

AEMH61-631

AEMH62-632

Intel® H61 Chipset

用户手册

User's Manual

Version 2.2

Date:2012.12

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安全指导

01. 务必请仔细通读本安全指导。
02. 务必请妥善保管本手册，以备将来参考。
03. 请保持本设备的干燥。
04. 机箱的开口缝隙是用于通风避免机箱内的部件过热，请勿将此类开口掩盖或堵塞。
05. 在将本设备与电源连接前，请确认电源电压值，将电压调整为110V/220V。
06. 请将电源置于不会被践踏到的地方，并且不要在电源线上堆置任何实物。
07. 插拔任何扩展卡或设备模块前，请将电源线拔下。
08. 请留意手册上提到的所有注意和警告事项。
09. 通电之前请确认主机箱中不要遗留螺丝等金属物件，以免电气短路烧毁其他部件。
10. 不得将任何液体倒入机箱开口的缝隙中，否则会产生严重损坏或电路瘫痪。
11. 如果发生以下情况，请找专业人员处理：
 - a. 电源线或插头损坏
 - b. 液体渗入机器内
 - c. 机器暴露在潮湿的环境中
 - d. 机器工作不正常或用户不能通过本手册的指导使其正常工作
 - e. 机器跌落或受创
 - f. 机器有明显的破损迹象

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第一章 主板简介及规格说明

为了保证产品品质并适合市场需求，此主板通过了抗老化、低电压、各种温度、湿度环境下的反复测试，并通过市面多款主流视频采集压缩卡的兼容性测试，均能满足行业的需求。是兼顾性价比、稳定、寿命长的高规格主流平台解决方案，本手册主要介绍了产品的规格参数及安装主板的步骤。



由于主板规格和BIOS软件将不断更新，本手册之相关内容变更恕不另行通知，一切仅供参考，请以实际为准。

1.1 包装盒内物品清单

1. AEMH61-631或AEMH61-632主板
2. SATA数据线
3. COM口连接线
4. 光盘（含驱动和用户手册）
5. 挡板

1.2 主板特色

随着科学技术的发展，特别是信息网络技术的飞跃，积极地促进了安防技术的发展，提高了安防行业的应用水平。市场在经历了模拟时代、模数混合时代到现在的数字时代监控三大时期，正逐步向网络、智能化、实用化、行业化方向发展，也由单一项目转成视频监控、防盗报警、周边防范、出入通道控制等综合的弱电工程。

市场长期以来，一直停滞在945芯片时代,但是945芯片组所使用的2代DDR内存、LGA775架构CPU等这些已远远跟不上现在PC市场的发展，最终导致价格高、性能差等等，为了补足这一缺陷，满足现在客户的不同需要，所以我司主机板采用Intel H61主流芯片，其主要特性如下：

- ☆ **专业性：**所有接口都经过EMI、静电保护、防雷、纹波过滤等特殊处理，为行业用户量身定制。
- ☆ **稳定性：**全部使用“FUJITSU”军工级固态电容；产品经过（温度：-20℃

--75℃，湿度：20%-95%RH) 严格检验，确保全天候在高温、干燥、静电、寒冷、潮湿的环境中稳定运行。

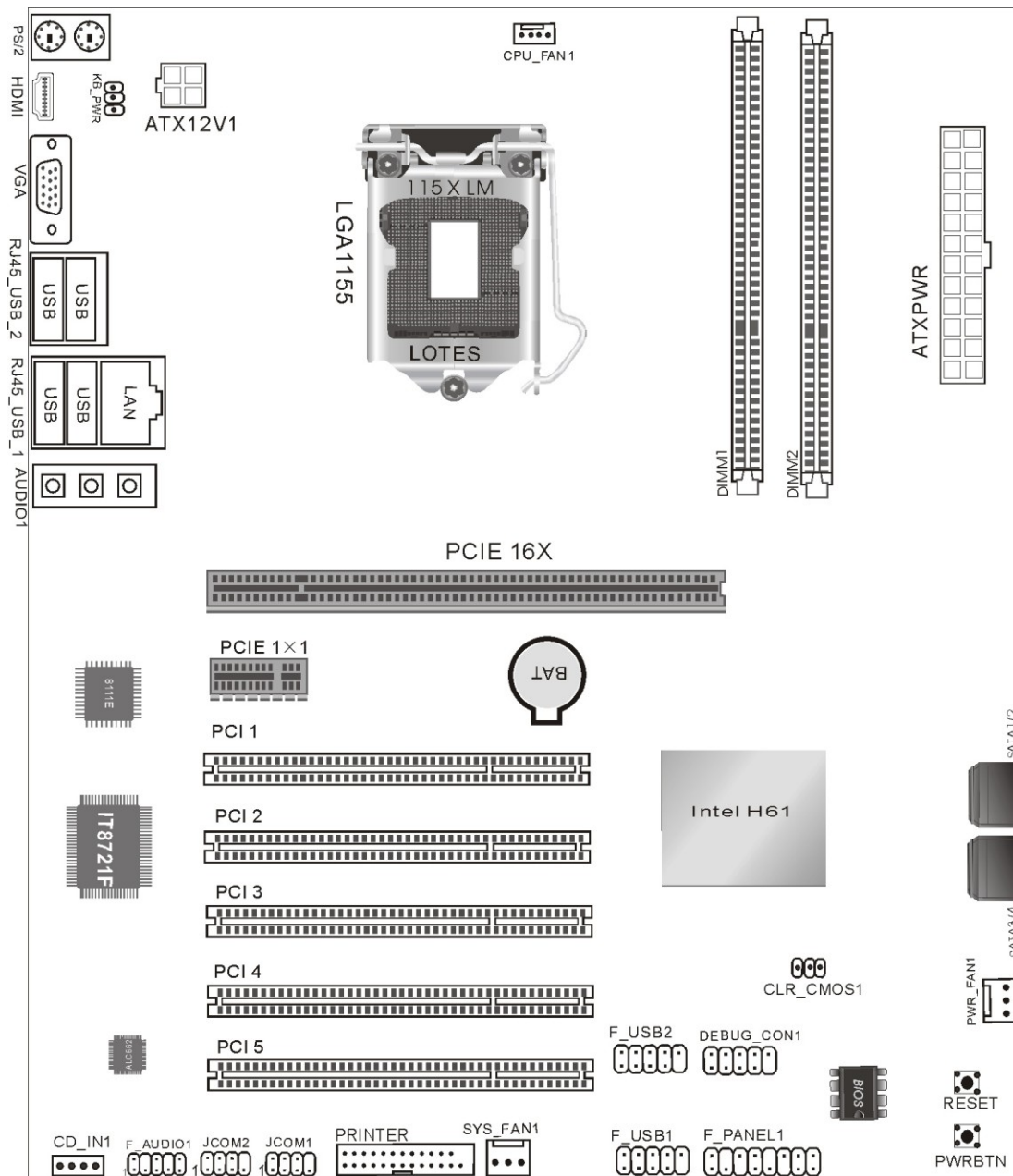
- ☆ **兼容性：**兼容市面上九成以上视频采集卡，支持5个PCI多达40路音视频采集；产品提供4-9个SATA，可接高达4或9个硬盘，能够满足用户长时间的不间断数据采集。
- ☆ **操控性：**产品支持来电开机、震铃开机、远程开机、故障重起等行业专有功能，用户在无人看守、远近期操作上都非常方便。

1.3 主板规格简述

AEMH61-631&632都是通用型行业专用产品，其采用INTEL H61芯片，支持2个COM口，AEMH61-631主板最大可外接4个SATA，AEMH61-632主板最大可外接9个SATA，支持双显示输出。

