



USER MANUAL

**VE-900**

**Desktop Mini-ITX Board**



## Preface

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Version 1.0

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- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

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- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation

## Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## About the Manual

The manual consists of the following:

<b>Chapter 1</b> <b>Introducing the Motherboard</b>	Describes features of the motherboard. Go to ➞ page 1
<b>Chapter 2</b> <b>Installing the Motherboard</b>	Describes installation of motherboard components. Go to ➞ page 7
<b>Chapter 3</b> <b>Using BIOS</b>	Provides information on using the BIOS Setup Utility. Go to ➞ page 21
<b>Chapter 4</b> <b>Trouble Shooting</b>	Provides basic trouble shooting tips. Go to ➞ page 35



## TABLE OF CONTENTS

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---

Preface	i
<b>Chapter 1</b>	<b>1</b>
<b>Introducing the Motherboard</b>	<b>1</b>
Introduction.....	1
Feature.....	2
Motherboard Components.....	5
<b>Chapter 2</b>	<b>7</b>
<b>Installing the Motherboard</b>	<b>7</b>
Safety Precautions.....	7
Choosing a Computer Case.....	7
Installing the Motherboard in a Case.....	7
Checking Jumper Settings.....	8
<i>Setting Jumpers.....</i>	<i>8</i>
<i>Checking Jumper Settings.....</i>	<i>9</i>
<i>Jumper Settings.....</i>	<i>9</i>
Installing Hardware.....	10
<i>Installing Memory Modules.....</i>	<i>10</i>
<i>Expansion Slots.....</i>	<i>11</i>
<i>Connecting Optional Devices.....</i>	<i>13</i>
<i>Installing a SATA Hard Drive.....</i>	<i>15</i>
Connecting I/O Devices.....	16
Connecting Case Components.....	17
<i>Front Panel Header.....</i>	<i>19</i>
<b>Chapter 3</b>	<b>21</b>
<b>Using BIOS</b>	<b>21</b>
About the Setup Utility.....	21
<i>The Standard Configuration.....</i>	<i>21</i>
<i>Entering the Setup Utility.....</i>	<i>21</i>
<i>Resetting the Default CMOS Values.....</i>	<i>22</i>
Using BIOS.....	23
<i>Standard CMOS Setup.....</i>	<i>24</i>
<i>Advanced Setup.....</i>	<i>25</i>
<i>Advanced Chipset Setup.....</i>	<i>27</i>
<i>Integrated Peripherals.....</i>	<i>28</i>
<i>Power Management Setup.....</i>	<i>29</i>



<i>PC Health Status</i> .....	30
<i>Frequency/Voltage Control</i> .....	31
<i>Load Default Settings</i> .....	32
<i>Supervisor Password</i> .....	32
<i>User Password</i> .....	33
<i>Save &amp; Exit Setup</i> .....	34
<i>Exit Without Saving</i> .....	34
<i>Updating the BIOS</i> .....	34

<b>Chapter 4</b>	<b>35</b>
<b>Trouble Shooting</b>	<b>35</b>
Start up problems during assembly.....	35
Start up problems after prolong use.....	36
Maintenance and care tips.....	36
Basic Troubleshooting Flowchart.....	37



## **Chapter 1**

# **Introducing the Motherboard**

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### **Introduction**

Thank you for choosing the VE-900 motherboard. This motherboard is a high performance, enhanced function motherboard with onboard NANO X2 1.4GHz processor for high-end business or personal desktop markets.

The motherboard is based on VIA® VX900 Express Chipset for best desktop platform solution. VX900 is a low power single-chip. This motherboard supports a Front Side Bus (FSB) frequency of 800MHz. The memory controller supports DDR3 memory DIMM frequencies of 1066/800. It supports two DDR3 sockets with up to maximum memory of 8 GB. It also supports one PCI slot. It implements an EHCI compliant interface that provides eight USB 2.0 ports (four USB 2.0 ports and two USB 2.0 headers support additional four USB 2.0 ports). This motherboard integrates a Serial ATA host controller, supporting two SATA ports with maximum transfer rate up to 3.0 Gb/s each.

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including two connectors for PS/2 mouse and keyboard, one HDMI port, one VGA port, one COM1 port, four USB 2.0 ports, one LAN port, and audio jacks for microphone, line-in and line-out.



## Feature

### Processor

- Onboard NANO X2 1.4GHz processor
- Supports FSB 800MHz

### Chipset

The VX900 chipset is based on an innovative and scalable architecture with proven reliability and performance.

