AEC-6510

Fanless Embedded Controller

AMD® Geode LX 800 500MHz Processor

IP-65 Certified

AEC-6510 Manual 2nd Ed.
Oct. 2008

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Packing List

Before you begin operating your PC, please make sure that the following materials are enclosed:

- 1 AEC-6510 Embedded Controller
- 1 Phoenix Power Connector
- 2 Wallmount Brackets
- 1 Screw Package
- 1 CD-ROM for manual (in PDF format) and drivers

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

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 firm 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. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. 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 user's manual.

e. The equipment has been dropped and damaged.

f. The equipment has obvious signs of breakage.

15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20°C (-4°F) OR ABOVE 65°C (149°F). IT MAY DAMAGE THE EQUIPMENT.

FCC

This device complies with Part 15 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.

Caution:
There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Below Table for China RoHS Requirements
产品中有毒有害物质或元素名称及含量

AAEON Boxer/ Industrial System

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及其电子组件	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○
外壳	×	○	○	○	○	○
中央处理器与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
电源	×	○	○	○	○	○

O：表示该有毒有害物质在该部件所有均质材料中的含量均在 **SJ/T 11363-2006** 标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 **SJ/T 11363-2006** 标准规定的限量要求。

备注：
一、此产品所标示之环保使用期限，系指在一般正常使用状况下。
二、上述部件物质中央处理器、内存、硬盘、电源为选购品。

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Chapter

1

General Information

1.1 Introduction

Due to the growing popularity from the IPC market, the newest Boxer series AEC-6510 has been introduced by AAEON. AEC-6510 utilizes an AMD Geode processor without a fan.

New Innovation for Entertainment Multimedia Domain

In this era of information explosion, the advertising of consumer products will not be confined to the family television, but will also spread to high-traffic public areas, like department stores, the bus, transportation station, the supermarket etc. The advertising marketing industry will resort to every conceivable means to transmit product information to consumers. System integrators will need a multifunction device to satisfy commercial needs for such public advertising.

Stable Design for Rugged Environment

The AEC-6510 is designed for rugged environments due to the following reasons; first, it can withstand tough vibration testing up to 5g rms. With the anti-vibration hard drive device option, the AEC-6510 can be used in high vibration environments. In addition, the AEC-6510 offers low power consumption system that while operating in ambient temperatures ranging from -20° to 70°C. The MTBF(Mean Time Before Failure) rating states that the AEC-6510 can operate up to 70,000 hours at 35°C ambient temperature,

which indicates its careful and long-life design.

The AEC-6510 is a standalone high performance controller designed for long-life operation and with high reliability. It can replace traditional methods and become the mainstream controller for the multimedia entertainment market.

1.2 Features

- Fanless Design with AMD Geode LX 800 500MHz Processor
- Easy to install with ready to use connector
- Wide temperature operating design
- DC 9~30V input with Phoenix connector and optional external AC input power adapter
- Wallmount mounting design suit for industrial application
- Windows XP Pro, Windows XP Embedded and Linux Fedora are ready for applications

Note:

When you turn off your computer, it would not show "**It is now safe to turn off your computer.**" You have to see the LED light. If the LED light is off, it means that it is safe to turn off the computer.

1.3 Specifications

System

- CPU: AMD Geode LX 800 500MHz Processor
- Memory: DDR333/400 SODIMM x 1, Max. 512MB
- VGA: D-sub 15 VGA Connector
- Keyboard/Mouse: PS/2 Keyboard & Mouse
- Ethernet: 10/100Base-TX Ethernet RJ-45 connector
- Solid Storage Disk: Internal Type II CompactFlash slot x 1
- Serial port: RS-232 x 1(COM1), RS-232/422/485 x 1 (COM2)
- USB: USB2.0 x 1
- Watchdog Timer: Generates a time-out system reset
- Power Supply: DC Input: 9V DC~30V DC
AC Input: External power adapter (Optional)

Mechanical and Environmental

- Construction: Aluminum Alloy Chassis
- Color: Black
- Mounting: Wallmount
- Dimension: 10.83”(W) x 7.82”(H) x 2.44”(D) (274.9 mm x 198.5 mm x 62 mm)

