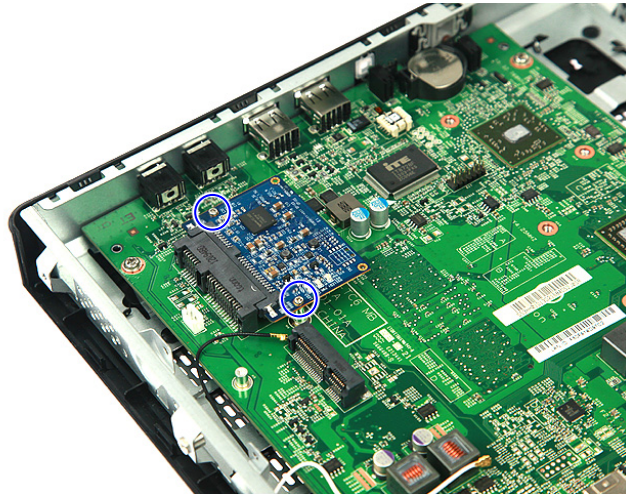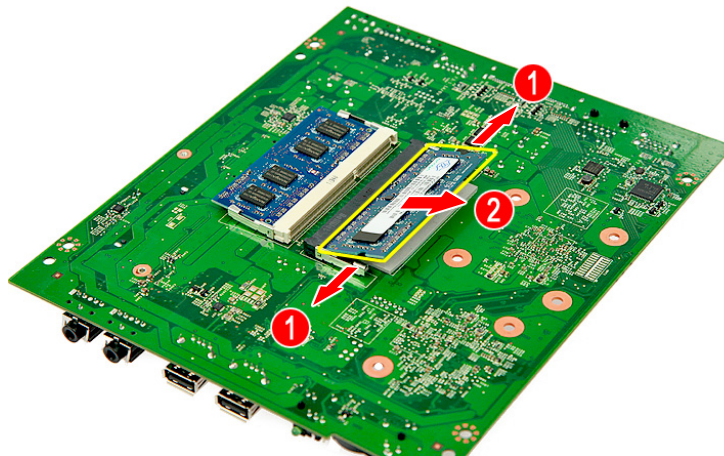

Note: A circuit board >10 cm^2 has been highlighted with the yellow rectangle as above image shows. Please follow local regulations for disposal of detached circuit boards.

3. Repeat Step 2 to remove the remaining memory module.

Removing the WLAN Antenna

1. Detach the black antenna cable from the latches that secures it to the chassis.
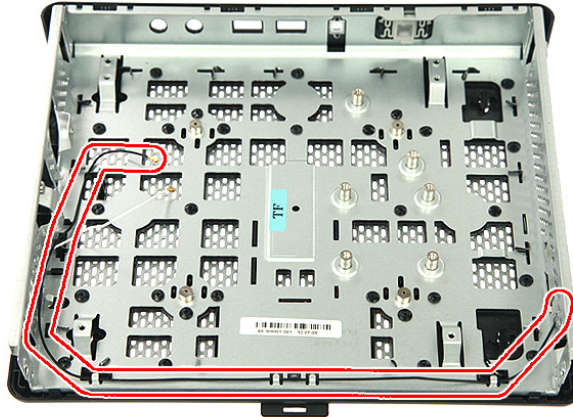
2. Gently lift the antenna clip with black cable from its socket.
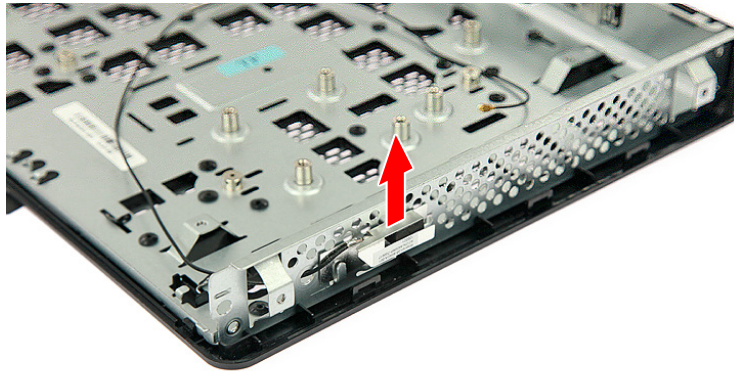
3. Remove the antenna clip with black cable from the chassis.
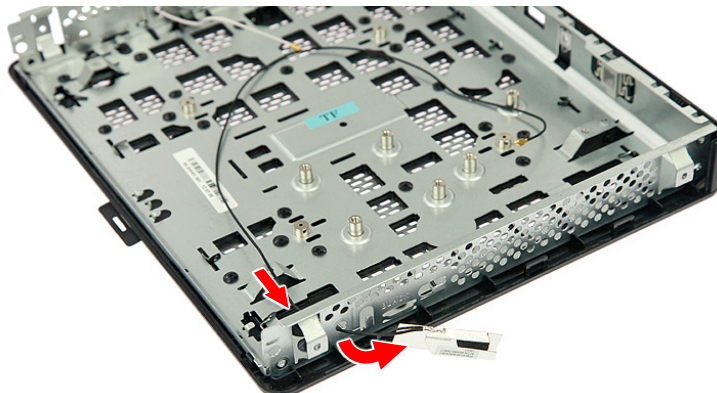
4. Gently lift the antenna clip with white cable from its socket.
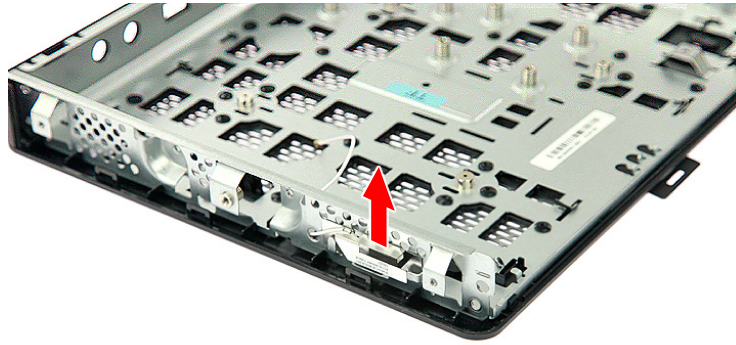
5. Remove the antenna clip with white cable from the chassis.
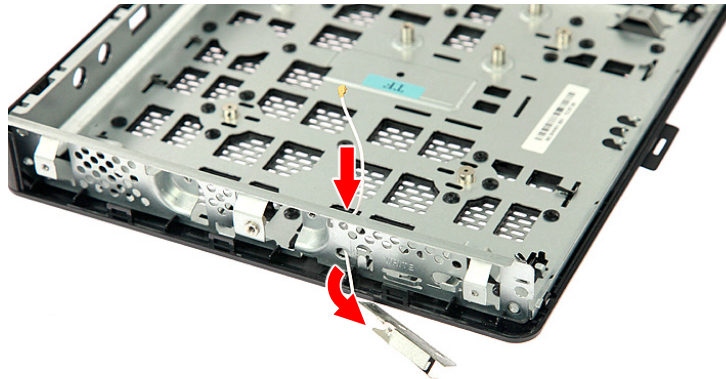
Reassembly Procedures

