MedPC-5500

Intel dual core i7 Processor

Multiple display output support

System chassis of easy clean design (no airhole)

Isolated I/O interface (COM, USB, LAN)

CE/FCC Class B Passed 18

IEC 60601-1-1-1:2005, EN60601-1-1:206

MedPC-5500 Manual 1st Ed
October, 2012

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Packing List

Before you begin installing your Medical Station, please make sure that the following items have been shipped:

- MedPC-5500 Medical PC
- Screws bag x 1 (HDD screw x 4)
- Rubber foot x 1
- Utility CD-ROM (Please insert the MedPC-5500 CD-ROM into external CD-ROM drive.) which Contains User's Manual (in PDF format), Drivers and Utilities

If any of these items are missing or damaged, you should contact your distributor or sales representative immediately.

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Safety & Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. **Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.**
9. **WARNING: To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth**
10. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.

13. Never pour any liquid into an opening. This could cause fire or electrical shock.
14. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
15. **Warning: Do not modify this equipment without authorization of the manufacturer**
16. **If any of the following situations arises, get the equipment checked by service personnel:**
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the users manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.
17. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.**
18. **External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL / IEC standard (e.g. UL 1950 for IT equipment and ANSI/AAMI ES 60601-1: 2005 AND CAN/CSA-C22.2 No. 60601-1:08 / IEC 60601 series for systems – shall comply**

with the standard IEC 60601-1-1, Safety requirements for medical electrical systems. Equipment not complying with UL 60601-1 shall be kept outside the patient environment, as defined in the standard.

Caution:

It may cause the danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer.

Classification

1. Degree of production against electric shock: not classified
2. Degree of protection against the ingress of water: IPX0
3. Mode of operation: Continuous
4. Type of protection against electric shock: Class I equipment
5. No Applied Part, No AP/APG

FCC

This device complies with Part 18 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

UL Module Description

	MEDPC-5500 modules are developed to suitable for the Classification Mark requirement

Safety Symbol Description

The following safety symbols are the further explanations for your reference.

	Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with ***ANSI/AAMI ES 60601-1: 2005 AND CAN/CSA-C22.2 No. 60601-1:08***
	Attention, consult ACCOMPANYING DOCUMENTS.
	Ground wire *Protective Ground wire.*

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Chapter 1

General Information

1.1 Introduction

The MedPC-5500 is based on Intel® Core™ i7 Dual Core processor, which delivers a performance improvement of more than 100 percent compared to systems running traditional single-core processors. With two cores, or computing engines, ONYX can simultaneously execute two computing tasks. It accommodates one 2.5” SATA SSD and two DDRIII SODIMM up to 8GB.

The fanless solution, integrated multimedia functions and extensive expansion options make them the perfect platform upon which to build comprehensive lifestyle computing applications.

The MedPC-5500 includes all the features of a powerful computer into a slim and attractive chassis. Combining the MEDPC-5500 into your system can achieve both cost-saving and efficient improvements in common applications including Surgical, Radiology, LIS (Lab Information Systems) and Electronic Medical Record. The MEDPC-5500 is definitely your perfect choice.

1.2 Feature

- Intel® Core™ i7 Dual Core processor
- Multiple display output support
- System chassis of easy clean design (no airhole)
- Top cover with IPX1 water proof protection
- Isolated I/O interface (COM, USB, LAN)
- CE/FCC Class B Passed 18
- IEC 60601-1-1-1:2005, EN60601-1-1:2006

1.3 Specification

Hardware Specifications

CPU	Onboard Intel® Core™ i7-2655LE 2.2H Processor
System memory	DDR3 1333 4GB
Disk Drive Space	2.5” SATA SSD driver bay x 1 (optional)
Function Key	Power On
Chipest	Intel HD Graphics 3000
Video	VGA x 1, Display Port 1
Audio	Mic-in x 1, Line-out x 1, phone jacks
Serial Port	Isolated RS-232/422/485 x1 , RS-232 x ~~1~~ **3**
Ethernet	Isolated GbE LAN x 2 by RJ-45
USB	**USB version 2.0 x 9, USB version 3.0 x 2**