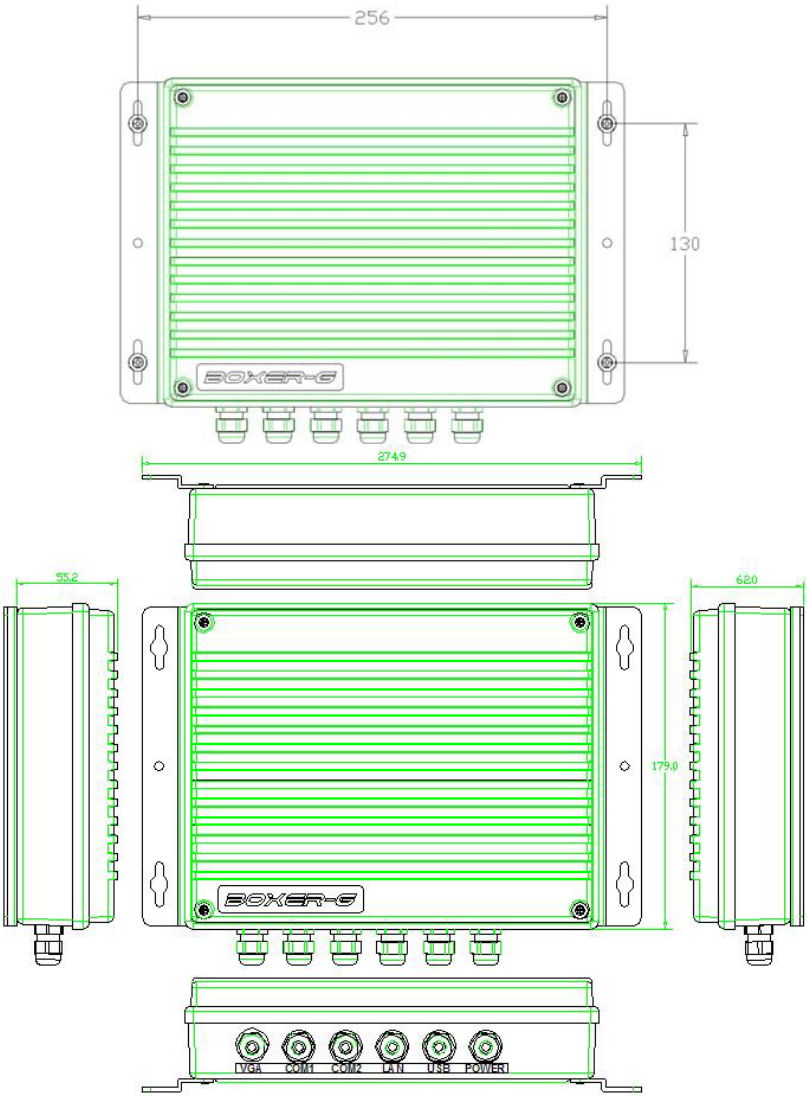
- Net weight 5.06 lb (2.3 kg)
- Gross weight 7.26 lb (3.3 kg)
- Operating Temperature -4°F ~ 158°F (-20°C ~ 70°C)
- Operating Humidity 5 ~ 90% @ 40°C, non-condensing
- Vibration 5g rms/ 5~500Hz/ random operation -CFD
- Shock 50g peak acceleration (11msec. duration) -CFD
- EMC CE/FCC Class A

Note:
The CompactFlash & RAM have to fit into the temperature requirement: -20°C to 70°C.