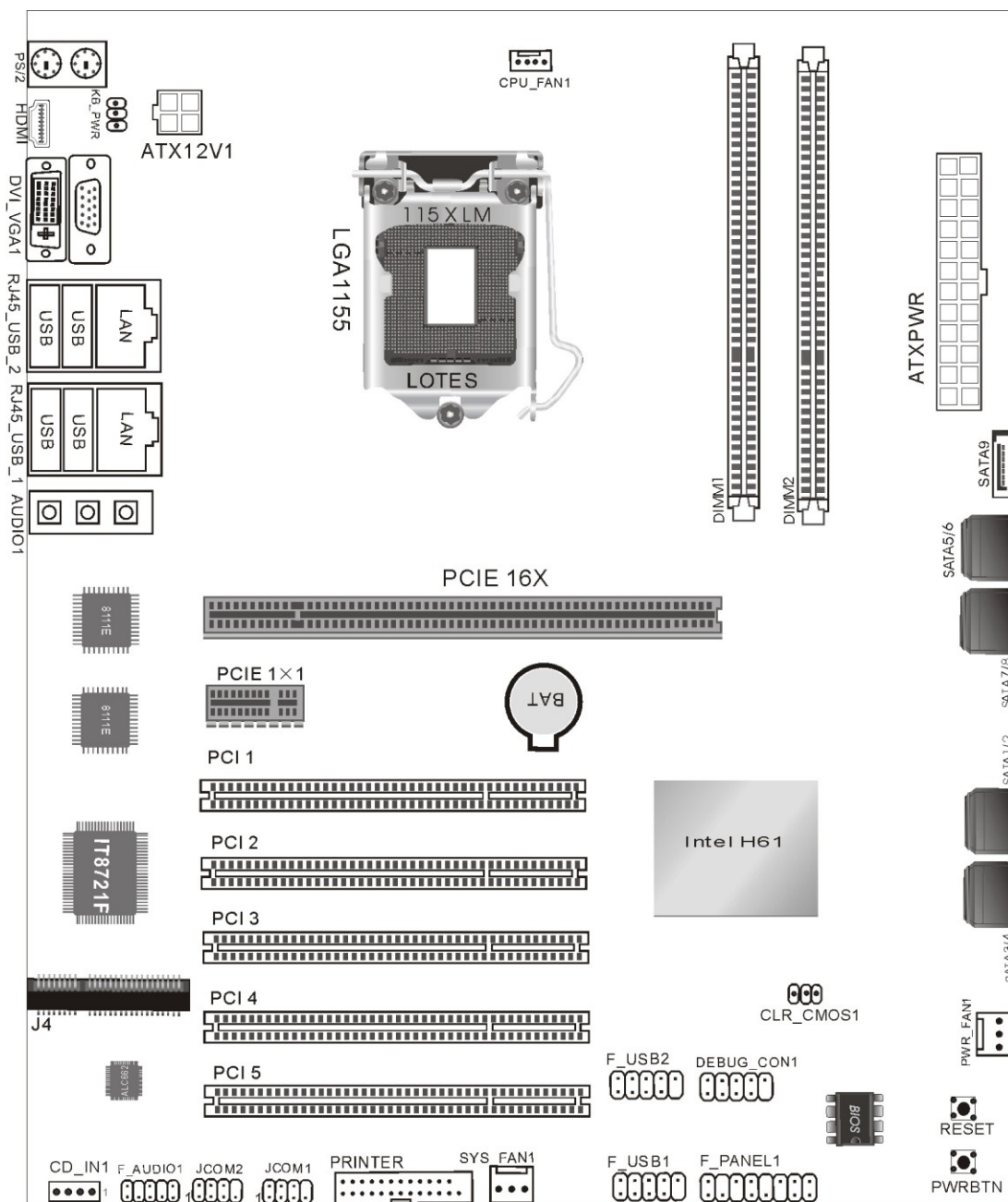
1.4 主板 Layout 图及规格表

1.4.1 AEMH61-631 主板布局



AEMH61-631主板布局图

1.4.2 AEMH61-632 主板布局



AEMH61-632主板布局图

1.4.3 主板规格

AEMH61-631&AEMH61-632主板规格如下表:

处理器	- 支持LGA1155 Intel® Core i7/i5/i3及Pentium/Celeron Sandy & Ivy Bridge系列处理器
芯片组	- 南桥: Intel® H61
内存	- 支持双通道DDRIII 1066/1333内存. - 最大容量支持16GB - 内存插槽2×DDR3 DIMM
板载显卡	- 显示核心视CPU而定
板载声卡	- 集成ALC662声卡芯片 - 支持2/4/5.1声道输出
板载网卡	- 集成Realtek8111E 10/100/1000M自适应网卡芯片, 支持无盘 (AEMH61-631) 集成双Realtek8111E 10/100/1000M自适应网卡芯片, 支持无盘 (AEMH61-632)
存储标准	- 4个SATA 300MB/s接口 (AEMH61-631) 9个SATA 300MB/s接口 (AEMH61-632) - 1个Mini-PCIE MSATA接口 (仅AEMH61-632)
扩展槽	- 1个PCI Express 16X插槽 - 1个PCI Express 1X插槽 - 5个PCI 插槽
USB 接口	- 8×USB 2.0接口 (4个后面板板载, 4个扩展)
内部输入/出接口	- 1个24PIN主电源接口 - 1个4PIN 12V电源接口 - 4个SATA 300MB/s接口 (AEMH61-631) 9个SATA 300MB/s接口 (AEMH61-632) - 1个CPU风扇接口、1个系统风扇接口、1个PWR风扇接口 - 1个Mini-PCIE接口 (支持MSATA, 仅AEMH61-632) - 1组前面板插针 - 1个前置声卡插针 - 2组USB 2.0插针

	<ul style="list-style-type: none"> - 1个JCOM1插针 - 1个JCOM2插针 - 1个清除CMOS插针 - 1组CD_IN插针 - 2个快捷按钮 - 1组键盘开机控制跳帽 - 1组DEBUG_CON插针
后面板接口	<ul style="list-style-type: none"> - 1个PS/2键盘接口 - 1个PS/2鼠标接口 - 1个DVI接口（仅AEMH61-632） - 1个VGA接口 - 4个USB接口 - 1个RJ45接口（AEMH61-631） - 2个RJ45接口（AEMH61-632） - 1个HDMI接口 - 3×AUDIO接口
输入/输出控制器	<ul style="list-style-type: none"> - IT8721F
硬件监测功能	<ul style="list-style-type: none"> - CPU温度监控 - 系统温度监控 - 风扇转速监控 - 各电压监控——可选
BIOS	<ul style="list-style-type: none"> - 1×32Mbit flash
主板结构及尺寸	<ul style="list-style-type: none"> - ATX 295mm×200mm

第二章 硬件设备的安装说明

2.1 中央处理器的安装

要安装Intel 1155针CPU，请按下面的步骤操作

- ⚡ 在你将1155针CPU插入插槽之前，请检查CPU表面是否不洁或者插槽上是否有歪斜的针脚。如果发现以上情形，切勿强行将CPU插入插槽。否则CPU或插槽将会严重受损。

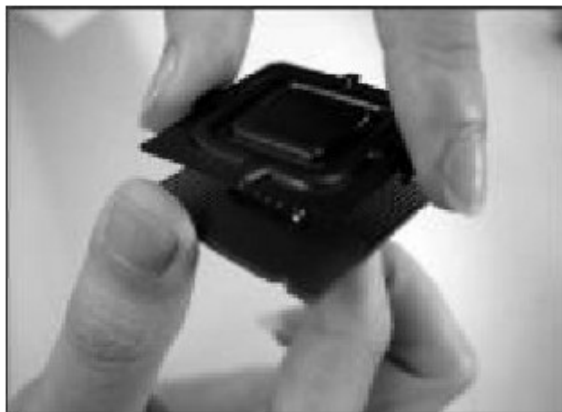
步骤一： 将主板CPU插座侧边的固定拉杆拉起，转动拉杆至大约135度的完全打开位置。然后转动承载上盖至大约100度的完全打开位置。



步骤二： 去除承载上盖的防护盖：用你的左手食指和拇指扶着承载金属框边缘，用右手拇指揭开防护盖便使它脱离插槽，同时按压防护盖的中央部分助力移除。



步骤三： 卸下CPU保护盖，确认主机板上特别设计的Socket底座的2个凸出位置及CPU的2个定位凹口位置方向对准后，将CPU轻轻平放置入Socket中，如果两者方向未对准CPU将无法置入Socket中。请注意避免让CPU歪斜而造成针脚损坏。



步骤四： CPU放置好后，盖回承载上盖，将拉杆压回，将承载上盖卡入拉杆的固定卡舌之下，固定住拉杆。CPU的安装即完成。



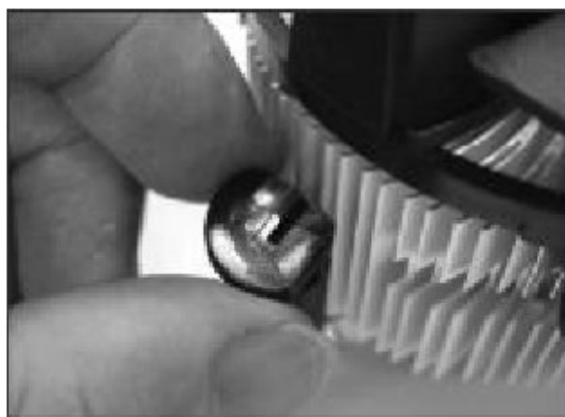
2.2 CPU 风扇的安装

为了CPU能正常工作，必须选用散热性能得到保证的散热器。这里我们以Intel的原装风扇为例，说明CPU风扇的安装过程。

步骤一： 在安装风扇前检查一下风扇散热片底部是否涂有散热膏（Intel的原装风扇上一般带有导热材料TIM），如果您的风扇散热片底部没有导热材料，请在安装前在CPU上表面涂上适量散热膏。



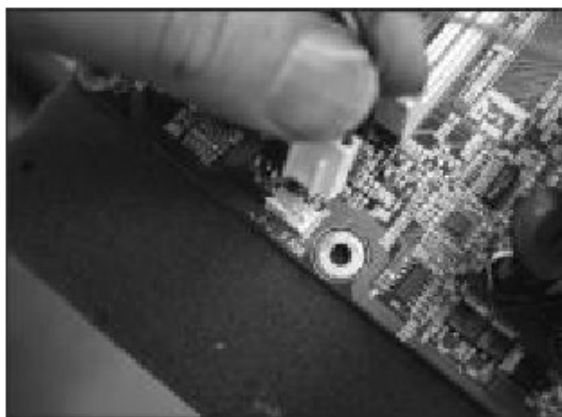
步骤二： 请先卸下风扇电源线，将四个扣环的缺口转向内。



步骤三： 确保将风扇电缆放在最靠近主板风扇电源插头的一侧，将散热器放在 LGA1155 插座上，将四个扣件对准主板上的四个通孔，然后将散热器上的四个扣件按下扣紧。



步骤四： 将风扇电源线接口插在主机板上标有“CPU FAN”的四线排针处。



2.3 内存的安装

主板支持双通道内存，单根容量可从最小的2GB扩展至最大8GB。安装步骤如下：

- a. 将内存槽两端的白色卡榫向外扳开。
- b. 将内存条有金手指的那边对准内存槽，注意内存条的凹孔要对应插槽的凸起点。
- c. 将内存条插入插槽中。若安装正确则插槽两端的白色卡榫会因为内存条置入而自动卡紧，否则不会卡紧。

2.4 视频采集卡的安装

视频采集卡分为PCI和PCI E-1X两种接口模式，安装采集卡时，请在对应的插槽内垂直插入并向下压紧，方向要正确，否则可能会损坏采集卡或主板的插槽。

注：PCI接口的采集卡只能接在主板的PCI插槽上，其不能插在PCI E插槽上；PCI E-1X接口的采集卡可插在主板的PCI-E 16X插槽上面，其不可插在PCI插槽上，但是两种接口的采集卡不可以同时使用。