Mechanical Specifications

Construction	Metal chassis with fanless system design
Dimension	283mm(W) x 64.95mm(H) x 242mm(D)
Carton Dimension	400mm x 350mm x 210mm
Net Weight	4.5Kg
Gross Weight	6Kg
Packing Filler	PE foam

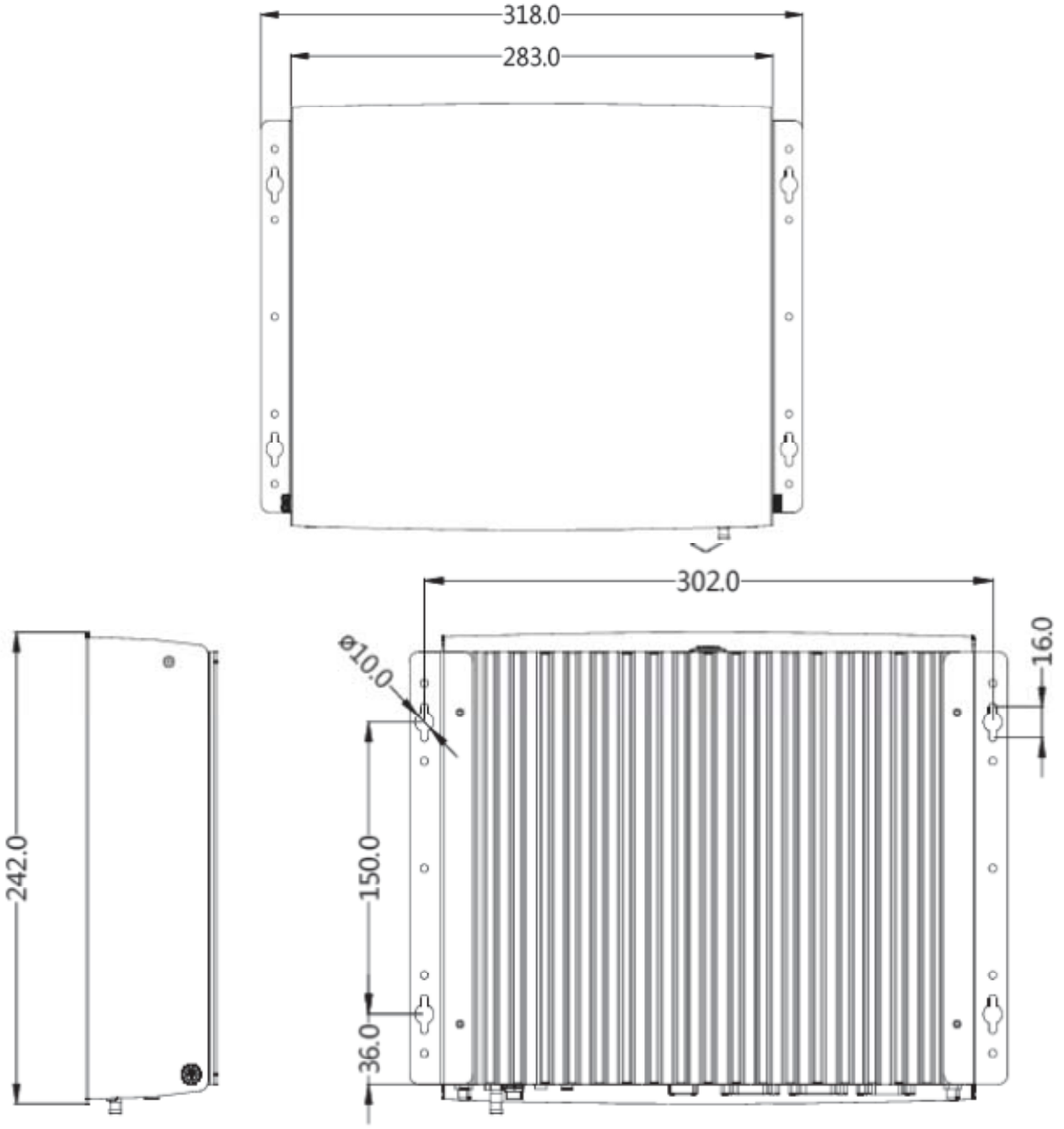
Power Supply Specifications

AC/DC Adapter	**POWER-WIN type PW-M110A-1Y240G**
Input Voltage	100-240V AC, 2.0-**1.0**A @ 50-60 Hz
Output Voltage	24V, **4.6**A,**110W** max.
MTBF	100,000 hrs operation at 25˚C

Environmental Specifications

Operating Temperature	**0˚C to 30˚C (32˚F ~86˚F)** **10°C ~ 40°C (32°F ~ 104°F)**
Storage Temperature	-20˚C to 60˚C (-4˚F ~140˚F)
Storage Humidity	**5% ~ 95% @ 40˚C, Non-Condensing**
Pressure	**850~1000hPa(Operating) /** **700~1060hPa(Transport / Storage)**
EMI / Safety	CE、FCC Class B Passed 18 (醫療類) cULus Mark/UL+ VTC Report+RMF(ISO 14971) (CAN/CSA-C22.2No.60601-1-08;ANSI/AAMI ES60601-1:2005, IEC 60601-1-1:2005,EN 60601-1:2006, ISO 14971:2007