- Integrated Chrome 9 HD Graphic Processor
- Integrated SATA 3.0 Gb/s Host Controller
- Eight USB 2.0 ports supported
- Serial Peripheral Interface (SPI) support
- Enhanced DMA Controller, interrupt controller, and timer functions

### Memory

- Supports DDR3 1066/800 DIMM with single-channel architecture
- Accommodates two unbuffered DIMMs
- 2 x 240-pin DDR3 DIMM sockets support up to 8 GB

### Onboard LAN

- Integrated 10/100/1000 transceiver
- Supports Wake-on-LAN
- Fully compliant with IEEE802.3u, IEEE802.3ab

### Audio

- 5.1 Channel High Definition Audio Codec
- Direct Sound 3D™ compatible

### Expansion Options

The motherboard comes with the following expansion options:

- One 32-bit PCI v2.3 compliant slot
- Two 7-pin SATA connectors



## Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- One HDMI port
- One VGA port
- One COM1 port
- Four USB 2.0 ports
- One LAN port
- Audio jacks for microphone, line-in and line-out

## BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Date and time
- Password
- Power management
- Main chipset functions



*1. Some hardware specifications and software items are subject to change without prior notice.*

*2. We recommend that motherboard be operated in the ambience between 0 and 45° C.*





## Specifications

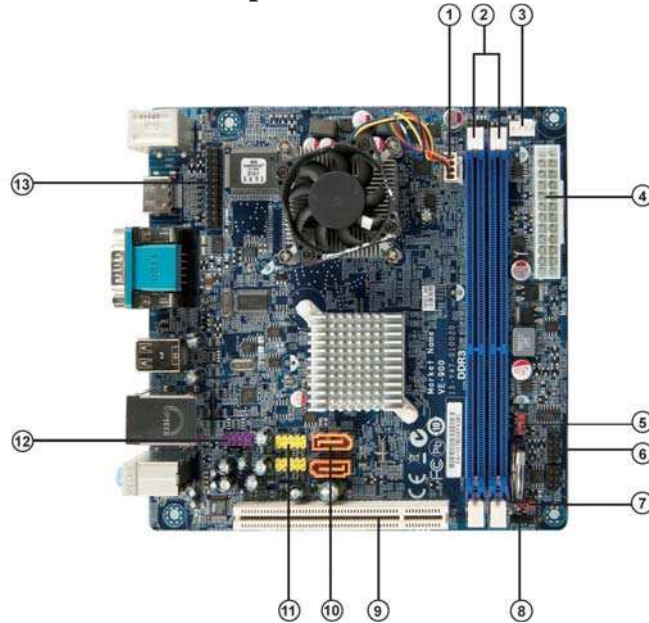
CPU	<ul style="list-style-type: none"><li>• Onboard NANO X2 1.4GHz processor</li><li>• Supports FSB 800MHz</li></ul>
Chipset	<ul style="list-style-type: none"><li>• VIA VX900</li></ul>
Memory	<ul style="list-style-type: none"><li>• Single-channel DDR3 memory architecture</li><li>• Two 240-pin DDR3 1066/800 DIMM sockets support up to 8GB</li></ul>
Expansion Slots	<ul style="list-style-type: none"><li>• 1 x PCI slot</li></ul>
Storage	<ul style="list-style-type: none"><li>• 2 x Serial ATA 3.0 Gb/s devices</li></ul>
Graphics	<ul style="list-style-type: none"><li>• Chrome 9 HD integrated graphic processor</li><li>• Pixel shader (SM2.0)</li><li>• Microsoft DirectX 7, 8, 9 compatible</li><li>• CRT Monitor 2048*1536</li><li>• 512MB frame buffer size</li><li>• Video accelerator</li></ul>
Audio	<ul style="list-style-type: none"><li>• VT1708S</li></ul>
LAN	<ul style="list-style-type: none"><li>• Realtek RTL8111E (10M/100M/1G), PXE</li><li>• RTL8111E 10/100/1000 Fast Ethernet Controller</li></ul>
Rear Panel I/O	<ul style="list-style-type: none"><li>• 1 x PS/2 keyboard &amp; 1 x PS/2 mouse connectors</li><li>• 4 x USB 2.0 ports</li><li>• 1 x HDMI port</li><li>• 1 x VGA port</li><li>• 1 x COM1 port</li><li>• 1 x RJ 45 LAN connector</li><li>• 1 x Audio port</li></ul>
Internal I/O Connectors & Headers	<ul style="list-style-type: none"><li>• 1 x 24-pin ATX Power Supply connector</li><li>• 2 x Serial ATA 3.0 Gb/s connectors</li><li>• 2 x USB 2.0 headers support additional 4 USB 2.0 ports</li><li>• 1 x Clear CMOS header</li><li>• 1 x Front panel header</li><li>• 1 x Front panel audio header</li><li>• 1 x Printer header</li><li>• 1 x 4-pin CPU FAN connector</li><li>• 1 x 4-pin System FAN connector</li><li>• 1 x Speaker header</li></ul>
System BIOS	<ul style="list-style-type: none"><li>• AMI BIOS with 8Mb SPI Flash ROM</li><li>• Supports Plug and Play, ACPI 3.0, PS2 keyboard or mouse wake up, Time power on, Hardware monitoring (CPU/System temperature and fan speed, CPU/DIMM voltage), F11 hot key for boot up devices option, Wake on lan, Lan Boot ROM, Supervisor Password.....etc.</li></ul>
Form Factor	<ul style="list-style-type: none"><li>• Mini-ITX 170mm x 170mm</li></ul>