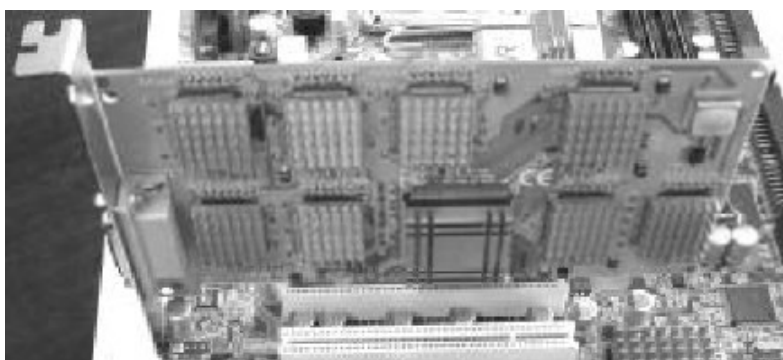


图 1: PCI 接口的采集卡插在 PCI 插槽上。

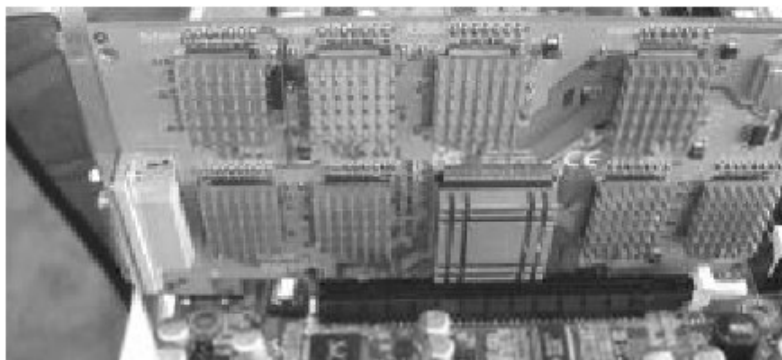


图 2: PCI E-1X 接口的采集卡插在 PCI-E16X 插槽上



图3: PCI E-1X接口的采集卡插在PCI-E 1X插槽上

2.5 主板跳线的设定说明

主板的所有跳线靠近直线或标有白色三角符处为第一脚，请务必不要接反，否则有可能对您的主机板或其他设备造成损坏。

2.5.1 清除 CMOS 跳线 (CLR_CMOS)

如果主机板因为 BIOS 设置错误而出现问题，此时可清除 CMOS 解决问题；方法是在断开电源状态下把 CMOS 跳线跳至 2-3 脚，使其短接 5-6 秒。请不要在开机时清除 CMOS，要不然可能会损坏您的主板。跳线设定如下：

CMOS 数据状态	CLR_CMOS
保持CMOS数据资料 (预设)	1  3
清除CMOS数据资料	1  3

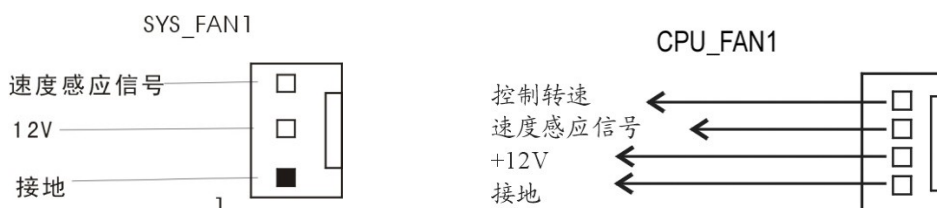
2.5.2 KB-PWR 跳线 (KB-PWR)

设置状态	KB-PWR 跳线
5V (预设)	跳至 1-2 脚
5VSB	跳至 2-3 脚

2.6 主机板接头说明

2.6.1 风扇电源接头 (CPU_FAN1/SYS_FAN1)

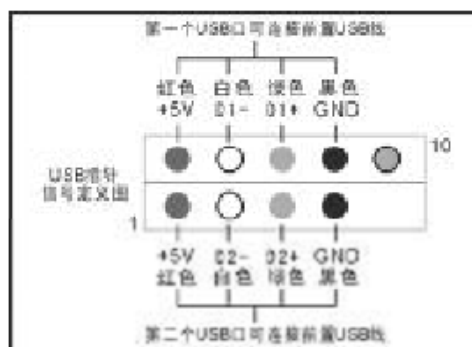
当将风扇连接到风扇连接头上时, 使用者必须将红色的线连接到+12V 的电源针上, 黑色的线连接到地线上。如果您想在 BIOS 或硬件监控程序中观察风扇的工作状态, 您必须使用支持能侦测转速功能的风扇。对于具有速度感应器的风扇, 风扇每一次转动都会产生 2 个脉冲波, 系统硬件监控将作统计逼供内产生一个风扇转动速度的报告,可在 CMOS 中显示出风扇的转速。



2.6.2 USB 扩展接头

AEMH61-631/AEMH61-632主板提供8个USB接口, 其中4个可以直接连接USB设备, F_USB1/F_USB2接头需要另外连接USB Cable, 提供给您另外4个USB端口。(小三角形处为第一脚, 请务必不要接错, 否则有可能对您的主板或设备造成损害)

⚡ 插针旁的“△”标识处为第一脚, 请务必不要接错, 否则有可能对您的设备或主板造成损害!



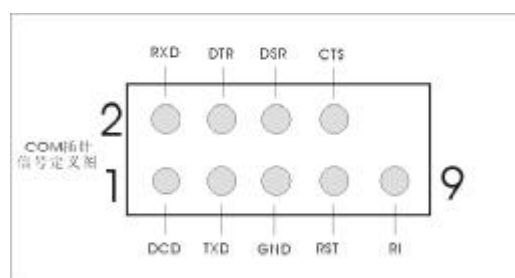
2.6.3 前置音效输出接口 (F_AUDIO)

主板提供了前置音效输出接口F_AUDIO，这组声卡插针供您连接到机箱前面板的声卡接头，这样您就可以很方便地经由主机到面板收听音乐和使用麦克风进行声音输入，您只要按照其插针功能（如下图所示）连接相对应的线即可。



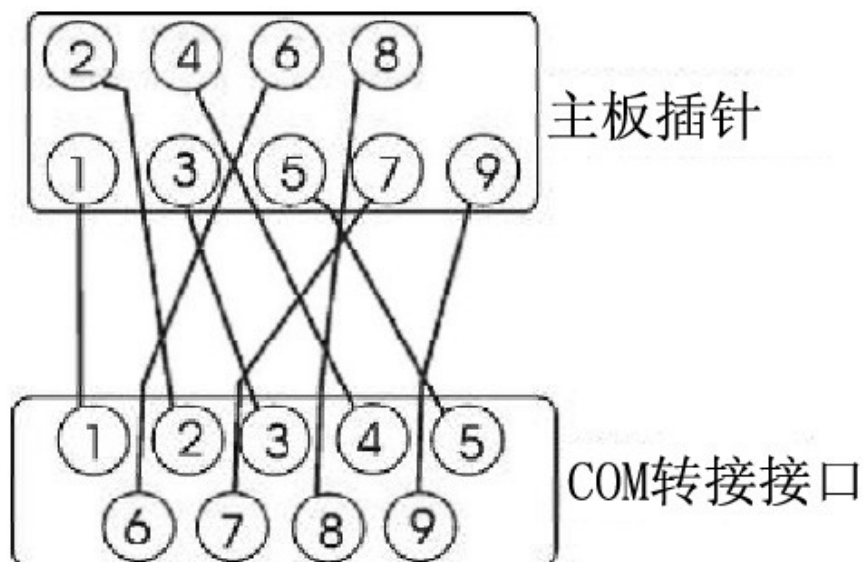
2.6.4 COM 插针

主机板提供2个COM插针，COM接头需要另外连接COM连接线。（白三角形标记处为第一脚，请务必不要接错，否则有可能对您的主板或设备造成损害）



2.6.5 COM 插针的接线方法

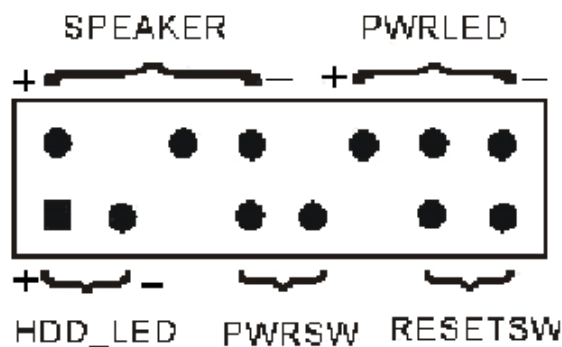
若要使用COM插针，必需通过转接线来实现，转接线的接线方法如下：



2.6.6 SATA 接口使用说明（针对 AEMH61-632）

SATA1-4是由南桥引出的接口，为了满足用户需接多个SATA设备的需要，我们特意增加了2个扩展芯片，该芯片引出的接口为SATA5-8及SATA9 Mini-PCIE。