1.4 Dimension



Chapter 2

Hardware Introduction

2.1 Safety Precautions

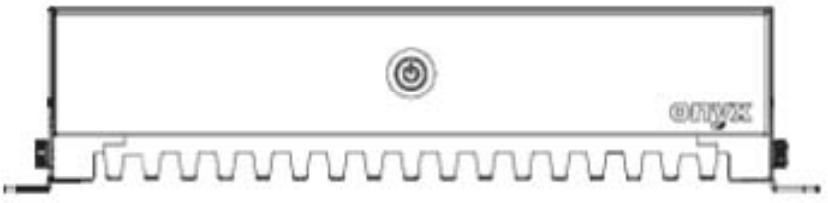
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 A Quick Tour of the MEDPC-5500

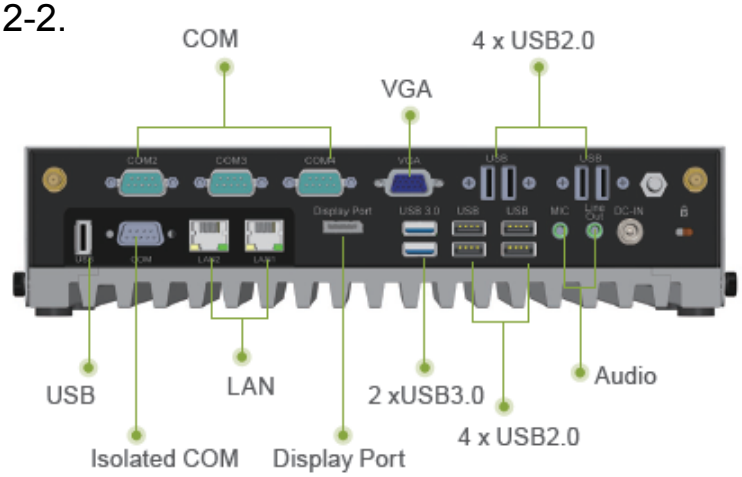
Before you start to set up the MEDPC-5500, take a moment to become familiar with the locations and purposes of the controls, drives, connections and ports, which are illustrated in the figures below.

When you place the MEDPC-5500 upright on the desktop, its front side appears as shown in Picture 2-1.



Picture 2.1: Front View of the MEDPC-5500

When you turn the 5500 around and look at its rear side, as shown in Picture 2-2.



Picture 2.2: Rear view of the Zeus Series

2.3 Turn On and Boot up into Windows OS

This section is for Windows operating system only. If you are installing a different operating system, please contact your vendor for installation details.