*The real memory size may show less than 8GB due to some capacity are used for BIOS and other functions.*



## Motherboard Components



*Table of Motherboard Components*

LABEL	COMPONENTS
1. CPU_FAN1	CPU cooling fan connector
2. DDR3	240-Pin DDR3 slots
3. SYS_FAN1	System cooling fan connector
4. ATXPWR1	Standard 24-pin ATX power connector
5. USB_PWR	USB power jumper
6. F_PANEL1	Front panel switch / LED header
7. CLR_CMOS1	Clear CMOS jumper
8. SPEAKER	Speaker header
9. PCI1	32-bit add-on card slot
10. SATA1~2	Serial ATA 3.0 Gb/s connectors
11. F_USB1~2	Front panel USB 2.0 headers
12. F_AUDIO1	Front panel audio header
13. PRINTER1	Printer header

This concludes Chapter 1. The next chapter explains how to install the motherboard.



**Memo**



## **Chapter 2**

### **Installing the Motherboard**

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#### **Safety Precautions**

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards
- Do not press or touch the CPU cooler or Chipset heat sink

#### **Choosing a Computer Case**

There are many types of computer cases on the market. The motherboard complies with the specifications for the ITX system case. Some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

This motherboard carries a Mini-ITX form factor of 170 x 170 mm. Choose a case that accommodates this form factor.

#### **Installing the Motherboard in a Case**

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



*Do not over-tighten the screws as this can stress the motherboard.*

## Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

### *Setting Jumpers*

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 remove the jumper cap or place the jumper cap on just one pin, the jumper is OPEN.

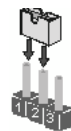


**SHORT**



**OPEN**

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





### Checking Jumper Settings

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



### Jumper Settings

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.
USB_PWR	3-pin	USB power jumper	1-2: S4/S5 power off 2-3: S4/S5 5VSB



1. To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to “Load Default Settings” and then “Save and Exit Setup”.
2. Make sure the 5VSB voltage power supply provides enough current before using the 5VSB function.



## Installing Hardware

### Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 240-pin DDR3 1066/800. The total memory capacity is 8 GB.

#### DDR3 SDRAM memory module table

Memory module	Memory Bus
<i>DDR3 1066</i>	<i>533 MHz</i>
<i>DDR3 800</i>	<i>400 MHz</i>

You must install at least one module in any of the two slots. Each module can be installed with 4 GB of memory.



*Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.*

### Installation Procedure

Refer to the following to install the memory modules.

- 1 This motherboard supports unbuffered DDR3 SDRAM .
- 2 Push the latches on each side of the DIMM slot down.
- 3 Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
- 4 Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
- 5 Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.





## Expansion Slots

### Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



#### PCI1 Slot

This motherboard is equipped with one standard PCI slot. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slot on this board is PCI v2.3 compliant.



*Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.*





Follow these instructions to install an add-on card:

- 1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
- 2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
- 3 Secure the metal bracket of the card to the system case with a screw.



*\* For reference only*

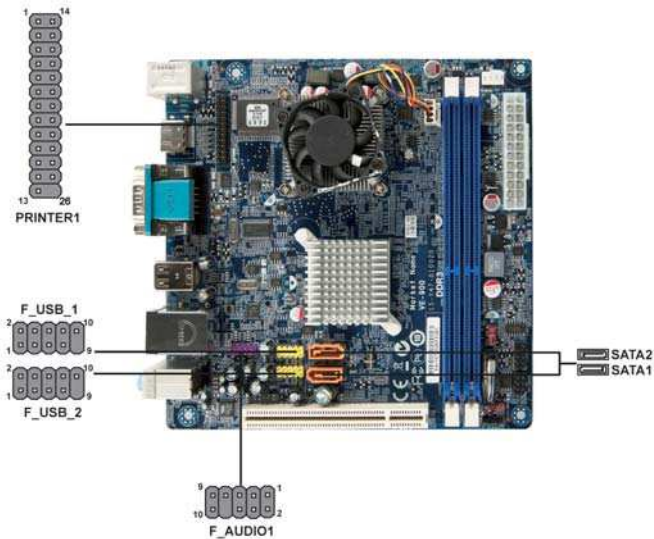


1. *For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.*
2. *The onboard PCI interface does not support 64-bit SCSI cards.*



### Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



#### SATA1~2: Serial ATA connectors

These connectors are used to support the Serial ATA devices for data transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

#### F\_AUDIO1: Front Panel Audio header for Azalia

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE_PORT1
7	SENSE_RETURN	8	KEY
9	PORT 2L	10	SENSE_PORT2



### F\_USB1~2: Front Panel USB headers

The motherboard has four USB 2.0 ports installed on the rear edge I/O port array. Additionally, some computer cases have USB 2.0 ports at the front of the case. If you have this kind of case, use auxiliary USB 2.0 connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	GND	Ground



Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

### PRINTER1: Onboard parallel port header

This is a header that can be used to connect to the printer.