Reinstalling the WLAN Antenna

1. Insert the antenna clip with white cable into the chassis.
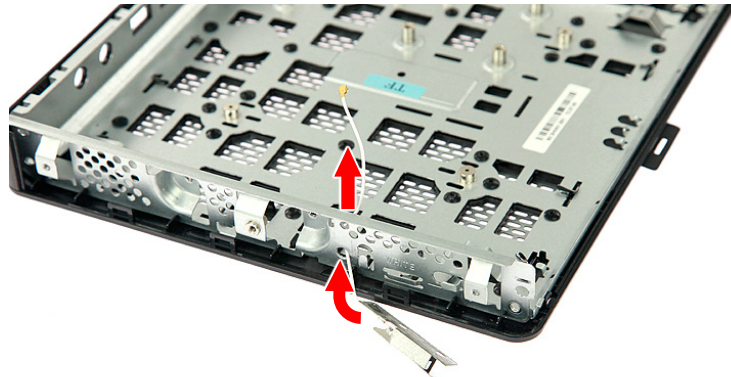
2. Place the antenna clip with white cable into its socket.
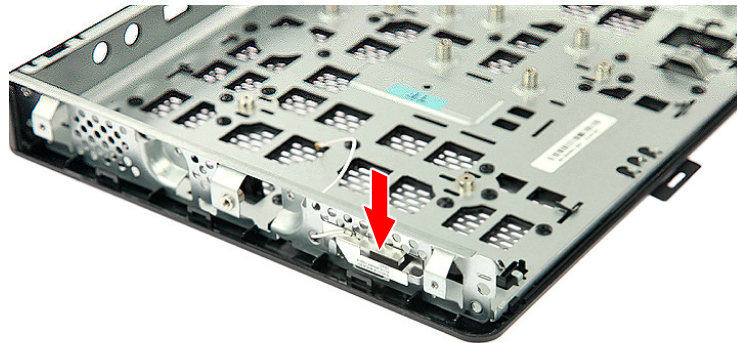
1. Insert the antenna clip with black cable into the chassis.
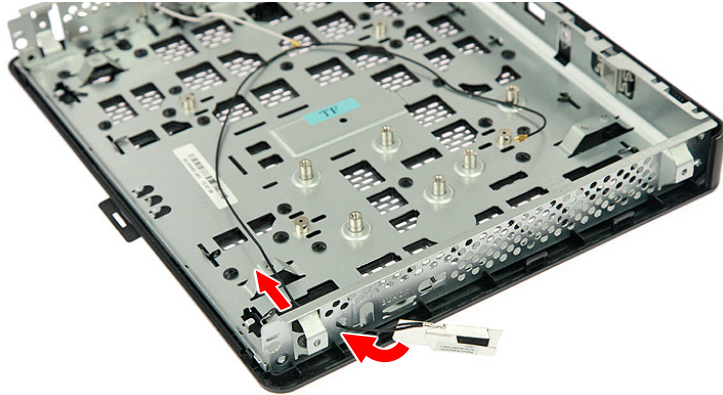
2. Place the antenna clip with black cable into its socket.
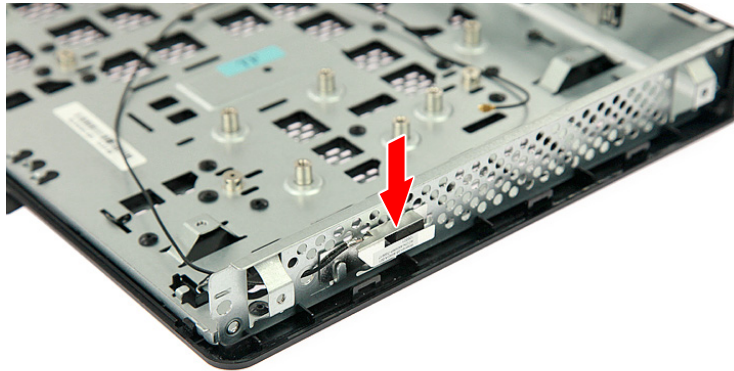
3. Secure the black antenna cable to the chassis by inserting it into the latches as shown.
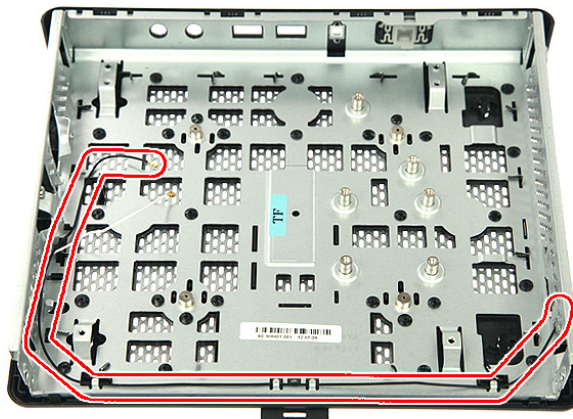
Reinstalling the Memory Modules

1. Insert the memory module into the DIMM slot (**1**), then press it down until it latch into place (**2**).
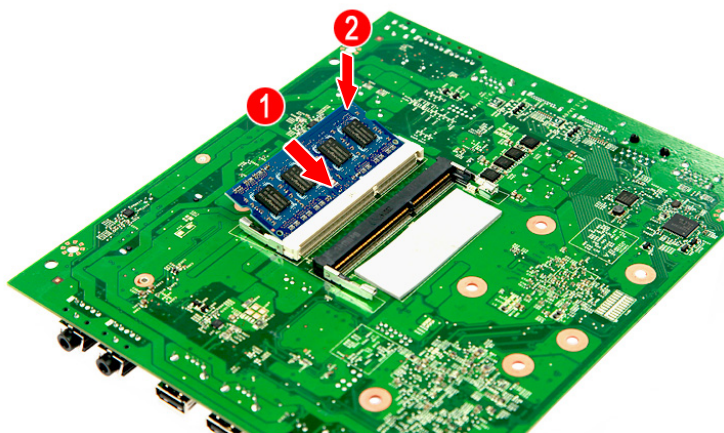
2. Repeat Step 1 to install the other memory module.

IMPORTANT   When installing DIMM modules, populate the DIMM slots according to the table below:

Size	DIMM1 (XMM1)	DIMM2 (XMM2)
2G		2G
4G	2G	2G

Reinstalling the Mainboard

1. Slide the RTC battery into its socket in the mainboard until it latches into place.
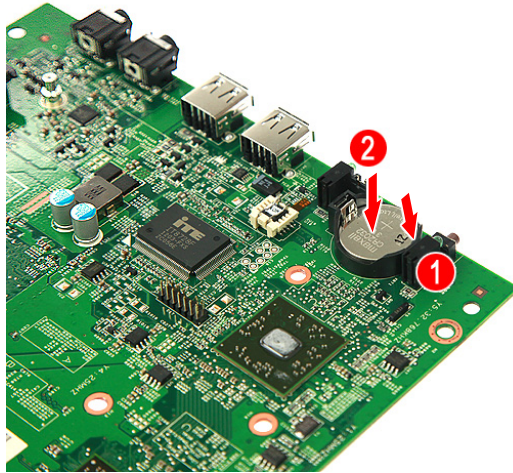
2. Slide the mainboard into the chassis.
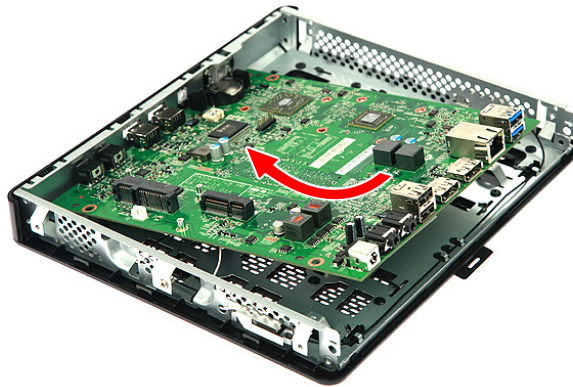
3. Secure the mainboard to the chassis using four screws.
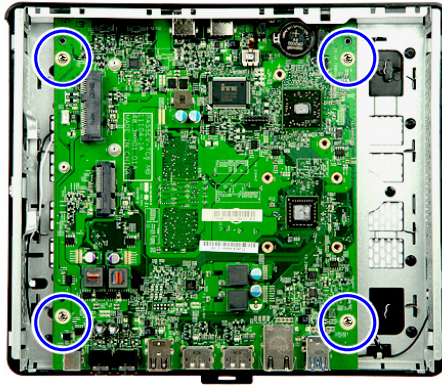
4. Align the latches of the rear IO bracket with the chassis (**1**), then gently push until the bracket latch into place (**2**).
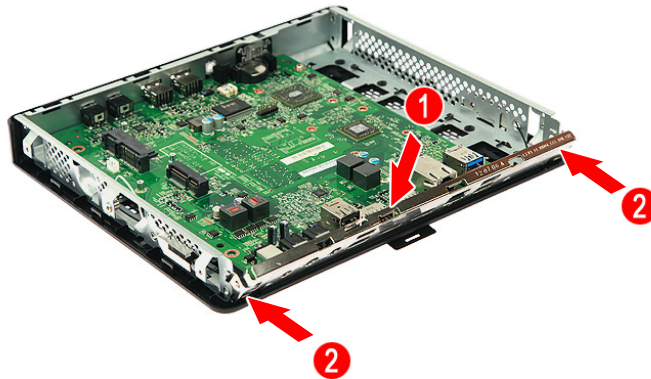
Reinstalling the SSD Module

1. Insert the SSD module into the mainboard.
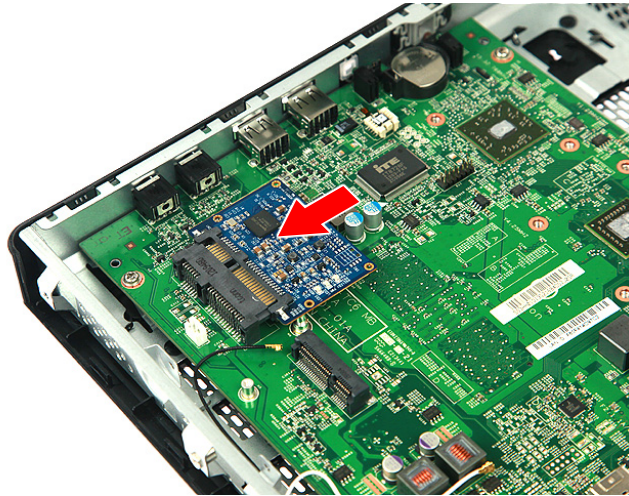
2. Secure the SSD module to the mainboard using two screws.
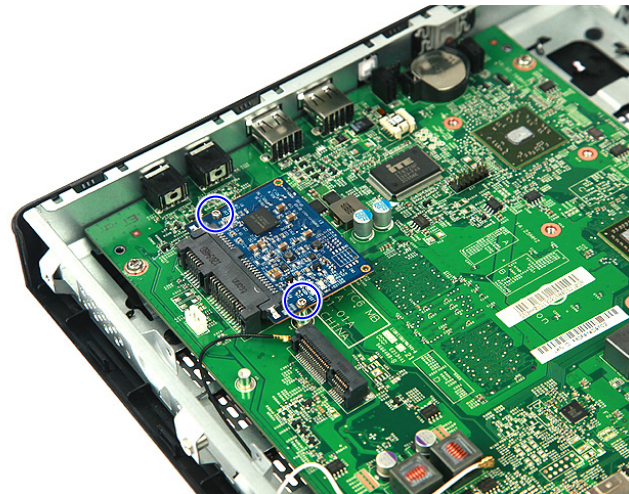
Reinstalling the WLAN Module