Your 5500 will begin loading Windows OS once you push the power button to turn power on. After less than one minute, Windows desktop screen will appear.

You can select the programs from the start menu in the left-down corner of the desktop screen.

2.4 Turn off

Turning off ZEUS properly is important for system reliability. There are two ways to turn off the system.

1. On the start menu, click “shut down” and select “OK”
2. Push the power button and then the system will shut down

automatically

2.5.1 Overview

The motherboard comes with four 204-pin Double Data Rate 3 (DDR3) SO Dual Inline Memory Modules (DIMM) sockets. DDR3 SODIMMs are notched differently to prevent installation on a DDR2 SODIMM socket. The following figure illustrates the location of the sockets:

204-Pin DDR3 SODIMM sockets

Channel	Socket
Single Channel	SODIMM_A1
	SODIMM_A2

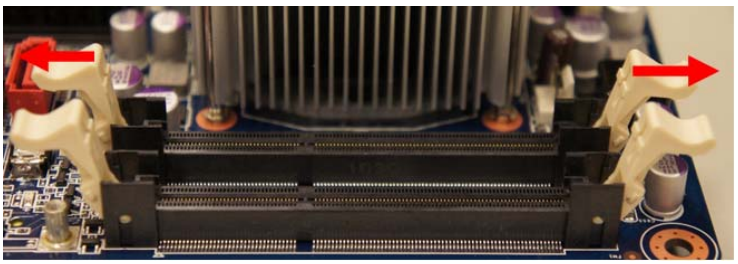
2.5.2 Memory Configurations

You may install 1 GB and 2 GB unbuffered ECC or non-ECC DDR3 SODIMMs into the SODIMM sockets using the memory configurations in this section.

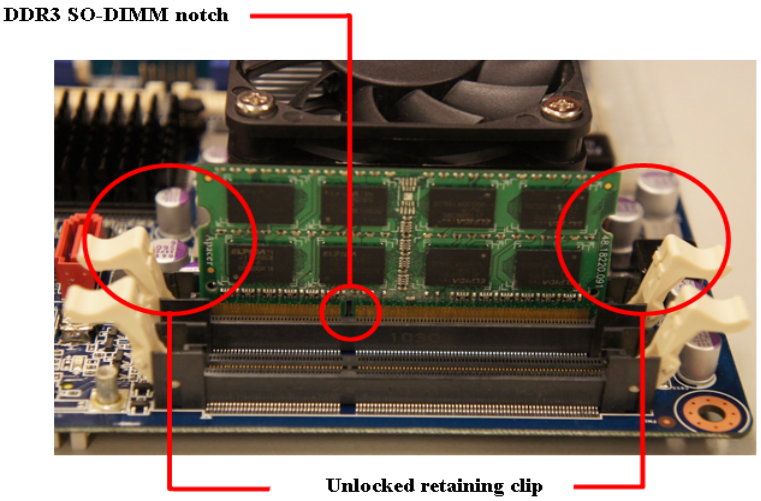
- IF you installed two 2GB memory modules, the system may detect less than 3GB of total memory because of address space allocation for other critical functions. This limitation applies to Windows XP 32-bit version operating system since it does not support PAE (Physical Address Extension) mode.
- IF you install Windows XP 32-bit version operating system, we recommend that you install less than 3GB of total memory.

2.5.3 Installing a SO-DIMM

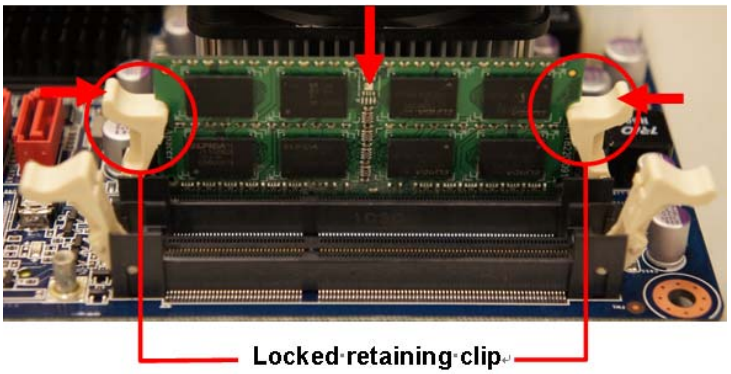
1. Unlock a DIMM socket by pressing the retaining clips outward. (simulative sample)