2.6.7 系统信号/控制面板接口（F_PANEL）



- | | | | |
|------------|----------|------------|---------|
| a. SPEAKER | 喇叭连接头 | b. PWRLLED | 电源指示灯 |
| c. HD_LED | 硬盘指示灯连接头 | d. PWRSW | ATX电源开关 |
| e. RESETSW | 复位按钮 | | |

a. SPEAKER 喇叭连接头

电脑的喇叭连接头（也称蜂鸣器）共有四个脚位，只要把机箱上的喇叭接头接至此四脚位上即可使用。

b. PWRLER 电源指示灯

电源指示灯为三个脚位的连接头，用来指示电脑的工作状态，当电脑一旦上电时，指示灯常亮，反之，则不亮（注：有正负之分）。

c. HDD_LED 硬盘指示灯

这组两脚位排针连接到电脑机箱上的硬盘指示灯接头上，可由LED以显示硬盘工作的状态，如果硬盘一旦有读取动作，指示灯随即亮起（注：有正负之分）。

d. PWRSW ATX电源开关

POWER SW 是一个两针脚的接头，控制着ATX主电源的总开关，将这组排针连接到电脑机箱上控制电脑电源的开关上，当两个针脚短接即可开(关)机。

e. RESET SW 复位按钮

这组两脚位排针接到电脑机箱上的RESET开关，可让您不需要关掉电脑电源即可重新启动系统，尤其在系统挡机或死机时特别有用。

第三章 BIOS 简介

3.1 BIOS 设定

请注意由于BIOS的不断更新，可能我们说明的部分或许与现有板上BIOS有些不同，一切仅供参考，以实际为主。BIOS中一些未做过多说明的项目，属于非常用项目请保持缺省值，建议不要随意更改。

欲进入BIOS设定程序画面，请依下列步骤：

- a. 打开电源或重新启动系统，在自检画面可看到“PRESSDEL TO RUN SETUP”
- b. 按下DEL键后，即可进入BIOS设定程序。

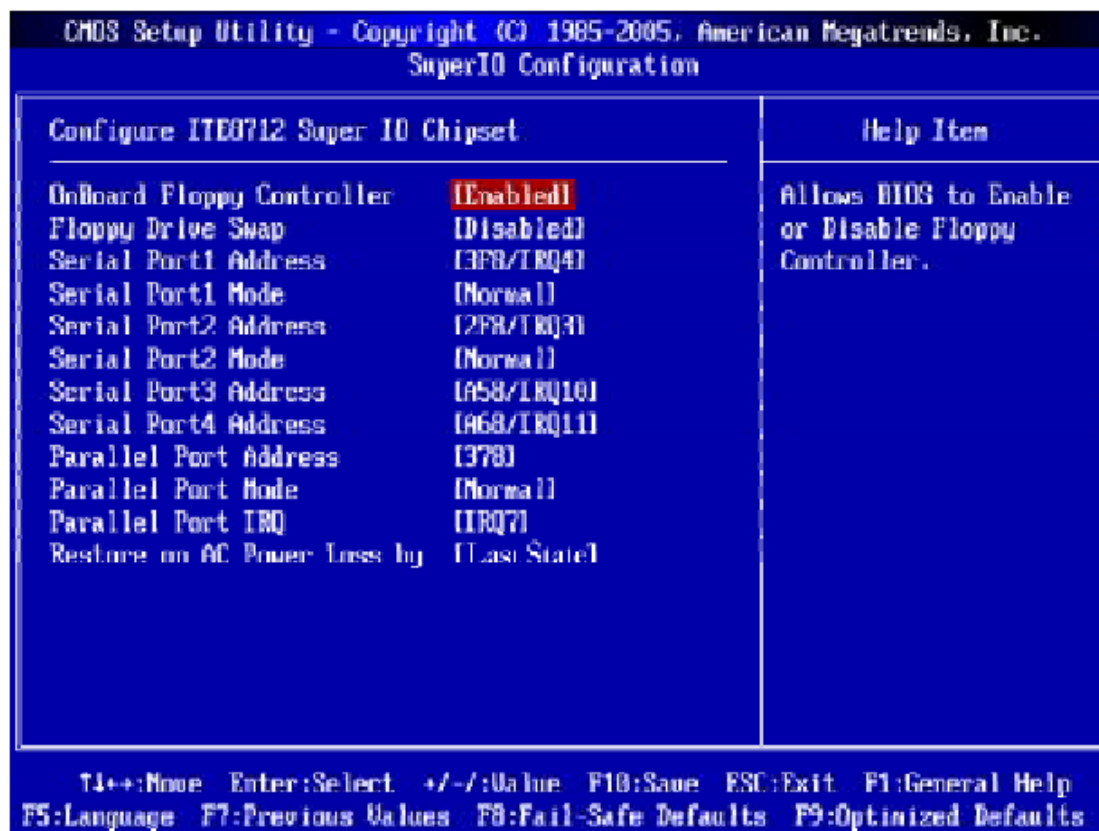
BIOS 功能说明	
按键	功能说明
<←> <→>	选择设置项目（左右移动）
<↑> <↓>	选择设置项目（上下移动）
<+> <->	改变设定状态或者变更键位之数值
<Tab>	改变设定状态
<ESC>	退出设置程序并不存储设置
<F1>	显示目前设定项目的相关辅助说明
<F7>	放弃程序的修改
<F8>	载入安全模式的默认值
<F9>	载入出厂预设优化值
<F10>	退出设置程序并存储设置

3.2 上电自动开机功能设置方法

虽然电力方面比较发达，不会像以前那样经常性的停电，但是偶尔发生突然断电的情况还是有可能的。一旦机器由于断电而关机，而机房又无人值守，监控录像会因此而中止，给安防带来隐患。为此，为了避免这一隐患，我公司特意为产品定制了断电后来电自动开机功能，此功能实现的方式需要特别的硬件电路设

计及BIOS软件来支持，具体BIOS设置方法如下：

开启主机后按DEL键进入CMOS置界面中。在主菜单中请您选择“Advanced \SUPERIO Configuration”，出现如下图，您可以根据需要设置不同的选项。



注：BIOS中三个选项功能说明，默认值为“Last State（之前状态）”

Power On（常开）：断电后，供电恢复就会自动开机；

Power Off（常关）：断电后，供电恢复不会自动开机；

Last State（之前状态）：断电后是否上电开机，决定于主机之前状态。当断电前主机是开机状态，供电恢复时主机会自动启动；当断电前主机是关机状态，供电恢复时主机不会自动开机。

第四章 看门狗软件使用说明及安装步骤

机器长时间一直工作在高温、干燥的机房中，受多方面因素影响，可能会偶尔发生死机的现象。一旦系统由于意外故障导致死机，而机房又是无人值守的，此时监控便会因机器死机而中止，这给带来很大的隐患。为此，我司特为用户研发了解决这一困扰的软件——市场上俗称“看门狗”，它的工作原理是通过配合专门设计的硬件电路可以实现系统死机后自动重启功能。

4.1 软件功能

系统状态监控，一旦系统死机，“看门狗”软件将发出复位信号，触发硬件电路自动复位，令系统重启并重新加载视频监控软件。这样机房即使无人值守机器又出现死机的情况下监控录像也不会中止，不留死角。

4.2 看门狗定义及工作原理

看门狗，又叫watchdog timer，是一个定时器电路，一般有一个输入（叫喂狗），一个输出到MCU的RST端，MCU正常工作的时候，每隔一端时间输出一个信号到喂狗端，给WDT清零。如果超过规定的时间不喂狗，（一般在程序跑飞时），WDT定时超过，就回给出一个复位信号到MCU，是MCU复位，防止MCU死机。看门狗的作用就是防止程序发生死循环，或者说程序跑飞。

工作原理：在系统运行以后也就启动了看门狗的计数器，看门狗就开始自动计数，如果到了一定的时间还不去清看门狗，那么看门狗计数器就会溢出从而引起看门狗中断，造成系统复位。所以在使用有看门狗的芯片时要注意清看门狗。

4.3 软件安装

- 1、 进入驱动光盘tools文件夹，打开“Watchdog”文件夹，双击“Watchdog.exe”。
- 2、 如下图所示：设置watchdog Timer计时时钟和Timer Reload Period喂狗周期后按开始按钮启动运行。



3、单击“停止”，watchdog功能会自动关闭。

注：

1. 该软件请运行在：Windows XP以上版本操作系统下；
2. 请在系统管理员的权限下运行该软件。

第五章 驱动程序的安装

该板支持Windows XP及以上系统，各系统软件不一，我们附带光盘里提供XP/WIN7系统的驱动。

需要安装的驱动程序有：芯片组驱动程、板载显卡驱动、板载声网卡驱动、AC97 声卡驱动、ME 管理驱动（建议按此顺序安装驱动程序）。

在光驱中放入随机的驱动光盘，让光盘自动运行，或点击 **Autorun.exe**。

点击 “**Install Software**”进入驱动的安装界面。

5.1 芯片组驱动程序的安装

点击 “**Install Chipset Driver**”，如不需要更改默认值，请按照提示操作，安装完成后重启计算机。

5.2 板载显卡驱动的安装

点击 “**Install Graphic Driver**”，如不需要更改默认值，请按照提示操作，安装完成后重启计算机。

5.3 板载声卡驱动的安装

点击 “**Install Audio Driver**”，如不需要更改默认值，请按照提示操作，直至安装完成。

5.4 板载网卡驱动的安装

点击 “**Install Ethernet Driver**”，如不需要更改默认值，请按照提示操作，直至安装完成。

5.5 Intel 管理引擎界面的安装

点击“Install Intel Management Engine Interface”，如不需要更改默认值，请按照提示操作，直至安装完成。

5.6 PCI 芯片控制器的安装

点击“Install PCI Chipset Controller”，如不需要更改默认值，请按照提示操作，直至安装完成。

Safety Instructions

1. Always read the Safety Instructions carefully.
2. Keep this manual for future reference.
3. Please keep the equipment away from humidity.
4. The openings on the chassis are for air convection hence protect the equipment from overheating. Do not cover the openings.
5. Make sure the voltage of the power supply is appropriate and adjust it to 110/220V before connect the equipment to the power source.
6. Place the power cord such a way that people can not step on. Do not place anything over the power cord.
7. Always unplug the power cord before inserting any add-on card or module.
8. All cautions and warnings in the manual should be noted.
9. Before connect to the power supply, make sure there are not screws and other metal objects left to avoid electrical short circuit that can destroy other parts.
10. Never pour any liquid into the opening, or else it would make serious damage or circuit paralysis.
11. If in the following situations, please find professionals:
 - a. Power line or the plug is damaged
 - b. Liquid into the machine
 - c. The equipment exposed to moisture
 - d. The equipment does not work properly and the user can not find guidance in this manual to solve the problem
 - e. The equipment has been dropped or damaged
 - f. Obvious signs of breakage damage have been found

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Chapter 1 Motherboard Specifications

In order to guarantee product quality and suit to market demand, motherboards undergo anti-aging, low voltage, various of temperature, humid environment repeated testing, and also have passed the compatibility testing with various Video Capture Card in the the market, they can meet the needs of industry with the advantages of cost-effective, stability, longevity, high-quality. The Guide introduces the installation steps of the motherboard.