1. Detach the WLAN module from the mainboard.
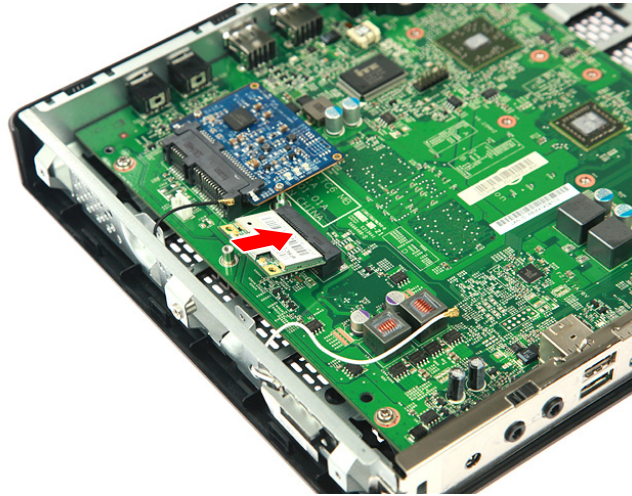
2. Secure the WLAN module to the mainboard using one screw.
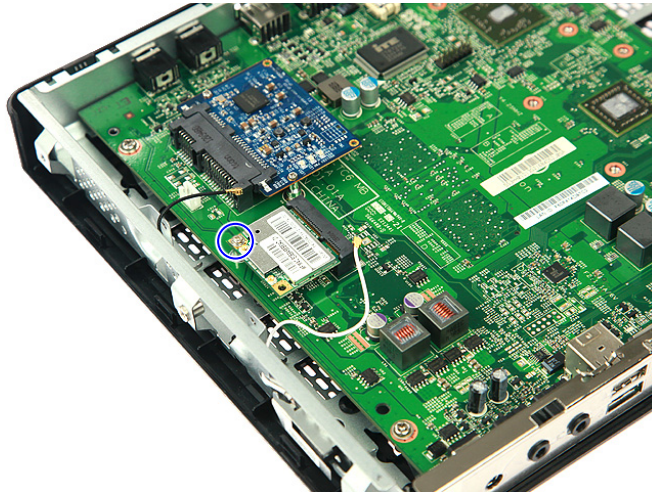
3. Connect the antenna cables to the WLAN card.
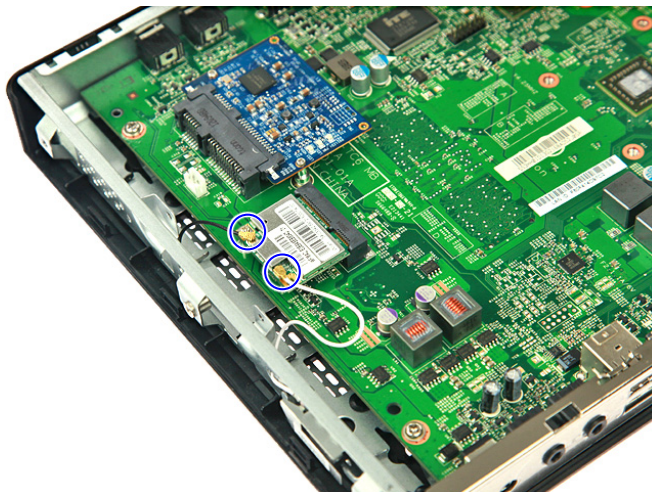
NOTE: For reference during machine reassembly, note which cable color corresponds to the main (white) and auxiliary (black) connectors.

Reinstalling the Speaker Module

1. Place the speaker module into the chassis.
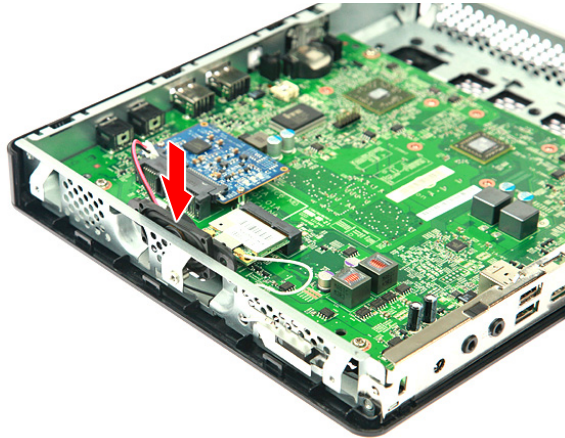
2. Secure the speaker module to the chassis using two screws.

3. Connect the speaker cable to the mainboard.
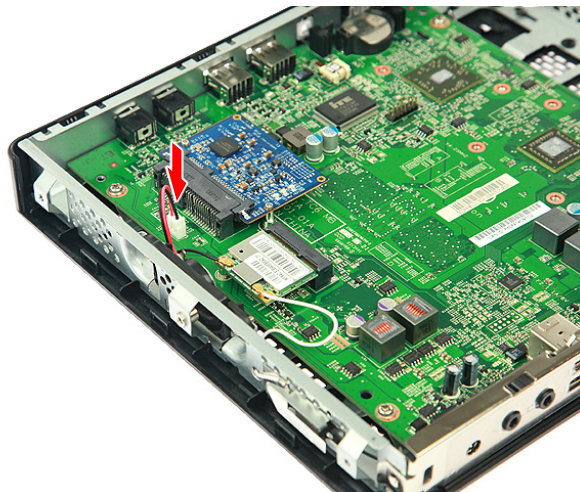
Reinstalling the Heatsink Assembly

> **WARNING:** The heatsink becomes very hot when the system is on. NEVER touch the heatsink with any metal or with your bare hands.

1. Place the heatsink assembly into the mainboard.
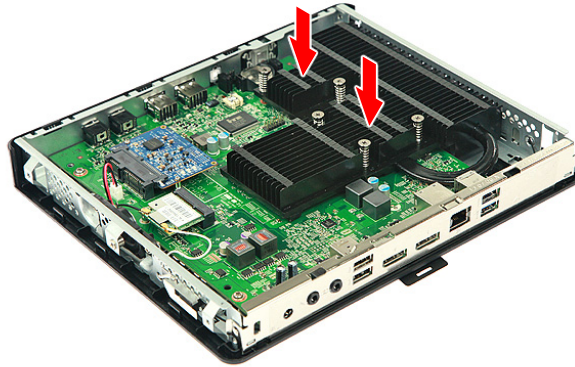
2. Tighten the six screws that secure the heatsink assembly to the mainboard.
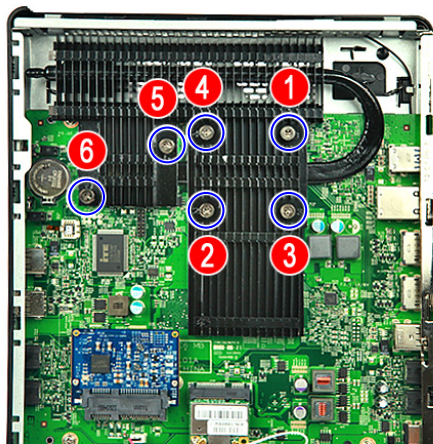
Reinstalling the Side Panel

1. Place the side panel into the chassis then press on all sides until it latches into place.
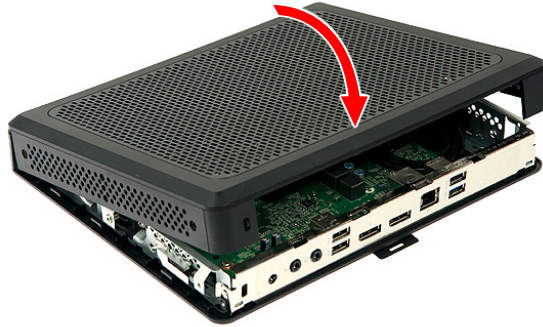
2. Secure the side panel to the chassis using four screws.
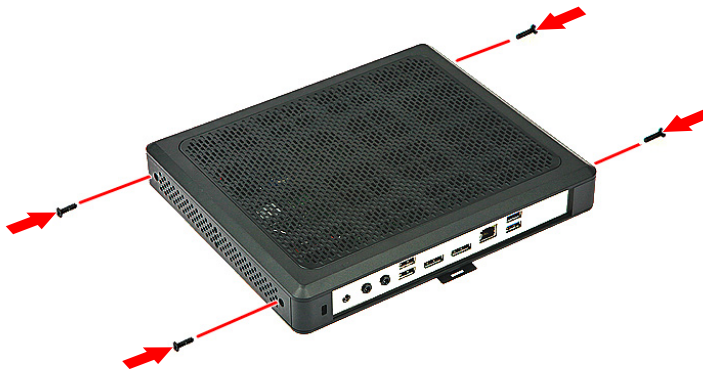
Removing the Computer Stand

1. Push the computer stand into the chassis.

2. Secure the computer stand to the chassis using one screw.

Troubleshooting

This chapter lists the POST error indicators and BIOS beep codes, as well as general troubleshooting instructions.