Pin	Signal Name	Pin	Signal Name
1	STROBE	14	ALF
2	PD0	15	ERROR
3	PD1	16	INTT
4	PD2	17	SLCTIN
5	PD3	18	Ground
6	PD4	19	Ground
7	PD5	20	Ground
8	PD6	21	Ground
9	PD7	22	Ground
10	ACK	23	Ground
11	BUSK	24	Ground
12	PE	25	Ground
13	SLCT	26	Key



## ***Installing a SATA Hard Drive***

This section describes how to install a SATA Hard drive.

### **About SATA Connectors**

Your motherboard features two SATA connectors supporting a total of two drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

### **Installing Serial ATA Hard Drives**

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

Refer to the illustration below for proper installation:

- 1 Attach either cable end to the connector on the motherboard.
- 2 Attach the other cable end to the SATA hard drive.
- 3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.



*\* For reference only*

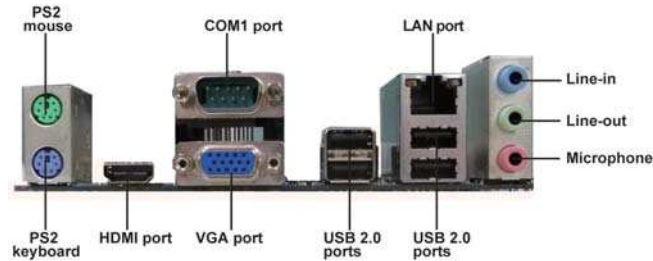


*This motherboard does not support the “Hot-Plug” function.*



## Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:



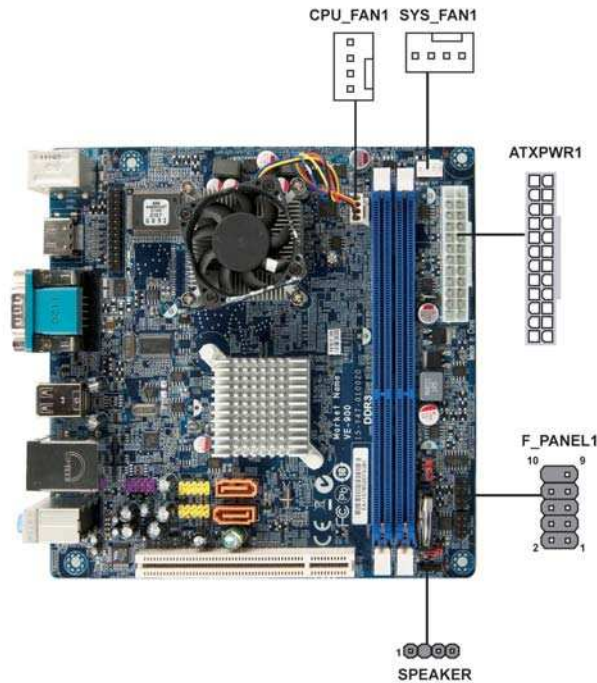
- PS2 Mouse** Use the upper PS/2 port to connect a PS/2 pointing device.
- PS2 Keyboard** Use the lower PS/2 port to connect a PS/2 keyboard.
- HDMI Port** Use the HDMI port to connect the monitor.
- VGA Port** Connect your monitor to the VGA port.
- COM1 Port** Use the COM1 port to connect the serial port.
- LAN Port** Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
- USB 2.0 Ports** Use the USB 2.0 ports to connect USB 2.0 devices.
- Audio Ports** Use the three audio ports to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stereo line-out signal. The third jack is for microphone.



## Connecting Case Components

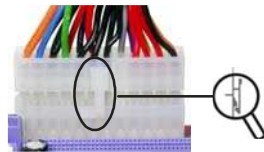
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

- 1 Connect the CPU cooling fan cable to **CPU\_FAN1**.
- 2 Connect the standard power supply connector to **ATXPWR1**.
- 3 Connect the case switches and indicator LEDs to the **F\_PANEL1**.
- 4 Connect the system cooling fan connector to **SYS\_FAN1**.
- 5 Connect the case speaker cable to **SPK**.



### Connecting 24-pin power cable

The ATXPWR1 24-pin connector allows you to connect to ATX v2.x power supply.



24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATXPWR1 match perfectly.