As motherboard and BIOS software would be update constantly, relevant content of the manual may change with-out further notice, all the information are for reference purposes only.

1.1 Box Contents

1. AEMH61-631 or AEMH61-632 motherboard
2. SATA cables
3. COM port cables
4. DVD-ROM (Drivers and User's Manual)
5. IO Panel

1.2 Motherboard Features

With the development of science and technology, especially information technology leap, actively promoting security technology development, improve the security industry application level. Industrial motherboard monitor market experienced the analog era, hybrid era to today's digital monitor three period, it gradually to network, intelligent, practical, the direction of the development of the industry, from single project to video surveillance, burglar alarm, access control, to prevent peripheral integrated weak engineering.

Martet for a long time, has been stalled in 945 chip times, but it used 2nd generation DDR memory, LGA775 CPU these has not kept up with the development of PC market now, eventually leading to high prices, poor performance and so on, in order to make up deficiency, to meet the customer's different now need, so our motherboard series host board using Intel H61 mainstream chip combination of various grades of products, its main

characteristics are as follows:

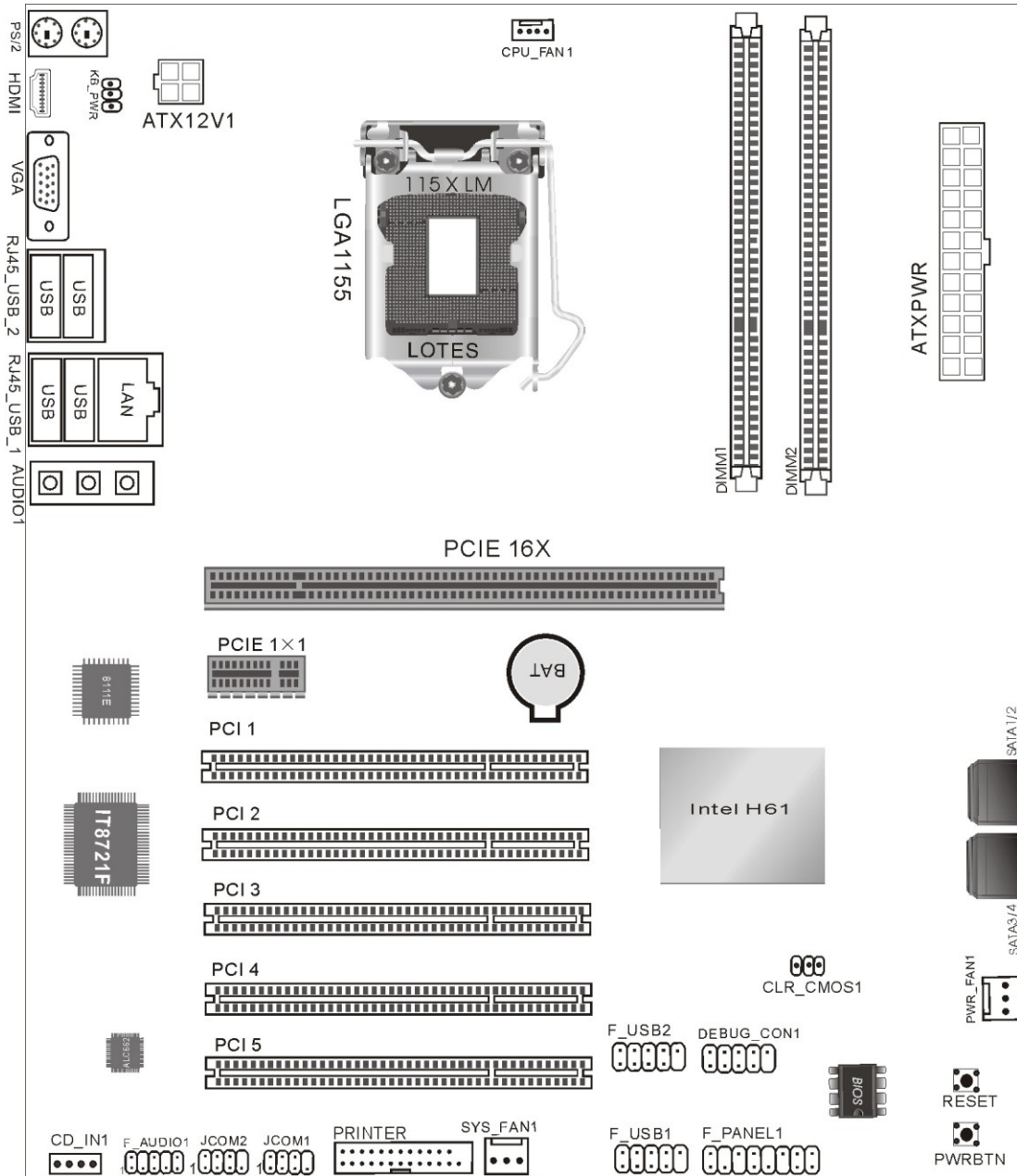
- ☆ **Professional:** All interfaces are made with EMI, static electricity, mine, wave protection, they are specialized for the MB industry.
- ☆ **Stability:** All use “FUJITSU” military-level solid capacitance; Products undergo rigorous (temperature:-20°C - 75 °C, Humidity:20% -95%HD) testing to ensure stable operation no matter at high temperature, dry, static electricity, cold, wet environment.
- ☆ **Compatibility:** The products are compatible with more than 90% video capture cards in the market, support 5 PCI up to 40 audio and video channel collection, 4-9 SATA up to 4 or 9 hard disks to satisfy users for long time uninterrupted data collection.
- ☆ **Playability:** Product support to boot, and earthquake the bell start-up, remote boot, failure to restart industries proprietary function. Users in the distance, no one on the operation process is very convenient.

1.3 Motherboard Introduction

AEMH61-631/AEMH61-632 is a generally useable for specific product, its use of INTEL H61 chipset to support 2 COM ports, AEMH61-631 maximum connections can be 4SATA, AEMH61-632 maximum external connections can be 9 SATA, dual display output available.

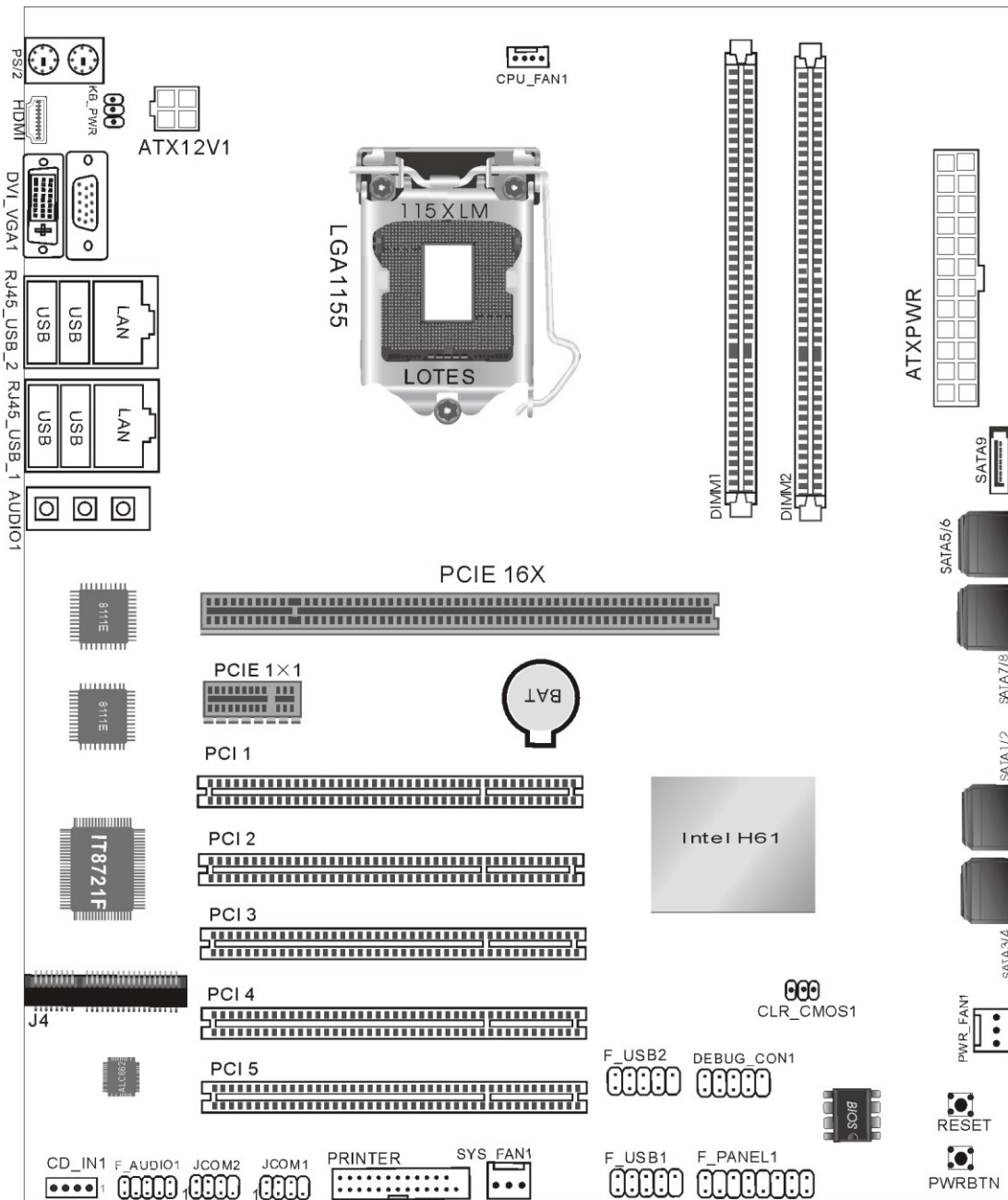
1.4 Motherboard Layout and Specification