Hardware Diagnostic Procedure

1. Obtain as much detail as possible about the symptoms of the system failure.

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" procedure on the next section and the "Beep Codes" section on page 46 to determine which corrective action to take.

System Check Procedures

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.

Power System Check

If the system can be powered on, skip this section. Proceed to the "System Internal Inspection" procedure on the next page.

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

• Check if the power cable is properly connected to the AC power jack and a functional AC power source.

• Check if the voltage selector switch is set to the correct voltage setting.

System External Inspection

1. Inspect the power and LED indicators on the front panel. Go to "Front View" section on page 3 for the location and description of the LED behaviour.

2. Make sure that there is no point of contact in the system that can cause a power short.

   If the cause of the failure is still can not be determined, perform the "System Internal Inspection" procedure described on the next page.

System Internal Inspection

1. Turn off the power to the computer and all peripherals.
2. Unplug the power cord from the computer.
3. Unplug the network cable and all connected peripheral devices from the computer.
4. Place the computer on a flat, steady surface.
5. Remove the side panel as described in page 15.
6. Verify that the SSD module and the RTC battery are properly seated.
7. Remove the mainboard as described in page 21.
8. Verify that memory module(s) are properly seated.
9. Verify that all components are Acer-qualified and supported.
10. Reinstall the mainboard.
11. Reinstall the side panel.
12. Power on the system.

    If the cause of the failure is still can not be determined, review the POST messages and BIOS checkpoints during the system startup.

Checkpoints

A checkpoint is either a byte or word value output to I/O port 80h. The BIOS outputs checkpoints during 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.

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.

UEFI BIOS POST Code Checkpoints

The UEFI BIOS POST 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 boot block initialization portion of the BIOS.

Checkpoint	Description
0x01 – 0x0F	SEC Status Codes & Errors
0x10 – 0x2F	PEI execution up to and including memory detection
0x30 – 0x4F	PEI execution after memory detection
0x50 – 0x5F	PEI errors
0x60 – 0xCF	DXE execution up to BDS
0xD0 – 0xDF	DXE errors
0xE0 – 0xE8	S3 Resume (PEI)
0xE9 – 0xEF	S3 Resume errors (PEI)
0xF0 – 0xF8	Recovery (PEI)

Checkpoint	Description
0xF9 – 0xFF	Recovery errors (PEI)

Status Codes

SEC Status Codes

Checkpoint	Description
0x1	Power on. Reset type detection (soft/hard).
0x2	AP initialization before microcode loading
0x3	North Bridge initialization before microcode loading
0x4	South Bridge initialization before microcode loading
0x5	OEM initialization before microcode loading
0x6	Microcode loading
0x7	AP initialization after microcode loading
0x8	North Bridge initialization after microcode loading
0x9	South Bridge initialization after microcode loading
0xA	OEM initialization after microcode loading
0xB	Cache initialization

PEI Status Codes

Checkpoint	Description
0x10	PEI Core is started
0x11	Pre-memory CPU initialization is started
0x12	CPU pre-memory initialization (CPU module specific)
0x13	CPU pre-memory initialization (CPU module specific)
0x14	CPU pre-memory initialization (CPU module specific)
0x15	Pre-memory North Bridge initialization is started
0x16	Pre-Memory North Bridge initialization (North Bridge module specific)
0x17	Pre-Memory North Bridge initialization (North Bridge module specific)
0x18	Pre-Memory North Bridge initialization (North Bridge module specific)
0x19	Pre-memory South Bridge initialization is started
0x1A	Pre-memory South Bridge initialization (South Bridge module specific)
0x1B	Pre-memory South Bridge initialization (South Bridge module specific)
0x1C	Pre-memory South Bridge initialization (South Bridge module specific)
0x1D – 0x2A	OEM pre-memory initialization codes
0x2B	Memory initialization. Serial Presence Detect (SPD) data reading
0x2C	Memory initialization. Memory presence detection
0x2D	Memory initialization. Programming memory timing information
0x2E	Memory initialization. Configuring memory
0x2F	Memory initialization (other).
0x30	Reserved for ASL (see ASL Status Codes section below)
0x31	Memory Installed
0x32	CPU post-memory initialization is started

Checkpoint	Description
0x33	CPU post-memory initialization. Cache initialization
0x34	CPU post-memory initialization. Application Processor(s) (AP) initialization
0x35	CPU post-memory initialization. Boot Strap Processor (BSP) selection
0x36	CPU post-memory initialization. System Management Mode (SMM) initialization
0x37	Post-Memory North Bridge initialization is started
0x38	Post-Memory North Bridge initialization (North Bridge module specific)
0x39	Post-Memory North Bridge initialization (North Bridge module specific)
0x3A	Post-Memory North Bridge initialization (North Bridge module specific)
0x3B	Post-Memory South Bridge initialization is started
0x3C	Post-Memory South Bridge initialization (South Bridge module specific)
0x3D	Post-Memory South Bridge initialization (South Bridge module specific)
0x3E	Post-Memory South Bridge initialization (South Bridge module specific)
0x3F-0x4E	OEM post memory initialization codes
0x4F	DXE IPL is started

S3 Resume Progress Codes

Checkpoint	Description
0xE0	S3 Resume is started (S3 Resume PPI is called by the DXE IPL)
0xE1	S3 Boot Script execution
0xE2	Video repost
0xE3	OS S3 wake vector call
0xE4-0xE7	Reserved for future AMI progress codes
0xE0	S3 Resume is started (S3 Resume PPI is called by the DXE IPL)

Recovery Progress Codes

Checkpoint	Description
0xF0	Recovery condition triggered by firmware (Auto recovery)
0xF1	Recovery condition triggered by user (Forced recovery)
0xF2	Recovery process started
0xF3	Recovery firmware image is found
0xF4	Recovery firmware image is loaded
0xF5-0xF7	Reserved for future AMI progress codes

DXE Status Codes

Checkpoint	Description
0x60	DXE Core is started
0x61	NVRAM initialization
0x62	Installation of the South Bridge Runtime Services
0x63	CPU DXE initialization is started
0x64	CPU DXE initialization (CPU module specific)

Checkpoint	Description
0x65	CPU DXE initialization (CPU module specific)
0x66	CPU DXE initialization (CPU module specific)
0x67	CPU DXE initialization (CPU module specific)
0x68	PCI host bridge initialization
0x69	North Bridge DXE initialization is started
0x6A	North Bridge DXE SMM initialization is started
0x6B	North Bridge DXE initialization (North Bridge module specific)
0x6C	North Bridge DXE initialization (North Bridge module specific)
0x6D	North Bridge DXE initialization (North Bridge module specific)
0x6E	North Bridge DXE initialization (North Bridge module specific)
0x6F	North Bridge DXE initialization (North Bridge module specific)
0x70	South Bridge DXE initialization is started
0x71	South Bridge DXE SMM initialization is started
0x72	South Bridge devices initialization
0x73	South Bridge DXE Initialization (South Bridge module specific)
0x74	South Bridge DXE Initialization (South Bridge module specific)
0x75	South Bridge DXE Initialization (South Bridge module specific)
0x76	South Bridge DXE Initialization (South Bridge module specific)
0x77	South Bridge DXE Initialization (South Bridge module specific)
0x78	ACPI module initialization
0x79	CSM initialization
0x7A – 0x7F	Reserved for future AMI DXE codes
0x80 – 0x8F	OEM DXE initialization codes
0x90	Boot Device Selection (BDS) phase is started
0x91	Driver connecting is started
0x92	PCI Bus initialization is started
0x93	PCI Bus Hot Plug Controller Initialization
0x94	PCI Bus Enumeration
0x95	PCI Bus Request Resources
0x96	PCI Bus Assign Resources
0x97	Console Output devices connect
0x98	Console input devices connect
0x99	Super IO Initialization
0x9A	USB initialization is started
0x9B	USB Reset
0x9C	USB Detect
0x9D	USB Enable
0x9E – 0x9F	Reserved for future AMI codes
0xA0	Reserved for ASL (see ASL Status Codes section below)
0xA1	IDE initialization is started
0xA2	IDE Reset
0xA3	IDE Detect
0xA4	IDE Enable