### CPU\_FAN1: CPU Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	Control	PWM



Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

### ATX\_PWR1: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

### SYS\_FAN1: System Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	N/A	N/A



The SYS\_FAN1 does not need to support Smart FAN.

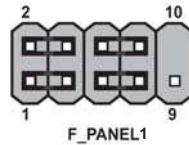
### SPK: Internal speaker

Pin	Signal Name
1	VCC
2	Key
3	NC
4	Signal



### Front Panel Header

The front panel header (F\_PANEL1) provides a standard set of switch and LED headers commonly found on ATX or micro-ATX cases. Refer to the table below for information:



Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (+)	2	FP PWR/SLP	*MSG LED (+)
3	HD_LED_N	Hard disk LED (-)	4	FP PWR/SLP	*MSG LED (-)
5	RST_SW_N	Reset Switch (-)	6	PWR_SW_P	Power Switch (+)
7	RST_SW_P	Reset Switch (+)	8	PWR_SW_N	Power Switch (-)
9	RSVD	Reserved	10	Key	No pin

\* MSG LED (single color)

#### Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

#### Power/Sleep Message waiting LED

Connecting pins 2 and 4 to a single color, front panel mounted LED provides power on/off (light/dark), sleep message waiting indication (blinking for S1 or S3 sleep mode).

#### Reset Switch

Supporting the reset function requires connecting pins 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

#### Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.





**Memo**



## Chapter 3

### Using BIOS

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#### About the Setup Utility

The computer uses the latest “American Megatrends Inc. ” BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system’s configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

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

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

#### *The Standard Configuration*

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

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

#### *Entering the Setup Utility*

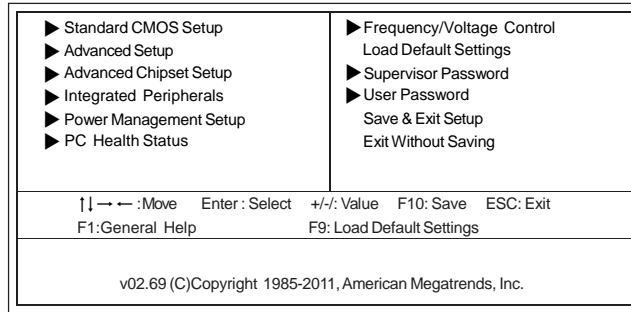
When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

**Press DEL to enter SETUP**



Press the delete key to access the BIOS Setup Utility.

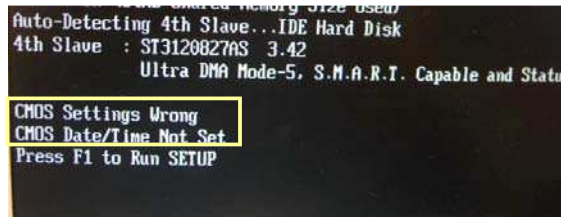
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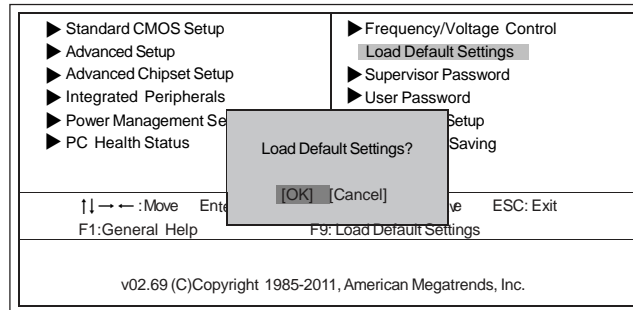
### ***Resetting the Default CMOS Values***

When powering on for the first time, the POST screen may show a “CMOS Settings Wrong” message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.



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## Using BIOS

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

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

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.



*The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.*

### **BIOS Navigation Keys**

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓←→	Scrolls through the items on a menu
+/-	Modifies the selected field's values
Enter	Select
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions



For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

### Standard CMOS Setup

This option displays basic information about your system.

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Standard CMOS Setup

		Help Item
Date	Mon 08/08/2011	
Time	00 : 01 : 00	
▶ SATA1	Not Detected	Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.
▶ SATA2	Hard Disk	
Halt On	No Error	Use [+] or [-] to configure system Date.

↑↓←→ : Move    Enter : Select    +/-: Value    F10: Save    ESC: Exit  
F1: General Help    F9: Load Default Settings

#### Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

#### ▶ SATA1~2

This motherboard supports two SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.

#### Halt On (No Error)

This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt the system.

Press <Esc> to return to the main menu setting page.



### Advanced Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

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Advanced Setup

		Help Item
Quick Power on Self Test	Enabled	
Boot Up Numlock Status	On	
APIC Mode	Enabled	
1st Boot Device	ST380011AS	
2nd Boot Device	CD/DVD	
3rd Boot Device	Removable Dev.	
▶ Hard Disk Drives	Press Enter	
Boot Other Device	Yes	
BIOS Protect	Disabled	
Full Screen LOGO Show	Enabled	
		Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

↑↓ → ← : Move Enter : Select +/- : Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

#### Quick Power on Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

#### Boot Up Numlock Status (On)

This item defines if the keyboard Num Lock key is active when your system is started.