2. Align a SO-DIMM on the socket such that the notch on the SO-DIMM matches the break on the socket. (simulative sample)



3. Firmly insert the SO-DIMM into the socket until the retaining clips snap back in place and the SO-DIMM is properly seated. (simulative sample)



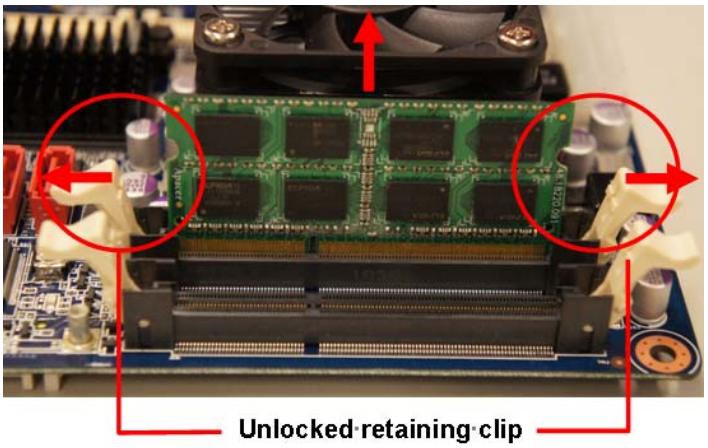
- The DDR3 SO-DIMM sockets do not support DDR SO-DIMMs. DO NOT install DDR2 SO-DIMMs to the DDR3 SO-DIMM

socket.

Make sure to unplug the power supply before adding or removing SO-DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

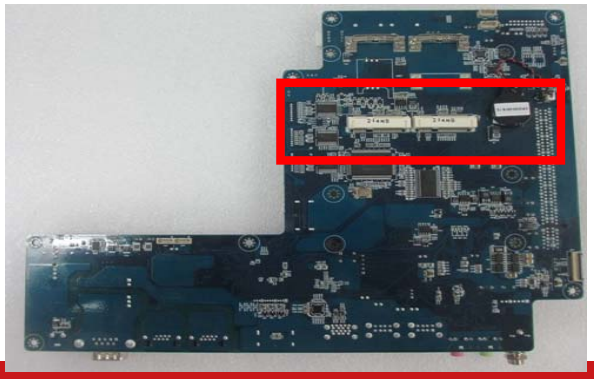
2.5.4 Removing a SO-DIMM

1. Simultaneously press the retaining clips downward to unlock the DIMM.
2. Remove the DIMM from the socket. (simulative sample)



2.6 Mini PCI Express

This motherboard supports two MINI PCI Express. The following figure shows a Decode card installed on the MINI PCI Express slot.



2.7 Clear CMOS9CLTRC1

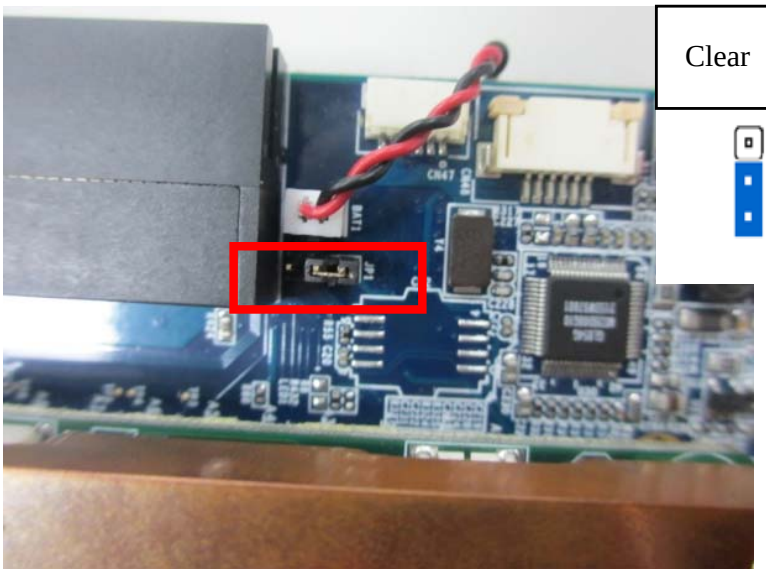
This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which includes system setup information such as system passwords.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the onboard battery.
3. Move the jumper cap from pins 2-3 (default) to pins 1-2. Keep the cap on pins 1-2 for about 5~10 seconds, then move the cap back to pins 2-3.
4. Re-install the battery.
5. Plug the power cord and turn ON the computer.

6. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.

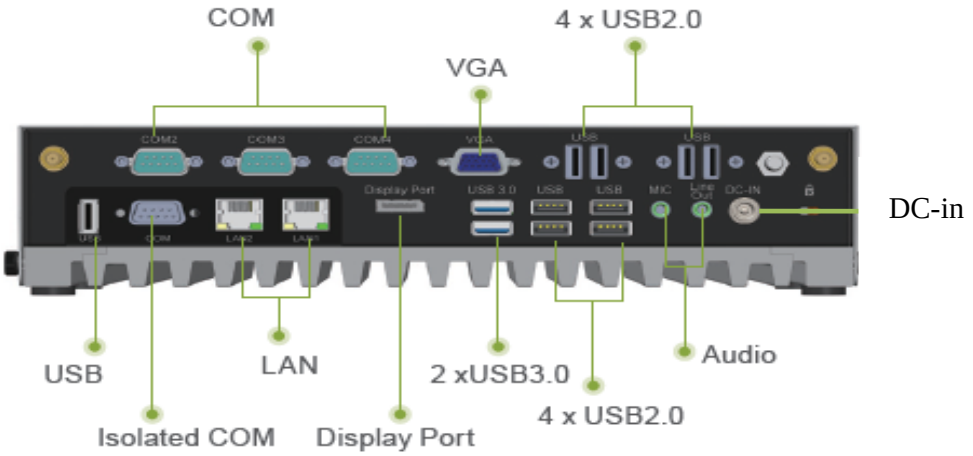
Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!



Clear	Normal(Def
	

You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

2.8 Rear Panel Connectors



1. DC-in power jack This port is for 24V DC power.

2. COM These 9-pin COM port is for serial devices.

3. VGA port This 15-pin port connect is for a VGA monitor.

4. Display port This 20-pin port is for external connectors on desktops, notebooks, graphics cards, monitors..

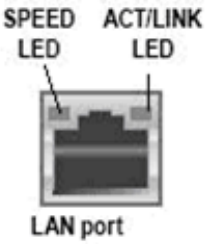
5. USB 2.0 ports These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

6. USB 3.0 ports These 9 Universal Serial Bus (USB) ports are available for connecting USB 3.0 devices.

6. LAN (RJ-45) port. These port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.

LAN port LED indications

SPEED LED		ACT / LINK LED	
Status	Description	Status	Description
OFF	10Mbps connection	OFF	No link
Orange	100Mbps connection	Green	Link
Green	1Gbps connection	Blinking	Data activity