Checkpoint	Description
0xA5	SCSI initialization is started
0xA6	SCSI Reset
0xA7	SCSI Detect
0xA8	SCSI Enable
0xA9	Setup Verifying Password
0xAA	Reserved for ASL (see ASL Status Codes section below)
0xAB	Start of Setup
0xAC	Setup Input Wait
0xAD	Ready To Boot event
0xAE	Legacy Boot event
0xAF	Exit Boot Services event
0xB0	Runtime Set Virtual Address MAP Begin
0xB1	Runtime Set Virtual Address MAP End
0xB2	Legacy Option ROM Initialization
0xB3	System Reset
0xB4	USB hot plug
0xB5	PCI bus hot plug
0xB6	Clean-up of NVRAM
0xB7	Configuration Reset (reset of NVRAM settings)
0xB8 – 0xBF	Reserved for future AMI codes
0xC0 – 0xCF	OEM BDS initialization codes

CPU Exception Status Codes

Checkpoint	Description
0x00	Divide error
0x01	CPU Debug exception
0x02	Non Maskable hardware Interrupt occurred
0x03	INT 3 breakpoint
0x04	Overflow, INT 0 instruction
0x05	Bound Range Exceeded
0x06	Invalid Opcode (undefined opCode)
0x07	Device Not Available (No Math Co-Processor)
0x08	Double Fault. Any instruction to the CPU that can Generate an NMI or INTR
0x09	Co-Processor Segment Overrun
0x0A	Invalid Task Switch Access
0x0B	Segment not present. Occurs after a load segment
0x0C	Stack Segment Fault. Relations to Stack operations
0x0D	General Protection fault. Any memory reference and other protection checks
0x0E	Page Fault.
0x0F	Reserved by Intel
0x10	Floating Point Error
0x11	Alignment Check

Checkpoint	Description
0x12	Machine Check
0x13	SIMD Floating point exception

ASL Status Codes

Checkpoint	Description
0x01	System is entering S1 sleep state
0x02	System is entering S2 sleep state
0x03	System is entering S3 sleep state
0x04	System is entering S4 sleep state
0x05	System is entering S5 sleep state
0x10	System is waking up from the S1 sleep state
0x20	System is waking up from the S2 sleep state
0x30	System is waking up from the S3 sleep state
0x40	System is waking up from the S4 sleep state
0xAC	System has transitioned into ACPI mode. Interrupt controller is in PIC mode.
0xAA	System has transitioned into ACPI mode. Interrupt controller is in APIC mode.

OEM-Reserved Status Codes

Checkpoint	Description
0x5	OEM SEC initialization before microcode loading
0xA	OEM SEC initialization after microcode loading
0x1D – 0x2A	OEM pre-memory initialization codes
0x3F – 0x4E	OEM PEI post memory initialization codes
0x80 – 0x8F	OEM DXE initialization codes
0xC0 – 0xCF	OEM BDS initialization codes

POST Error Indicators

When a system error is detected during POST (Power On Self Text), the Setup utility will switch to diagnostic mode and will either:

- Displays a POST error message, or
- Emits a series of beep codes

POST Error Messages

POST error messages tell users what failure the system has detected. Some error messages could be related to a hardware device. Others may indicate a problem with a device configuration. In some cases an error message may include recommendations for troubleshooting or require that you press the **Enter** key to display recommendations. Follow the instructions on the screen. It is recommended that you correct the error before proceeding, even if the computer appears to boot successfully.

> **IMPORTANT** If your system fails after you make changes in the Setup menus, reboot the computer, enter Setup again and load Setup defaults to correct the error.

SEC Error Codes

Checkpoint	Description
0xC – 0xD	Reserved for future AMI SEC error codes
0xE	Microcode not found
0xF	Microcode not loaded

PEI Error Codes

Checkpoint	Description
0x50	Memory initialization error. Invalid memory type or incompatible memory speed
0x51	Memory initialization error. SPD reading has failed
0x52	Memory initialization error. Invalid memory size or memory modules do not match.
0x53	Memory initialization error. No usable memory detected
0x54	Unspecified memory initialization error.
0x55	Memory not installed
0x56	Invalid CPU type or Speed
0x57	CPU mismatch
0x58	CPU self test failed or possible CPU cache error
0x59	CPU micro-code is not found or micro-code update is failed
0x5A	Internal CPU error
0x5B	reset PPI is not available
0x5C-0x5F	Reserved for future AMI error codes

S3 Resume Error Codes

Checkpoint	Description
0xE8	S3 Resume Failed in PEI
0xE9	S3 Resume PPI not Found
0xEA	S3 Resume Boot Script Error
0xEB	S3 OS Wake Error
0xEC-0xEF	Reserved for future AMI error codes

Recovery Error Codes

Checkpoint	Description
0xF8	Recovery PPI is not available
0xF9	Recovery capsule is not found
0xFA	Invalid recovery capsule
0xFB – 0xFF	Reserved for future AMI error codes

DXE Error Codes

Checkpoint	Description
0xD0	CPU initialization error
0xD1	North Bridge initialization error
0xD2	South Bridge initialization error
0xD3	Some of the Architectural Protocols are not available
0xD4	PCI resource allocation error. Out of Resources
0xD5	No Space for Legacy Option ROM
0xD6	No Console Output Devices are found
0xD7	No Console Input Devices are found
0xD8	Invalid password
0xD9	Error loading Boot Option (LoadImage returned error)
0xDA	Boot Option is failed (StartImage returned error)
0xDB	Flash update is failed
0xDC	Reset protocol is not available

Beep Codes

When no error message is displayed but the computer stops during POST, listen for beep codes.

PEI Beep Codes

No. of Beeps	Description
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
1	Invalid password
6	Flash update is failed
7	Reset protocol is not available

DXE Beep Codes

No. of Beeps	Description
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
1	Invalid password
6	Flash update is failed
7	Reset protocol is not available

Undetermined Problems

NOTE • Verify that all attached devices are supported by the computer.

• Verify that the power supply being used at the time of the failure is operating correctly. (See "Power System Check" on page 37)

Follow the procedures below to isolate the failing FRU. Do not isolate non-defective FRU.

1. Power off the computer.

2. Visually check them for damage. If any problems are found, replace the FRU.

3. Remove or disconnect all of the following devices:
    • Non-Acer devices
    • SSD drive
    • DIMM

4. Power on the computer.

5. Determine if the problem has been resolved.

6. If the problem does not recur, reconnect the removed devices one at a time until you find the failed FRU.

    If the problem persists, replace the mainboard. Do not replace a non-defective FRU.

Clearing CMOS

You may need to clear the Setup configuration values (CMOS) if the configuration has been corrupted, or if incorrect settings made in the Setup Utility caused error messages to be unreadable. This procedure will clear the BIOS supervisor password as well.

Use the CMOS1 jumper to clear the CMOS data.

- •   1-2 position: Normal operation (default)
- •   2-3 position: Clear CMOS data

To clear the CMOS data:

1.   Turn off the power to the computer and all peripherals.

2.   Unplug the power cord from the computer.

3.   Unplug the network cable and all connected peripheral devices from the computer.

4.   Place the computer on a flat, steady surface with side panel facing upward.

5.   Remove the side panel by following the procedures described on page 15.

6.   If necessary, remove any other components or cables that prevent access to the CMOS1 jumper.

7.   Locate the CMOS1 jumper on the mainboard.
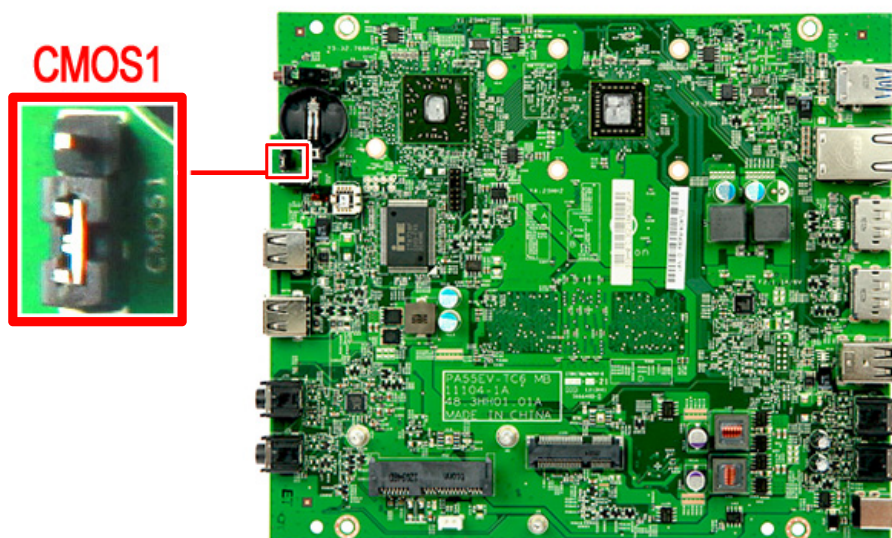
8.   Remove the jumper block and set it over the 2-3 pins for 20 to 30 seconds.