#### APIC Mode (Enabled)

This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

#### 1st/2nd/3rd Boot Device (ST380011AS/CD/DVD/Removable Dev.)

Use these items to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.



### ►Hard Disk Drives

Scroll to this item and press <Enter> to view the following screen:

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Hard Disk Drives

Hard Disk Drives		Help Item
1st Drive	MAXTOR STM3160815AS	Specifies the boot sequence from the available devices.

↑↓ → ← : Move Enter: Select +/-: Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

Press <Esc> to return to the Advanced Setup page.

#### **Boot Other Device (Yes)**

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second and Third boot devices.

#### **BIOS Protect (Disabled)**

When enabled, this item plays the role to protect virus from attaching the system.

#### **Full Screen Logo show (Enabled)**

When enabled, this item play the role to show whether the boot screen of the computer has the VIA or not.

Press <Esc> to return to the main menu setting page.



## Advanced Chipset Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

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Advanced Chipset Setup

Select Display Device 1	CRT	Help Item
Select Display Device 2	HDMI	
DRAM Frequency	Auto	Options
DRAM Timing	Auto	
Share Memory Auto Detection	Auto	CRT
Share Memory Size	256MB	HDMI

↑↓ → ← : Move Enter : Select +/- : Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

### Select Display Device 1/2 (CRT/HDMI)

This item enable user to see the display device which he select.

### DRAM Frequency (Auto)

This item enables users to adjust the DRAM frequency. The default setting is auto and we recommend users leave the setting unchanged. Modify it at will may cause the system to be unstable.

### DRAM Timing (Auto)

This item enables users to adjust the DRAM Timing. The default setting is auto and we recommend users leave the setting unchanged. Modify it at will may cause the system to be unstable.

### Share Memory Auto Detection (Auto)

Disable this item to set the Share Memory Size. And if the item is set to Auto, Share Memory Size can be controlled according to the dram size. When the dram size is less than 512 MB, Share Memory Size should be set to 64 MB. While between 512 MB and 1 GB, it should be set to 128 MB. When more than 1 GB, it should be set to 256 MB.

### Share Memory Size (256MB)

This item displays the VGA Share Memory Value.

Press <Esc> to return to the main menu setting page.





## Integrated Peripherals

This page sets up some parameters for peripheral devices connected to the system.

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Integrated Peripherals

		Help Item
Onboard AUDIO Function	Enabled	
Onboard LAN Function	Enabled	
Onboard LAN Boot ROM	Disabled	Allow BIOS to
Serial Port1 Address	3F8/ IRQ4	Enabled/Disabled
Parallel Port Address	378	Audio Controller.
Parallel Port Mode	ECP	
ECP Mode DMA Channel	DMA3	
Parallel Port IRQ	IRQ7	
USB Functions	Enabled	
Legacy USB Support	Enabled	

↑↓ → ← : Move Enter : Select +/-: Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

### Onboard AUDIO Function (Enabled)

Use this item to enable or disable the onboard audio device.

### Onboard LAN Function (Enabled)

Use this item to enable or disable the onboard LAN function.

### Onboard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

### Serial Port1 Address (3F8/IRQ4)

Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.

### Parallel Port Address (378)

Use this item to enable or disable the onboard Parallel port, and to assign a port address.

### Parallel Port Mode (ECP)

Use this item to select the parallel port mode. You can select Normal (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or BPP (Bi-Directional Parallel Port).

### ECP Mode DMA Channel (DMA3)

Use this item to assign the DMA Channel under ECP Mode function.

### Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

### USB Functions (Enabled)

Use this item to enable or disable the USB function.

### Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices.

Press <Esc> to return to the main menu setting page.



## Power Management Setup

This page sets up some parameters for system power management operation.

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Power Management Setup

ACPI Suspend Type	<b>S3</b>	Help Item
Soft-off by PWR-BTTN	Instant OFF	Select the ACPI state used for System Suspend.
PWRON After PWR-Fail	Power Off	
Resume By PCI/PCI-E/Lan PME	Disabled	
Resume By USB (S3)	Enabled	
Resume By PS2 KB (S3)	AnyKey	
Resume By PS2 MS (S3)	Enabled	
Resume By PS2 KB (S5)	Disabled	
Resume By PS2 MS (S5)	Disabled	
Resume on RTC Alarm	Disabled	

↑↓ → ← : Move Enter: Select +/-: Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

### ACPI Suspend Type (S3)

Use this item to define how your system suspends. In the default, S3, the suspend mode is a suspend to RAM, i.e, the system shuts down with the exception of a refresh current to the system memory.