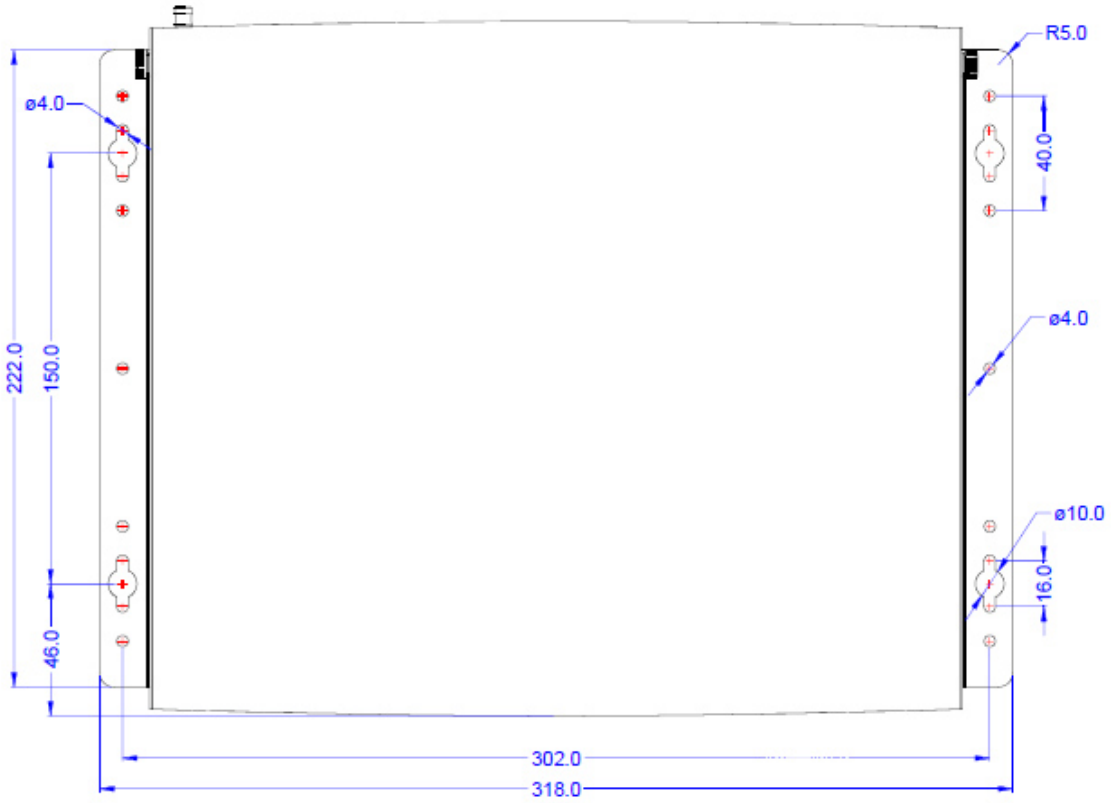
9. Line In port (light blue). This port connects a tape, CD, DVD player, or other audio sources.

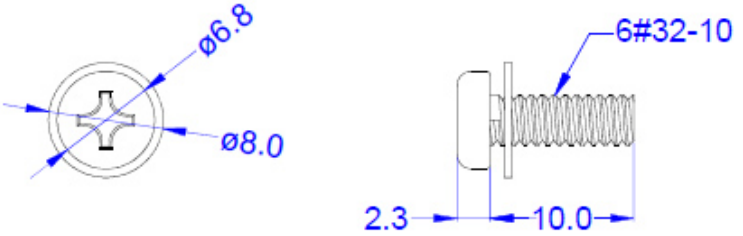
10 Line Out port (lime). This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.

11. Microphone port (pink). This port connects a microphone.

2.9 Mount kit

The mount kit screw hole and screw type as below





Chapter

3

BIOS Setup

3.1BIOS Setup Program

This motherboard supports a programmable firmware chip that you can update using the provided utility. Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup.” This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware hub.

The firmware hub on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On-Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing

<Ctrl + Alt + Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.

- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** from the BIOS menu screen.
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the system builder's website to download the latest BIOS file for this motherboard

3.2 Legend Box

The keys in the legend bar allow you to navigate through the various setup menus

Key	Function Description
←	Select Screen
↑↓	Select Item

+ -	Change Option / Field
Enter	Go to Sub Screen
PGDN	Next Page
PGUP	Previous Page
F1	General Help
F2	Previous Values
F3	Optimized Defaults
F4	Save & Exit
ESC	Exit

3.3 List Box

This box appears only in the opening screen. The box displays an initial list of configurable items in the menu you selected.