9.   Return the jumper block to its default 1-2 position.

10.   Reinstall any other components or cables that have previously been removed.

11.   Reinstall the computer cover.

12.   Connect the power cord to the system.

13.   Press the power button to turn on the computer.

14.   During POST, press **Delete** to access the Setup Utility.

15.   Press **F9** to load the system default values.

16.   Press **F10** to save the changes you made and close the Setup Utility.

BIOS Recovery

 When you boot up the computer and you hear one long beep, followed by a shorter one, the system BIOS is damaged. This maybe cause by an interruption during a BIOS flash procedure (e.g. a power outage) or a corrupted BIOS code, which will cause the system to go into an unbootable state.You need to access and execute the boot block program to reboot the computer and recover the regular BIOS code.

Note the following when restoring the BIOS settings:

- Make sure the computer is connected to a UPS unit during the BIOS recovery process.
- The BIOS crisis recovery disk should be prepared in a computer running the Windows XP or Windows Vista OS. A USB floppy, optical, or hard drive can be used.

Creating the BIOS Crisis Recovery Disk

1. Set up a computer running the Windows XP or Windows Vista operating system and connect the BIOS recovery media.
2. Copy the target BIOS ROM file to the BIOS recovery media and rename it as "amiboot.rom".
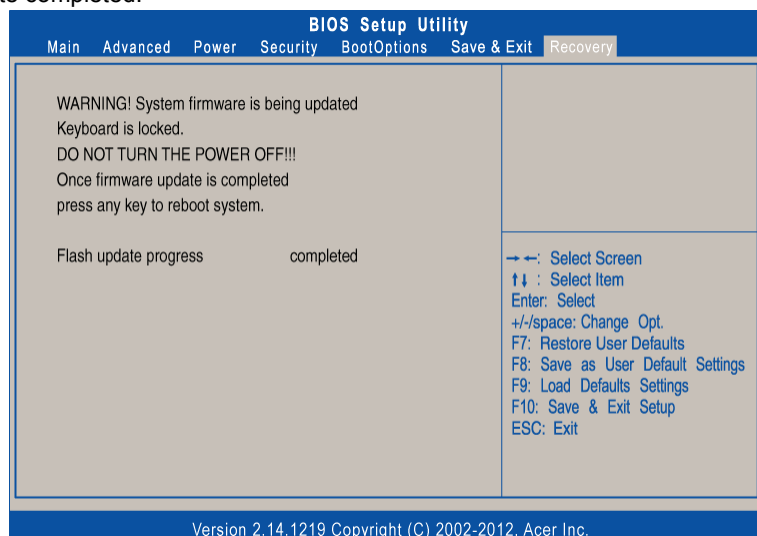3. Eject the BIOS recovery media from the computer.

Performing a BIOS Recovery

NOTE   This procedure is only applicable when the boot block section is still valid.

1. Shut down the system with failed BIOS.
2. Put the BIOS.ROM (like P01-A0) to a bootable USB storage.
3. Rename BIOS rom file (it may exist at \ROM\xxx.ROM) to AMIBOOT.ROM
4. Plug the USB storage to the system.
5. Press the power button to turn on the system.

The system will now execute the BIOS recovery process. You will hear a long beep followed by a short beep.

6. Select **Proceed with flash update start recovery**.
7. Wait for the program to finish with the recovery.
8. Flash update completed.

```
                        BIOS Setup Utility
     Main    Advanced   Power   Security   BootOptions   Save & Exit   Recovery

        WARNING! System firmware is being updated
        Keyboard is locked.
        DO NOT TURN THE POWER OFF!!!
        Once firmware update is completed
        press any key to reboot system.

        Flash update progress            completed
                                                    → ←: Select Screen
                                                    ↑↓ : Select Item
                                                    Enter: Select
                                                    +/-/space: Change  Opt.
                                                    F7:  Restore User Defaults
                                                    F8:  Save  as  User  Default  Settings
                                                    F9:  Load  Defaults  Settings
                                                    F10:  Save  &  Exit  Setup
                                                    ESC: Exit

                  Version 2.14.1219 Copyright (C) 2002-2012, Acer Inc.
```
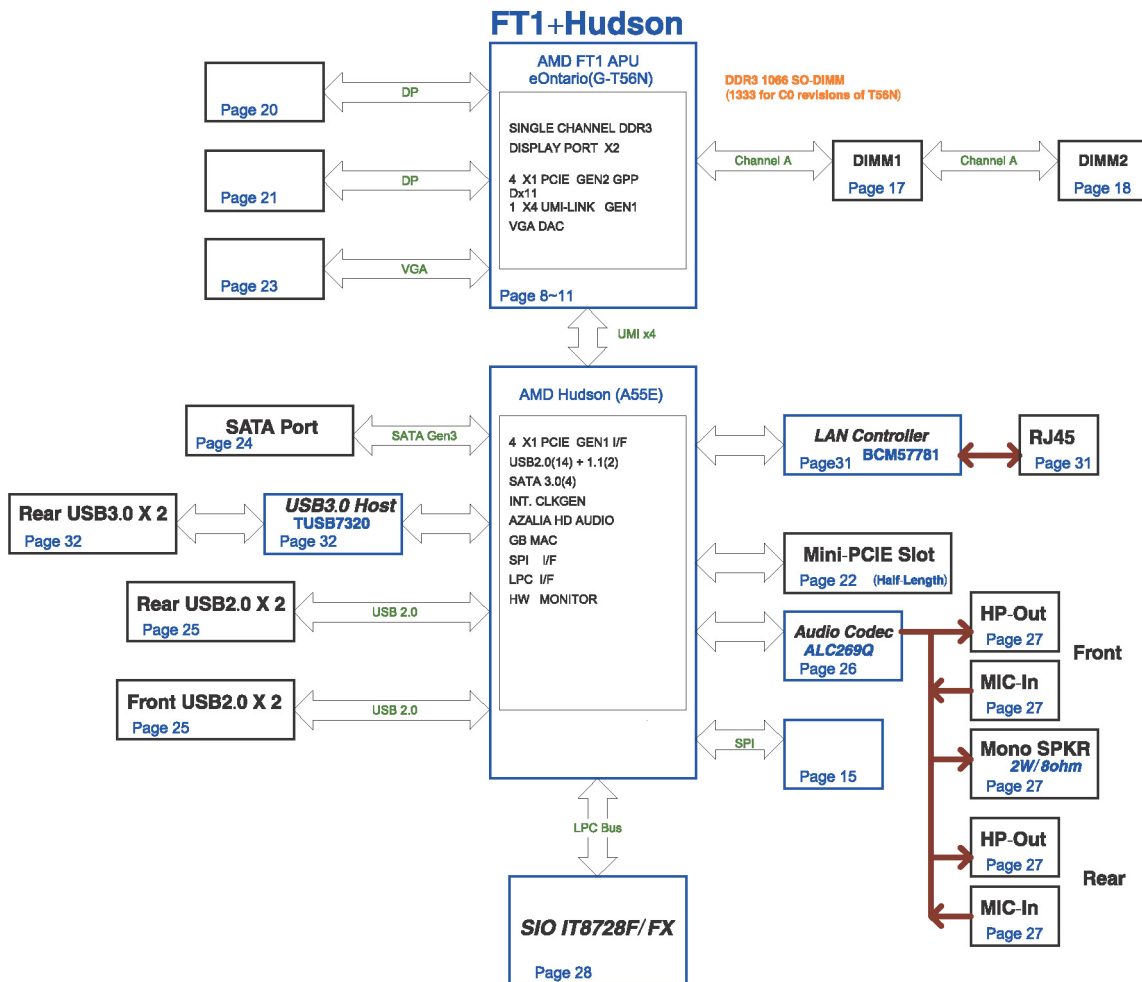
9. Press any key to reboot system.
10. The BIOS recovery is now completed.