1.4.1 AEMH61-631 Motherboard Layout



AEMH61-631 Layout

1.4.2 AEMH61-632 Motherboard Layout



AEMH61-632 Layout

1.4.3 Motherboard Specification

AEMH61-631&AEMH61-632 Motherboard Specifications:

CPU	<ul style="list-style-type: none"> - Supports LGA 1155, Intel® Core i7/i5/i3 and Pentium/Celeron Sand y & Ivy Bridge series processor
Chipsets	<ul style="list-style-type: none"> - South Bridge: Intel® H61
Memory	<ul style="list-style-type: none"> - Supports DDRIII 1066/1333 Memory - Up to 16 GB - 2 x DDR3 DIMM
Onboard Graphics	<ul style="list-style-type: none"> - VGA display depends on the CPU
Onboard Audio	<ul style="list-style-type: none"> - Integrated ALC 662 Audio Codec - Supports 2/4/5.1 Channel Audio-out
Onboard LAN	<ul style="list-style-type: none"> - Integrated Realtek 8111E Realtek8111E 10/100/1000M LAN adaptive chip, supports diskless system(AEMH61-631) - Integrated double Realtek 8111E Realtek8111E 10/100/1000M LAN adaptive chip, supports diskless system(AEMH61-632)
Storage Interface	<ul style="list-style-type: none"> - 4 SATA 300MB/s Interface(AEMH61-631) - 9 SATA 300MB/s Interface(AEMH61-632) - 1 Mini-PCIE MSATA Interface(only for AEMH61-632)
Expansion Slots	<ul style="list-style-type: none"> - 1 PCI Express 16X - 1 PCI Express 1X - 5 PCI
USB	<ul style="list-style-type: none"> - 8 x USB 2.0 ports(4 Rear Panel board, 4 Extensions)
Internal I/O Connectors	<ul style="list-style-type: none"> - 1 24PIN Main power connector - 1 4PIN 12V Power Connector - 4 SATA 300MB/s connectors(AEMH61-631) - 9 SATA 300MB/s connectors(AEMH61-632) - 1 CPU fan header,1 system fan Jumper,1 pwr fan Jumper - 1 Mini-PCIE connectors (supports MSATA, only for AEMH61-632) - 1 Front panel plug pin

Chapter 1 Motherboard Specifications

	<ul style="list-style-type: none">- 1 Front panel Audio plug pin- 2 USB 2.0 plug pin- 1 JCOM1 plug pin- 1 JCOM2 plug pin- 1 Clearing CMOS plug pin- 1 CD_IN plug pin- 2 Shortcut button- 1 KB_PWR Jumper- 1 DEBUG_CON plug pin
Back Panel Connectors	<ul style="list-style-type: none">- 1 PS/2 keyboard Interface- 1 PS/2 mouse Interface- 1 DVI Interface(only for AEMH61-632)- 1 VGA Interface- 4 USB Interface- 1 RJ45 Interface(AEMH61-631)- 2 RJ45 Interface(AEMH61-632)- 1 HDMI Interface- 3 AUDIO Interface
I/O Controller	<ul style="list-style-type: none">- IT8721F
H/W Monitoring	<ul style="list-style-type: none">- CPU/System temperature detection- CPU/System/Power fan speed detection- System voltage detection(optional)
BIOS	<ul style="list-style-type: none">- 1 x 32Mbit flash / Bilingual BIOS
Form Factor	<ul style="list-style-type: none">- ATX 210mm x 305mm

Chapter 2 Hardware Installation

2.1 Install CPU

Install Intel 1155-pin CPU according to the following steps.

- ⚡ Before you insert the CPU into the 1155-pin socket, please check whether the CPU surface is Dirty or some skew pin on the socket. If found in above situation, do not force the CPU into the socket, otherwise CPU or the socket will be seriously damaged.

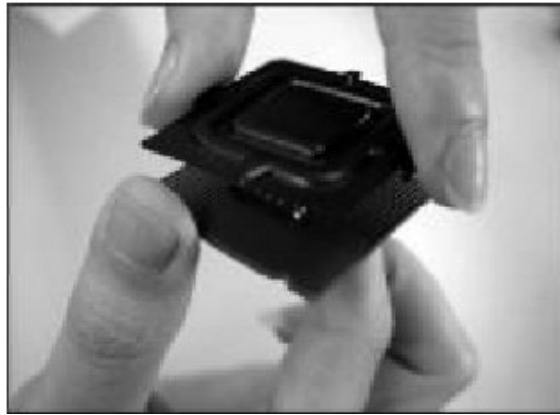
- Step1** Pulling up the lever by the side of the CPU socket, turn it about 135 degrees around to the complete open position. And then turn the cover about 100 degrees around to the complete open position.



- Step2** Remove the protective cover: Hold the metal frame edge by one hand, uncover the protective cover from the socket by the other hand and press the center of the cover to remove it.



Step3 Unload CPU protective cover, there are two specially designed convex location on the Socket base and two concave location on the CPU, fit them together so that you can insert the CPU into the socket. Please do that correctly to avoid CPU-pin damage.



Step4 After insert the CPU, cover the protective cover. Replace the lever to fasten the cover, fix the lever to complete the CPU installation.



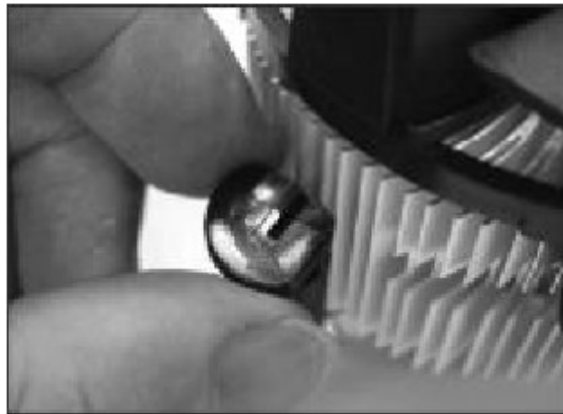
2.2 Install CPU fan

TO keep the CPU work normally, you must chose a good quality CPU cooler. Here we take Intel's original fan as an example to illustrate the CPU fan installation.

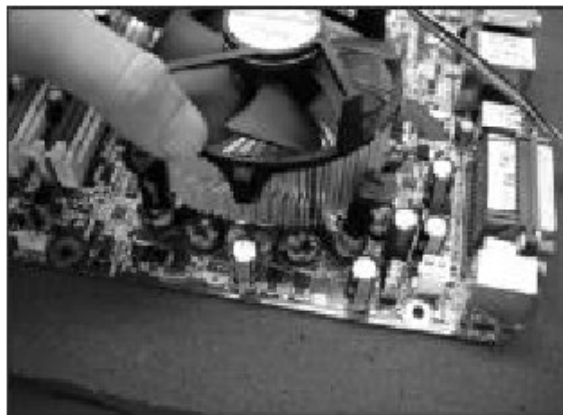
Step1 Before you install the fan, check whether the bottom of the cooler was coated with thermal grease (Intel's original fans often attached with thermal interface material TIM), if not, coat the CPU surface with some thermal grease.



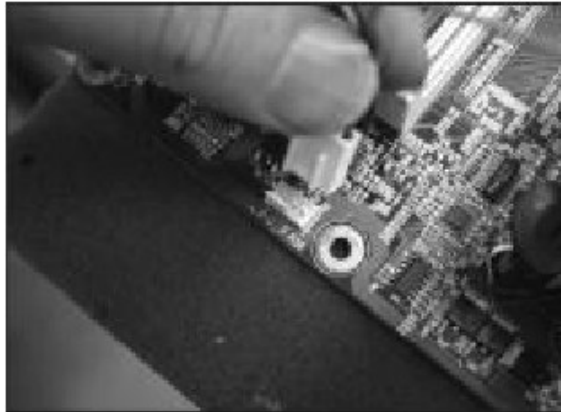
Step2 Remove the power cord of the fan, point four gaps of the fasteners to the inner part.



Step3 Make sure put the fan cables on the side of the power plug, place the cooler upon the socket LGA1155, align the fasteners and the four holes on the motherboard, clasp them.



Step4 Plug the fan power cord to the CPU fan header (CPU_FAN) on the motherboard.



2.3 Install Memory

Motherboard supports dual-channel memory, the capacity can be expanded from minimum 2GB to maximum 8GB. Installation steps are as follows:

- a. Unclose the fasteners at the both sides of the memory slot.
- b. Insert the memory vertically into the slot, pay attention to fitting the notch to the raised point.
- c. If the installation is correct, the white fasteners at the both sides of the memory slot would close automatically.

2.4 Install Video Capture Card

There are two kinds of Video capture cards: PCI and PCI E-1X interface cards. Please insert the card into the right slot vertically, otherwise it might damage the card or motherboard Slots. Note: PCI interface cards can only be received in the PCI slot which can not be inserted in the PCI E slot, so is the PCI E-1X interface card, these two kinds of cards can not be used simultaneously.