3.4 Sub-menu

Note that a right pointer symbol  appears to the left of certain fields. This pointer indicates that you can display a sub-menu from this field. A sub-menu contains additional options for a field parameter. To display a sub-menu, move the highlight to the field and press <Enter>. The sub‑menu appears. Use the legend keys to enter values and move from field to field within a sub-menu as you would within a menu. Use the <Esc> key to return to the main menu.

Chapter

4

Driver Installation

There are several installation ways depending on the driver package under different Operating Systems.

Please follow the sequence below to install the drivers:

Step 1 – Install INF Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

Step 4 – Install Audio Driver

Step 5 – USB 3.0 Driver

Step6 – ME Driver

Step 7 – Serial Port Driver(optional)

Please read instructions below for further detailed installations.

4.1 Installation

Insert the MedPC-5500 CD-ROM into the CD-ROM drive. And install the drivers from Step 1 to Step 5 in order.

Step 1 – Install Intel® INF Driver

1. Click on the ***Step 1 – Inf Driver*** folder and double click on the ***infinst911autol.exe***
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 2 – Install Intel® VGA Driver

1. Click on the ***Step 2 – VGA Driver*** folder and select the OS folder your system is
2. Double click on the ***.exe*** file located in the OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 3 – Install Intel LAN Driver

1. Click on the ***LAN driver*** folder and select the ***Winx32*** folder and double click on ***.exe*** for x86 (32bit) OS; if the OS is Windows 64bit OS, please select the ***Winx64*** folder and double click on ***.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 4 –Install Audio Driver

1. Click on the ***Step 4 –AUDIO driver*** folder and select the corresponding folder for your operating system and double click on **Setup*.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 5 – Install USB3.0 Driver

1. Click on the ***USB3.0*** folder and and select the **USB3_allOS_2.1.19.0_PV** folder and double click on

the ***setup.exe***

2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 6 – Install Me Driver

1. Click on the Me ***Driver*** folder and and select the **Intel_Management_Engine_Interface_v7.0.0.1144** folder and double click on the ***setup.exe***
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 7 – Install Serial Port Driver

1. Click on the ***Serial Port Driver*** folder and and select the **WIN7_32 / WIN7_64 / WINXP_32** folder and double click on the ***setup.exe***
2. Follow the instructions that the window shows

Appendix A

Miscellanea

A.1 General Cleaning Tips

You may need the following precautions before you begin to clean the computer. When you clean any single part or component for the computer, please read and understand the details below fully.

1. Never spray or squirt the liquids directly onto any computer component. If you need to clean the device, please rub it with a piece of dry cloth.
2. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
3. Turn the system off before you start to clean up the component or computer.
4. Never drop the components inside the computer or get circuit board damp or wet.
5. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
6. Try not to put any food, drink or cigarette around the computer.
7. ONYX Healthcare Inc. has tested and verified these cleaning disinfectants, CIDEX, Viraguard, Control III Disinfectant Germicide, Caviwipes, Dispatch Disinfectant Cleaner CLH69101, Puregreen 24 Disinfectant, can be used with the ONYX-175/195. Use of any other

disinfectants will void the warranty.

A.2 Cleaning tools

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- **Cloth** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- **Water or rubbing alcohol** – You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer. Unknown solvents may be harmful to the plastics parts.
- **Vacuum cleaner** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time

these items can restrict the airflow in a computer and cause circuitry to corrode.

- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- **Foam swabs** - Whenever possible it is better to use lint free swabs such as foam swabs.

Note:

We strongly recommended that you should shut down the system before you start to clean any single components.

Please follow the steps below.

1. Close all application programs.
2. Close operating software.
3. Turn off power switch
4. Remove all device
5. Pull out power cable

A.3 Scrap Computer Recycling

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform us as soon as possible for the suitable solution. For the computers that are no longer useful or work well, please contact with worldwide distributors for recycling.

The worldwide distributors show on the following website:

http://www.onyx-healthcare.com.tw/Contact.php

Note:

Follow the national requirement to dispose unit