### Soft-off by PWR-BTTN (Instant OFF)

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

### PWRON After PWR-Fail (Power Off)

This item defines how the system will act after AC power loss during system operation. When you set to off, it will keep the system in Off state until the power button is pressed.

### Resume By PCI/PCI-E/Lan PME (Disabled)

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.



**Resume By USB (S3) (Enabled)**

This item allows you to enable/disable the USB device wakeup function from S3/S4 mode.

**Resume By PS2 KB (S3)/(S5)**

This item enables or disables you to allow keyboard activity to awaken the system from power saving mode.

**Resume By PS2 MS (S3)/(S5)**

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

**Resume on RTC Alarm (Disabled)**

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Press <Esc> to return to the main menu setting page.

**PC Health Status**

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.

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PC Health Status

Hardware Health Event Monitoring	Help Item
CPU Temperature : 42°C/107°F	If Enabled, Fan speed will speed--up or speed--down according to the temperature
System Temperature : 29°C/84°F	
CPU Fan Speed : 7848 RPM	
System Fan Speed : N/A	
CPU Vcore : 1.128 V	
VDIMM : 1.539V	
Smart Fan : Disabled	

↑↓ ← → : Move Enter: Select +/-: Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

**Hardware Health Event Monitoring**

These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage...etc.

- CPU Temperature
- System Temperature
- CPU Fan Speed
- System Fan Speed
- CPU Vcore
- VDIMM

**Smart Fan (Disabled)**

This item allows you to enable or disable the CPU SMART fan function, and the fan speed is controlled by changing PWM.

Press <Esc> to return to the main menu setting page.



### Frequency/Voltage Control

This page sets up some parameters of hardware monitoring function of this motherboard.

CMOS Setup Utility - Copyright (C) 1985-2011, American Megatrends, Inc.  
Frequency/Voltage Control

Manufacturer: VIA Ratio Actual Value: 7 FSB Speed : 800MHz Spread Spectrum <b>Enabled</b>	Help Item <b>Options</b> Disabled Enabled
--	--

↑↓ → ← : Move Enter : Select +/-: Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

#### **Manufacturer: VIA**

This item displays the information of current manufacturer of the CPU installed in your computer.

#### **Ratio Actual Value: 7**

This item shows the actual ratio of the CPU installed in your system.

#### **FSB Speed (800MHz)**

This item shows the FSB Speed of your CPU.

#### **Spread Spectrum (Enabled)**

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

Press <Esc> to return to the main menu setting page.



### Load Default Settings

This option opens a dialog box that lets you install stability-oriented defaults for all appropriate items in the Setup Utility. Select <OK> and then press <Enter> to install the defaults. Select <Cancel> and then press <Enter> to not install the defaults.

### Supervisor Password

This page helps you install or change a password.

CMOS Setup Utility - Copyright (C) 1985-2011, American Megatrends, Inc.  
Supervisor Password

Supervisor Password : Not Installed	Help Item
Change Supervisor Password <b>Press Enter</b>	Install or Change the password.

↑↓←→ : Move Enter : Select +/-: Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

#### Supervisor Password (Not Installed)

This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

#### Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Press <Esc> to return to the main menu setting page.



## User Password

This page helps you install or change a password.

CMOS Setup Utility - Copyright (C) 1985-2011, American Megatrends, Inc.  
User Password

User Password : Not Installed	Help Item
Change User Password <input type="button" value="Press Enter"/>	Install or Change the password.

↑↓←→ : Move Enter : Select +/-: Value F10: Save ESC: Exit  
F1: General Help F9: Load Default Settings

### User Password (Not Installed)

This item indicates whether a user password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

### Change User Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the user password.

Press <Esc> to return to the main menu setting page.



### ***Save & Exit Setup***

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, select [OK] to save and exit, or select [Cancel] to return to the main menu.

### ***Exit Without Saving***

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.



*If you have made settings that you do not want to save, use the “Exit Without Saving” item and select [OK] to discard any changes you have made.*

### ***Updating the BIOS***

You can download and install updated BIOS for this motherboard from the manufacturer’s Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

- 1 If your motherboard has an item called BIOS Protect in Advanced BIOS features, disable it. ( BIOS Protect prevents BIOS from being overwritten )
- 2 Prepare a bootable device or create a bootable system disk. ( Refer to Windows online help for information on creating a bootable system disk )
- 3 Download the Flash Utility and new BIOS file from the manufacturer’s Web site. Copy these files to the bootable device.
- 4 Turn off your computer and insert the bootable device in your computer. ( You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first )
- 5 At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AFUDOS.EXE 040706.ROM
- 6 When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for trouble shooting.



## Chapter 4

### Trouble Shooting

---

#### Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

##### *a) System does not power up and the fans are not running.*

1. Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. Check that the ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

##### *b) Power is on, fans are running but there is no display*

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.