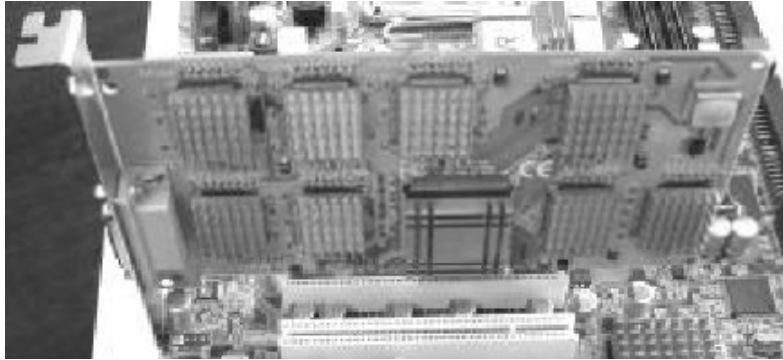


figure 1: PCI interface card insert into the PCI slot

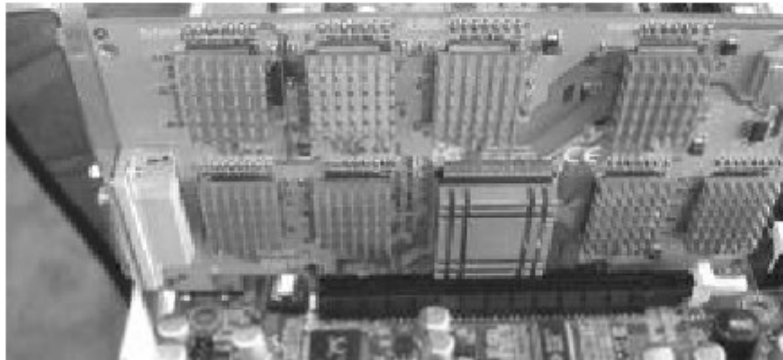


figure 2: PCI E-1X interface card insert into the PCI-E 16X slot



figure 3: PCI E-1X interface card insert into the PCI-E 1X slot



2.5 Motherboard Jumper

All the main board jump line close to the line or white triangle place is marked with operators first foot, please don't pick up against, or is likely to your motherboard or other damage to the equipment.

2.5.1 Clear CMOS Jumper (CLR_CMOS)

If there are problems with the motherboard because of BIOS setting error, you can clear CMOS by adjusting the CMOS jump line to 2-3 feet under power

-off state, that way making it hold for 5-6 seconds, that way making it hold for 5-6 seconds. Be sure not to boot to clear CMOS, otherwise it might damage your motherboard. Jumpers set below :

CMOS Definition	CLR_CMOS
Normal	
Clear CMOS	

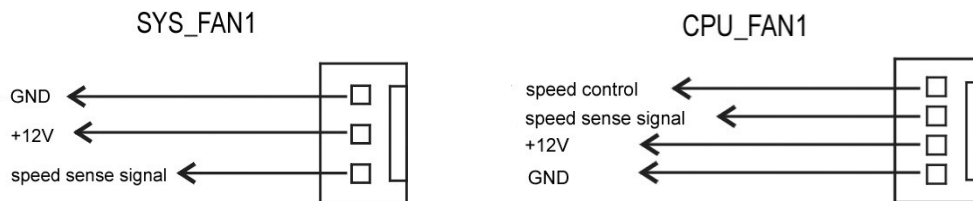
2.5.2 KB-PWR Jump Line (KB-PWR)

Set Status	KB-PWR Jump Line
5V (default)	jump to 1-2 Pin
5VSB	jump to 2-3 Pin

2.6 Motherboards Interfaces

2.6.1 Fan Power Connectors (CPU_FAN1/SYS_FAN1)

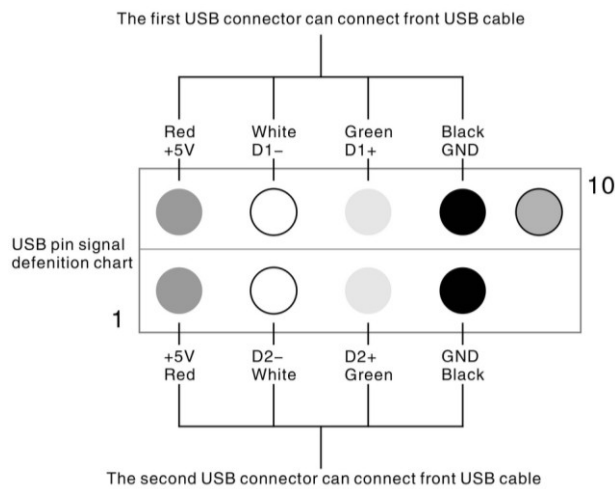
When Plug the fan power cord to the fan header, users must connect the red line to the +12V power-pin and connect the black line to ground. If you want to observe the fan work state in BIOS or hardware monitor procedures, you need use fans which have speed detection function. The fans with speed sensor produce two pulse each rotation, then the system hardware monitor make a fan speed statistical report which can be displayed in CMOS.



2.6.2 USB Header (F_USB)

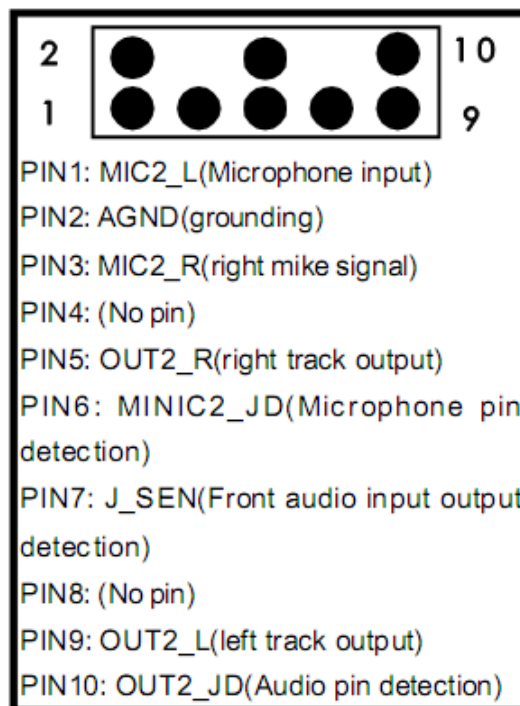
AEMH61-631/AEMH61-632 motherboards provide 8 USB ports, 4 of which can be directly connected to USB devices, The F_USB1/F_USB2 need USB cables and can provide you another 4 USB ports. (Note: The first pin is near by the thick white line, be sure to connect them correctly, or else may damage your motherboard.)

⚡ The first pin is next to the logo “△” on the motherboard, be sure not to mistake, or may damage your devices or motherboard!



2.6.3 Front Panel Audio Header (F_AUDIO)

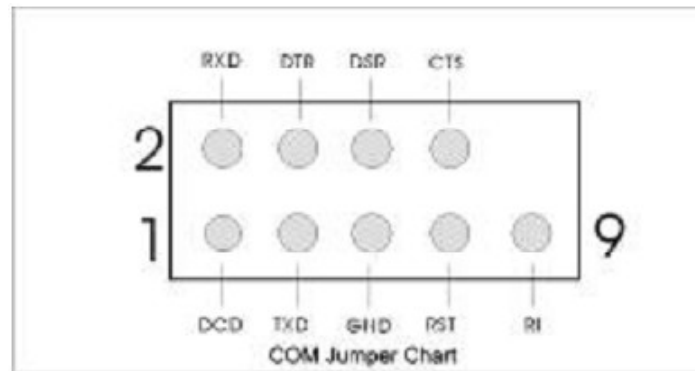
You may connect your chassis front panel audio module to this header. It is convenient for you to listen to music and use microphone for voice input. You must connect them correctly (the following chart shows).



2.6.4 COM Header (COM2)

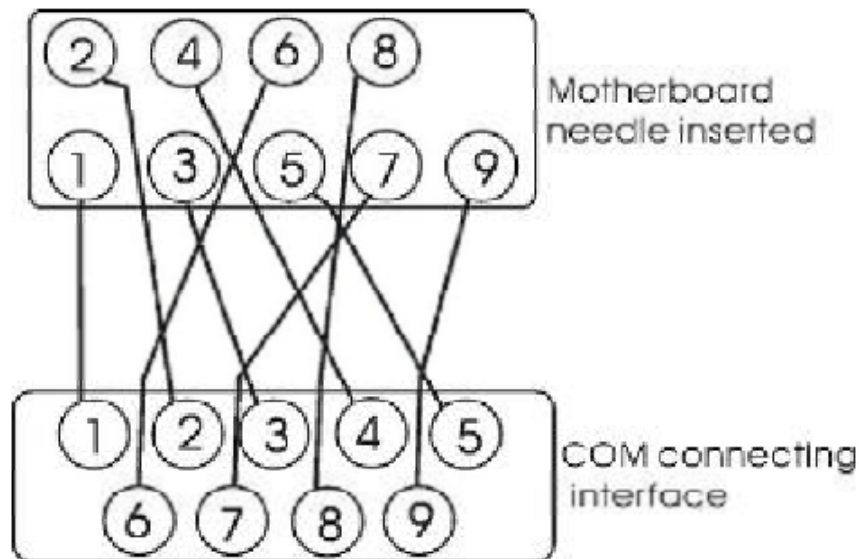
COM2 need USB cable for connecting, you can purchase this cable from the motherboard dealer or the electronic market. (Note: The first pin is next to the logo “△” on the motherboard, be sure not to mistake, or may damage your

devices or motherboard!)