System Architecture

This chapter shows the block diagram and board layout of the Veriton N2110G computer.
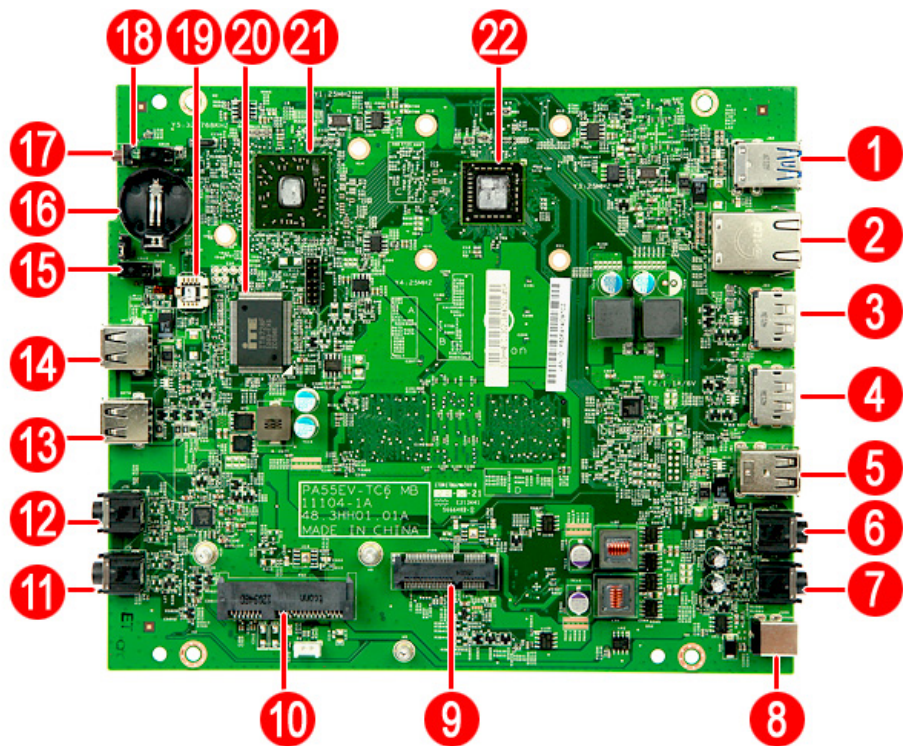
Block Diagram

The core subsystems of the Veriton N2110G computer are depicted in the following block diagram:

Mainboard Layout (top)

This section shows the major mainboard components (top view).

No.	Label	Description	No.	Label	Description
1	J82	Rear USB 3.0 port	12	J75	Front headphone jack
2	J9	LAN connector	13	SKT4	Front USB 2.0 port
3	J64	HDMI port	14	SKT5	Front USB 2.0 port
4	J65	HDMI port	15	CR15	LAN LED
5	J81	Rear USB 2.0 port	16	XBT1	RTC Battery slot
6	J77	Rear headphone jack	17	CR14	Power LED
7	J76	Rear microphone jack	18	SW1	Power button
8	J103	DC-in jack	19	U19	SPI ROM
9	J105	WLAN slot	20	U16	SIO
10	P62	SSD slot	21	U4	Hudson E1-SB
11	J72	Front microphone jack	22	U1	T56N-APU

Mainboard Layout (bottom)

This section shows the major mainboard components (bottom view).
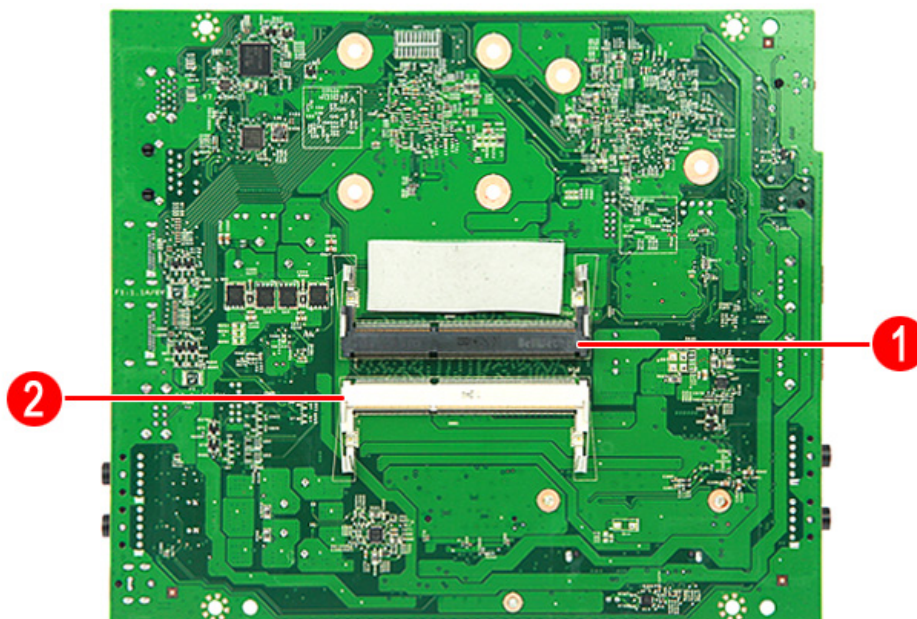
No.	Label	Description	No.	Label	Description
1	XMM2	DIMM Slot 2	2	XMM1	DIMM Slot 1

Jumper Setting

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

Jumpers with more than one pin are numbered. When setting a jumper, ensure that the jumper caps are placed on the correct pins.

The following illustration shows the location of CMOS1:
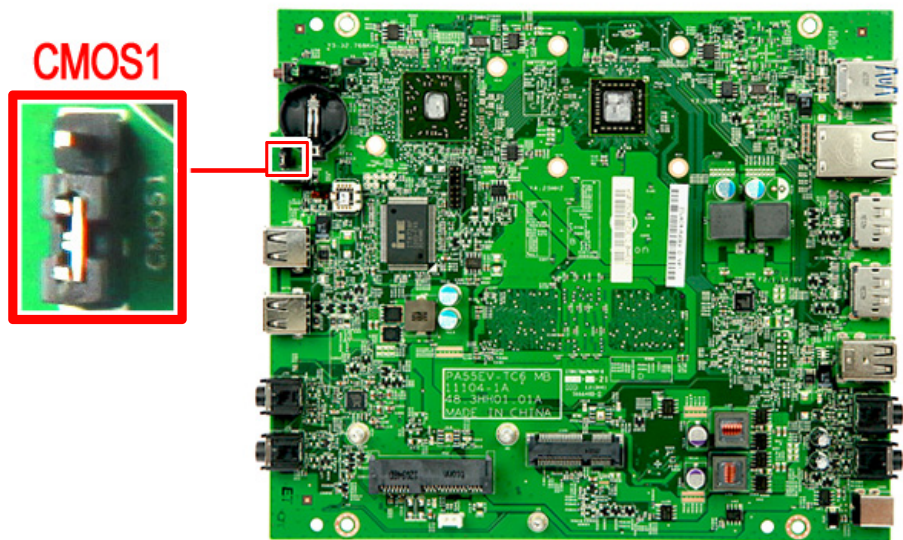
The following table shows the settings of the 3-pin Clear CMOS (CMOS1) jumper. Place the jumper cap on pins 1 and 2 to close or short the jumper. Place the jumper cap on pins 2 and 3 to open or clear the jumper.

Jumper	Type	Description	Setting (default)	
CMOS1	3-pin	Clear CMOS	1-2: Normal (default) 2-3: Clear CMOS Before clearing the CMOS, make sure to turn off the system.	

Field Replaceable Unit (FRU) List

This chapter gives you the FRU (Field Replaceable Unit) listing of the Veriton N2110G ThinClient computer global configurations. Refer to this list when ordering for repair parts or for RMA (Return Merchandise Authorization).

IMPORTANT   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.

NOTE   Follow the local government regulations, or the rules set by your regional office on how to return or dispose of defective parts.
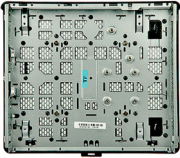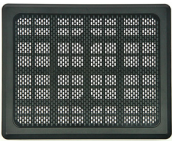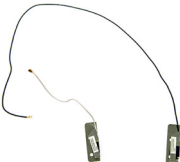
Exploded Diagram
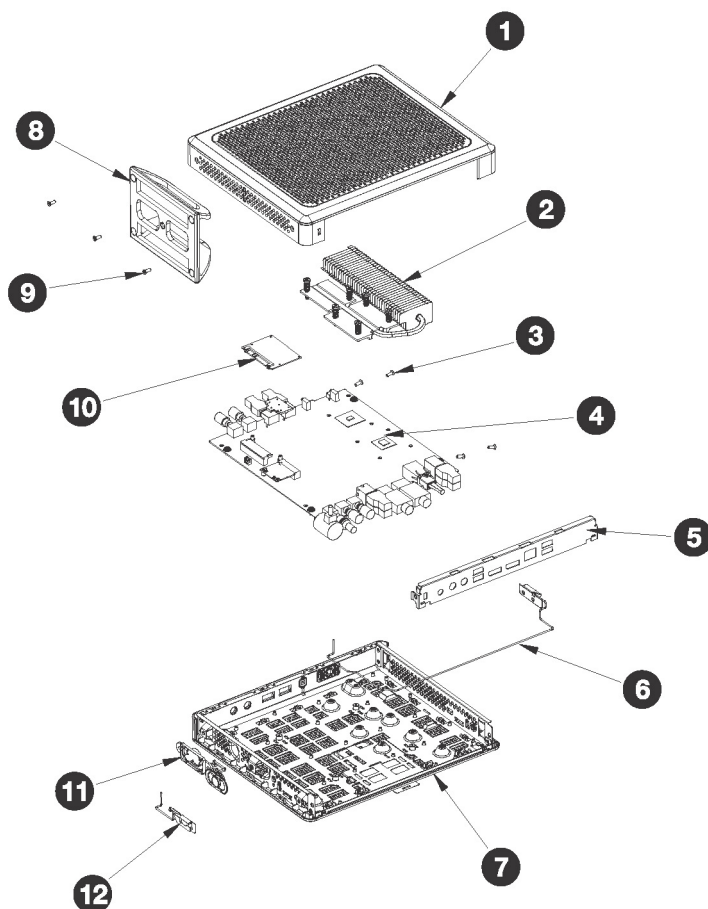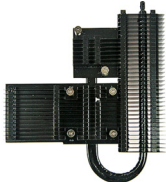
No.	Description	Part No.
1	Top cover assembly (Side Panel)	60.3HH02.001
2	Thermal module assembly	60.3HH09.001
3	Screw M3 X 6L	86.00B75.240
4	Mainboard	81.3HH10.013G
5	Rear IO bracket assembly	60.3HH06.001
6	Auxiliary antenna	25.90ADA.001
7	Bottom cover assembly	60.3HH05.001
8	Computer stand/base	60.3HH03.001
9	Screw M3 X L10.0	86.5A324.100
10	SSD module	56.02Z26.001
11	Speaker module	23.40A5R.001
12	Main antenna	25.90AD9.001