2. Check the VGA adapter card (if applicable) is inserted properly.

3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.

- a. continuous 3 short beeps: memory not detected
- b. 1 long beep and 8 short beeps: VGA not detected





### ***c) The PC suddenly shuts down while booting up.***

1. The CPU may experience overheating so it will shutdown to protect itself. Ensure the CPU fan is working properly.
2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

### **Start up problems after prolong use**

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

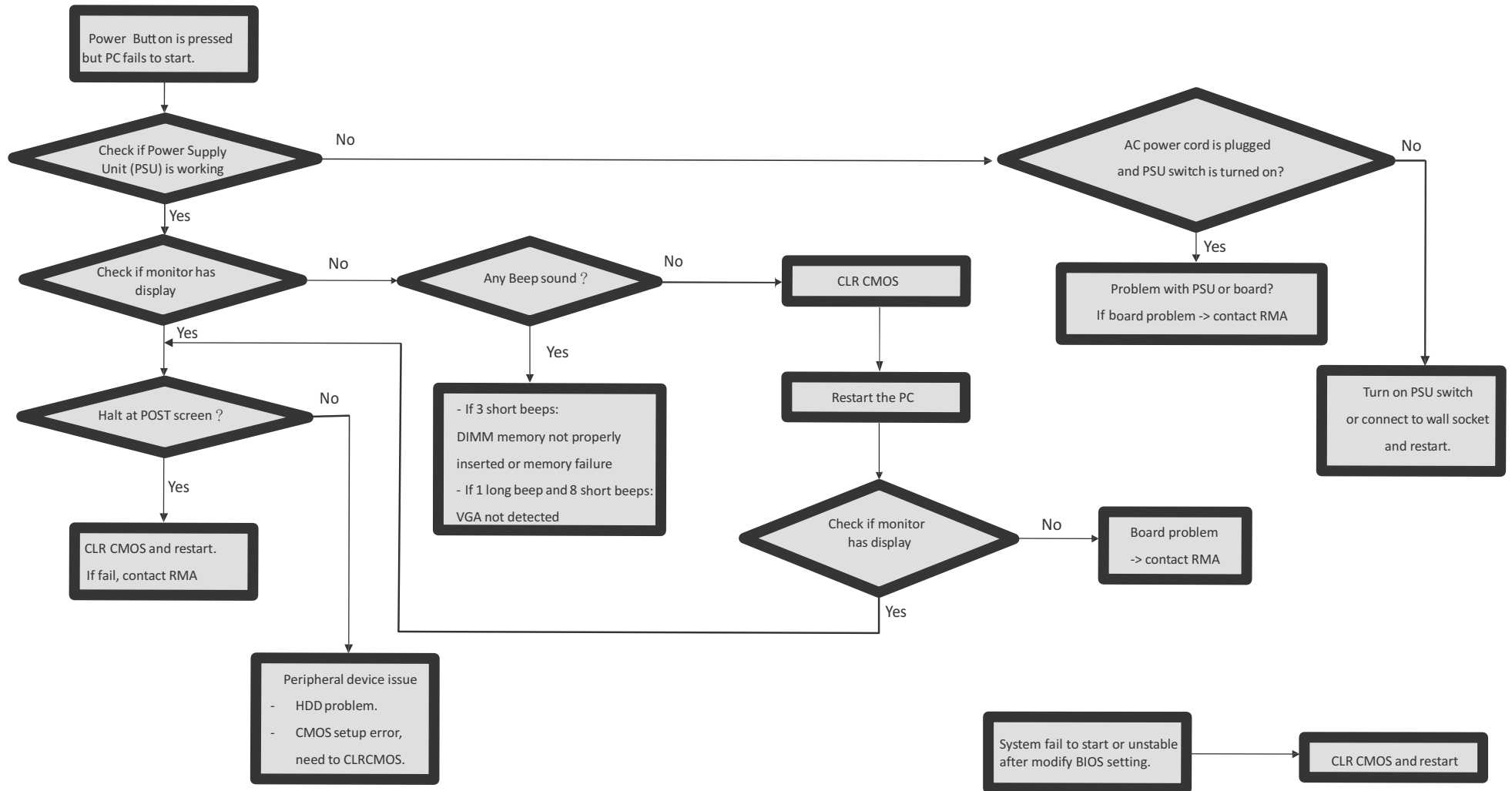
1. Clear the CMOS values using the CLR\_CMOS jumper. Refer to CLR\_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.
2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.
3. Check that the ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.
4. Remove the hard drive, optical drive or DDR memory to determine which of these components may be at fault.

### **Maintenance and care tips**

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.
2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.
3. Routinely clean the CPU cooler fan to remove dust and hair.
4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.
5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its life span.
6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

## Basic Troubleshooting Flowchart





**Memo**