2.6.5 COM Header Connection

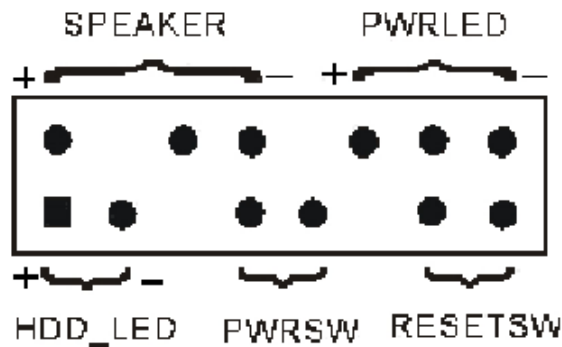
You should use the cable to connect the COM header, the cable wiring are as follows:



2.6.6 SATA Using Instructions(only for AEMH61-632)

SATA1-4 are provided by the South Bridge, in order to meet the users' need for more SATA devices, we add 2 chipset for expansion, the chipset provide the SATA5-8 and SATA 9 MINI-PCIE.

2.6.7 Front Panel Header (F_PANEL)



- a. SPEAKER Speaker Connector
- b. PWRLED Power Active LED
- c. HD_LED Hard Disk LED
- d. PWRSW ATX Power Switch
- e. RESETSW Reset Switch

a. **SPEAKER** Speaker Connector

Speaker Connector (also called buzzer) is a four-pins connector, connect the speaker to the four pins.

b. **PWRLED** Power Active LED

Power Active LED is a three-pin connector, it used to indicate the computer working state, once the computer connect to the power, the PWRLED keep shining (Note: There are anode and cathode).

c. **HD-LED** Hard Disk Active LED

This group of two-pin connected to the computer Hard Disk Active LED, the LED can show the hard disk working state, once the hard disk reading, the LED emitting (Note: There are anode and cathode).

d. **PWRSW** ATX Power Switch

POWER SW is a two-pin connector, it controls the ATX main power, connect this group pins to the power switch of the computer, make the two pins short circuited can open (close) the computer.

e. **RESETSW** Reset Switch

This group of two-feet pins are connected to the reset switch on the computer chassis hence you do not need to switch off the computer power to restart the system, which works perfectly especially in case of crashes or other computer disorders.

Chapter 3 BIOS Introduction

3.1 BIOS Setup

Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions may not exactly match what you see on your screen and they are for reference purpose only. Some of the items are not in common used, we suggest not to change them at will and keep the default value.

Enter steps:

- a. Open or restart the computer, you may see “PRESS DEL TO RUN SETUP” in the self-checking screen.
- b. Press the “DEL” key, then enter the BIOS setup screen.

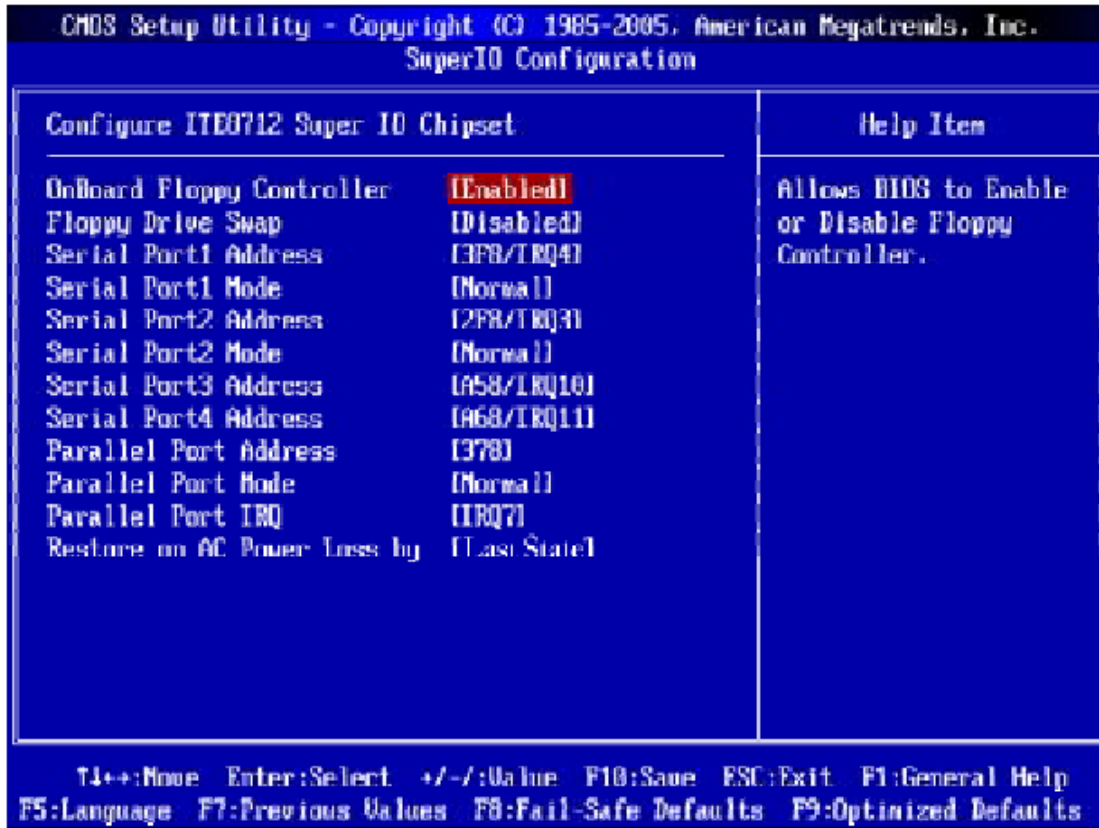
BIOS Setup Program Function Keys	
Function Keys	Function Explanation
↑↓ ← →	Move the selection bar to select an item
+ -	To change option for the select items
<Tab>	To change option
<ESC>	Main Menu: Exit without saving
<F1>	Show descriptions of the function keys
<F7>	Load the Optimized BIOS default settings for the current submenus
<F8>	Load the Fail-Safe BIOS default settings for the current submenus
<F9>	Load the Optimal BIOS default settings for the current submenus
<F10>	Save all the changes and exit the BIOS Setup program

3.2 Power On Automatic Restore Setting

Sometimes it comes to power off suddenly, Once the machine shuts down because of the power off and there is no body on duty, the video surveillance will be suspended which bring to security dangers. Therefor, our company design power on automatic start-up function for the products. This function

needs special hardware circuit design and BIOS software support. BIOS settings are as follows:

Turn on the host and then press DEL key to get into CMOS settings interface. On the main menu, select the "Advanced\SuperIO Configuration" item, you'll see the figure below, Config them in need:



Note: Function explanation of the three options in BIOS (Default value is "Last State"):

(When the host power supply has been shut down suddenly)

Power On: Start-up automatically with power supply restoration

Power Off: Turn off the automatic start-up function.

Last state: Whether start-up automatically depends on the last state of the host. If it was working, it will start-up automatically with power supply restoration, otherwise, it'll not.

Chapter 4 Watchdog software using instruction and installing steps

Machine may sometimes crash, caused by some reasons, as it is always working in the hot and dry computer room. Once the system becomes out of work accidentally, and there is nobody on duty in the pc room, the monitor will stop due to the computer crash, it will bring much trouble to the security. So, our company has developed this software, named watchdog, in order to solve this problem for users. The theory is to restore the restart function after the dead of system, through working with the hardware circuits designed specially on motherboards.

4.1 Software Function

Under the inspection of system, once the system out of work, the watchdog software will send out the recover signal to stimulate all the hardware circuit to work well automatically, then computer will open again and load the video inspection software. Therefore, the monitor is still working even when nobody in the pc room and the machine goes dead, leaving no dead angle for the security.

4.2 The definition and working theory of Watchdog

A clock circuit that keeps counting from a set number down to zero. If the event it is monitoring occurs before it reaches zero, it resets to the starting number and starts counting down again. If the timer reaches zero, it performs some action; for example, a diagnostic operation such as rebooting the computer or sending an error message.

Work theory: the counter of the watchdog starts when the system is operating, and it begins to count in the meantime, if you don't check the watchdog in a period, the counter of the watchdog will be full and even overflow, which can stop the watchdog working and make the system reset. So, please take care the watching dog when you use the chip.

4.3 Software installation

Chapter 4 Watchdog software using instruction and installing steps

- 1、 Please open the disk, and enter into the “TOOLS\Watchdog”, click twice “Watchdog.exe” to start running.
- 2、 Set “Watchdog Timer” and “Timer Reload Period”, then click “Start” to run the watchdog.
- 3、 Click “Stop”, watchdog will closed.

Note:

1. This software is operated in above Windows XP operating system.
2. Please run this software in the authority of the system administrator, thanks.

Chapter 5 Drivers Installation

The motherboard support WINXP and above systems, they have different software systems, we provide XP/WIN7 system drivers in DVD-ROM.

The drivers must be Installed: the chipset driver, onboard VGA driver, onboard Lan driver, onboard audio codec driver, Management Engine drivers (support installed driver step by step) .

Please open the DVD-ROM and input the drivers DVD in and autorun the DVD; or open the DVD and click “Autorun.exe”.

Click “Install Software” enter the installation interface.

5.1 Install Chipset Driver

Click “Install Chipset Driver”; except need to change, please use the default set, and operate with the prompt; After finish the installation restart the computer, then driver will be loaded automatically.

5.2 Install Onboard VGA Driver

Click “Install Graphic Driver”; except need to change, please use the default set, and operate with the prompt; After finish the installation restart the computer, then driver will be loaded automatically.

5.3 Install Audio Codec Driver

Click “Install Audio Driver”; except need to change, please use the default set, and operate with the prompt; After that you can finish the installation.

5.4 Install LAN Driver

Click “Install Ethernet Driver”; except need to change, please use the default set, and operate with the prompt; After that you can finish the installation.

5.5 Install Intel Management Engine Interface

Click “Install Intel Management Engine Interface”; except need to change, please use the default set, and operate with the prompt; After that you can finish the installation.

5.6 Install PCI Chipset Controller

Click “Install PCI Chipset Controller”; except need to change, please use the default set, and operate with the prompt; After that you can finish the installation.