Veriton N2110G FRU List

ACER_VN2110G_TC6(NO:91.3HH01.001G)

Category	Part Name	Description	Acer Part No.
ADAPTER	ADAPTER 48W 12V/4A AU-799IN	ADP 48W 12V/4A AU-799IN PA40NX-TC6	25.VFTD1.001
BOARDS	WLAN 802.11ABGN +BT4.0 COMBO CARD AR9462	WLAN 802.11ABGN +BT4.0 COMBO AR9462	DA.VFT11.001
CABLES	POWER CORD 110V 3PIN UL USA	POWER CORD 110V UL USA	27.01518.0I1
	DP TO VGA DONGLE CONNECTOR	ICT-LANTO DP TO VGA DONGLE LA00DP002-1N	DP.VFT11.001
	DP TO DVI DONGLE CONNECTOR	ICT-LANTO DP TO DVI DONGLE LA00DP001-1N	DP.VFT11.002
CASE/COVER/ BRACKET ASSEMBLY	REAR IO BRACKET	ASSY-BRKT-REAR-IO-TC6	33.VFTD1.001
	BOTTOM COVER	ASSY-CVR-BOTTOM-TC6	60.VFTD1.001
	TOP COVER	ASSY-CVR-TOP-TC6	60.VFTD1.002
	STAND BASE	ASSY-STAND-BASE-TC6	60.VFTD1.003
COMM. MODULE	WLAN ANTENNA MAIN WHITE	ANT WLAN MAIN WHITE 95MM ACON	50.VFTD1.003
	WLAN ANTENNA AUX BLACK	ANT WLAN AUX BLACK 400MM ACON	50.VFTD1.004

Category	Part Name	Description	Acer Part No.
HDD/HARD DISK DRIVE	SSD-M 16GB SANDISK SDSA5AK-016G SATA MLC FW:V.10.02.00	SSD-M 16GB SANDISK SDSA5AK-016G HALF-SLI	KN.16G0D.001
	SSD-M 8GB SANDISK SDSA5AK-008G SATA MLC FW:V.10.02.00	SSD-M 8GB SANDISK SDSA5AK-008G HALF-SLIM	KN.8GB0D.00 1
HEATSINK	THERMAL MODULE	ASSY THERMAL MODULE T56N TC6	60.VFTD1.004
KEYBOARD	KEYBOARD PRIMAX PR1101U USB BLACK US WITH NEW ACER LOGO	KB PR1101U USB BLACK US	KB.USB0P.259
MAINBOARD	MAINBOARD KIT WMKT56N AMD T56N A55E RADEON HD 6320 BCM57781B0KMLG LF EUP2013 W/APU W/O DIMM	PA55EV-TC6 AMD T56N -1 MB	DB.VFT11.001
MEMORY	SODIMM 2GB DDRIII 1333 NANYA NT2GC64B88G0NS-CG LF+HF	SODIMM 2G NT2GC64B88G0NS-CG DDR3 1333MHZ	KN.2GB03.025
	SODIMM 2GB DDRIII 1333MHZ SAMSUNG M471B5773DH0-CH9 LF 256*8	SODIMM 2G M471B5773DH0-CH9 DDR3 1333MHZ	KN.2GB0B.030
	SODIMM 2GB DDRIII 1333 HYNIX HMT325S6CFR8C-H9 LF+HF 256X8 38NM	SODIMM 2G HMT325S6CFR8C-H9 DDR3 1333MHZ	KN.2GB0G.031
MISC.	THERMAL PAD	T-PAD SODIMM K1.8 20X55X1.5T PLYM EAPUS	47.VFTD1.001
	EMI-GASKET-L35-W12H12-ANGUS19-COMBO	EMI-GASKET-L35-W12H12-ANGUS19-COMBO	47.VFTD1.002
	EMI GASKET 10W*10L*0.5T SOMA	EMI GASKET 10W*10L*0.5T SOMA	47.VFTD1.003
	EMI_XPANSION_GASKET W5*L62*T1	EMI_XPANSION_GASKET W5*L62*T1	47.VFTD1.004
	ASSEMBLY RUBBER HORIZONTAL FOOT*4	ASSY-RUBBER-HORIZONTAL-FOOT-TC6	47.VFTD1.005
POINTING DEVICE	LOGITECH OPTICAL MOUSE USB M-U0027-O WITH ACER LOGO	MOUSE OPTICAL USB M-U0027-O WITH ACER LO	MS.11200.106
	PRIMAX OPTICAL MOUSE USB MOFGUO WITH ACER LOGO	MOUSE OPTICAL MOUSE USB MOFGUO WITH ACER	MS.11200.107

Category	Part Name	Description	Acer Part No.
SCREWS	SCREW M2 CAP L4 NI	SCRW M2 CAP L4 NI	86.NBY01.003
	SCREW	SCRW M3 CAP D7 6L NI H801	86.U5P01.001
	SCREW MACH M1.4 L8 NI	SCRW MACH M1.4 L8 NI	86.VFTD1.001
	SCREW BI M3 L10.0 BLACK ZN	SCRW BI M3 L10.0 BLACK ZN	86.VFTD1.002
SPEAKER	SPEAKER	SPEAKER L04020A-176-2 TC6	23.VFTD1.001

Technical Specifications

This section provides technical specifications for the system.

Processor

Item	Specification
Type	AMD Fusion
Processor Number	G-T56N
Number of Cores	Dual
Clock Speed (GHz)	1.65
Turbo Speed (GHz)	N/A
Cache Size (MB)	1
Thermal Design Power (W)	18

System Board Major Chips

Item	Specification
System Core Logic	AMD Hudson A55E FCH
Video Controller	Integrated Radeon HD 6320
LAN Controller	BCM57781B0KMLG QFN
Audio Controller	Realtek ALC 269Q-VC2-GR Audio Codec
USB Controller	Integrated in the AMD Hudson A55E FCH
Input Devices Controller	Super I/O IT8728F/FX

System Memory

Item	Specification
Controller	Integrated in the AMD Hudson A55E FCH
Number of DIMM slot	2
Maximum memory	4 GB (using two 2 GB modules)
Data rate	1066/1333/1866 MT/s
Supported capacities	2 GB
DIMM type	204-pin DDR3 SO-DIMM
Supported brands	Nanya, Hynix, Samsung
Population rule	You can install memory modules in any combination as long as they match the above specifications.

System BIOS

Item	Specification
BIOS Vendor	American Megatrends Inc.
BIOS Version	P01-A0

Solid State Disk (SSD) Drive

Item	Specification
Controller	Integrated in the AMD Hudson A55E FCH
Number of SSD slots	1
Interface	SATA 3.0
Supported capacities	
8 GB	• SANDISK – SDSA5AK-008G • APACER – APS1845008G-ACM
16 GB	• SANDISK – SDSA5AK-016G • APACER – APS1845016G-ACM

Network Interface

Item	Specification
LAN Controller	BCM57781B0KMLG QFN
Supports LAN Protocol	10/100/1000 Mbps
LAN Connector Type	RJ45

SATA Interface

Item	Specification
SATA Controller	Embedded SATA controller
Connectors	One SATA 3.0 interface

Audio Interface

Item	Specification
Audio Controller	Realtek ALC 269Q-VC2-GR Audio Codec
Connectors	Four audio jacks (2 in front and 2 at the back)