Chapter 2

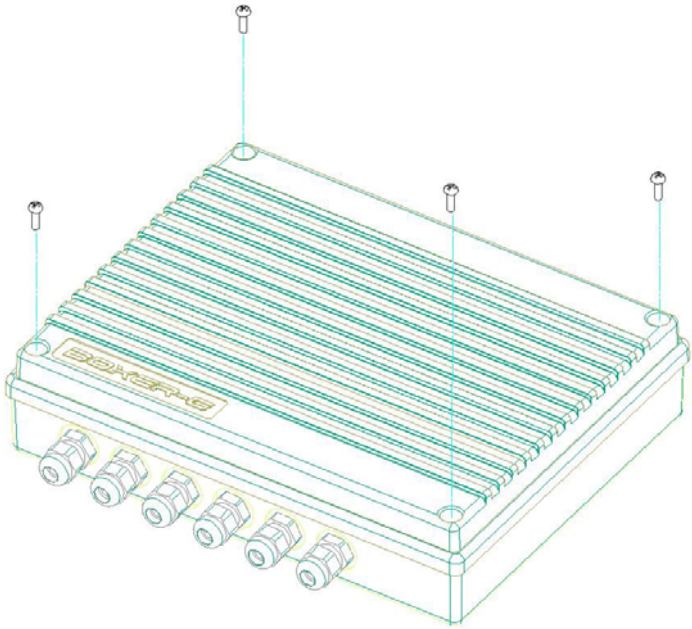
Hardware Installation

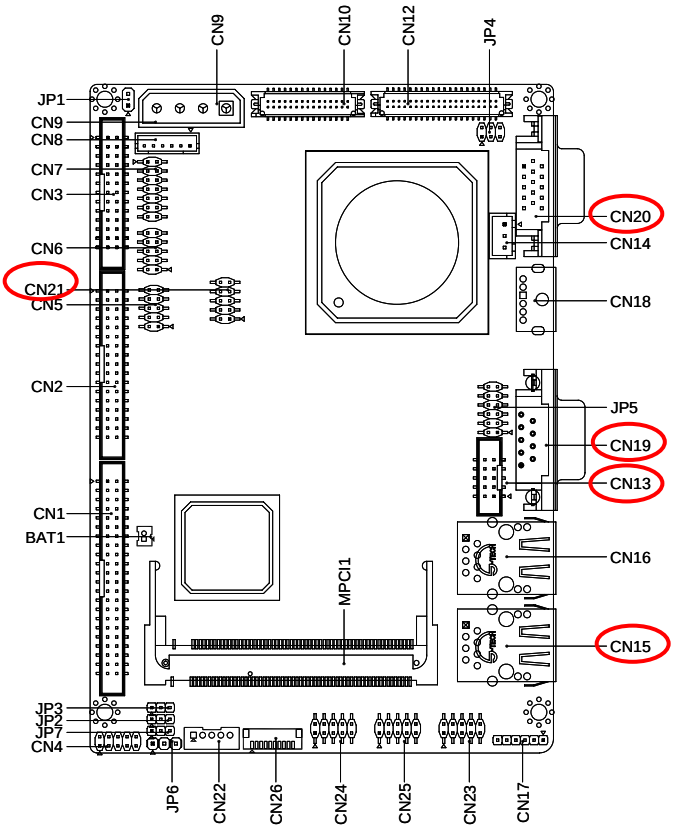
2.1 Dimension and I/O



2.2 Installing Cables

Before installing various cables, please take off the lid from the bottom of the chassis by loosening the screws.

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CN10
CN12
JP4
JP1
CN9
CN8
CN7
CN3
CN6
CN21
CN5
CN2
CN1
BAT1
JP3
JP2
JP7
CN4
JP6
CN22
CN26
CN24
CN25
CN23
CN17
MPCI1
CN20
CN14
CN18
JP5
CN19
CN13
CN16
CN15

COM2 (CN13)

RS-232 Mode

Pin	Signal	Pin	Signal
1	DCDB	2	RXB
3	TXB	4	DTRB
5	Ground	6	DSRB
7	RTSB	8	CTSB
9	RIB (+5V/ +12V)	10	N.C.

RS-422 Mode

Pin	Signal	Pin	Signal
1	TXD-	2	RXD+
3	TXD+	4	RXD-
5	Ground	6	N.C.
7	N.C.	8	N.C.
9	N.C.	10	N.C.

RS-485 Mode

Pin	Signal	Pin	Signal
1	TXD-	2	N.C.
3	TXD+	4	N.C.
5	Ground	6	N.C.
7	N.C.	8	N.C.
9	N.C.	10	N.C.

LAN (CN15)

Pin	Signal	Pin	Signal
1	RXD-	2	RXD+
3	RCT	4	N.C.
5	N.C.	6	TCT
7	TXD-	8	TXD+
9	ACT_LED	10	LINK_LED

11	+3.3 Volt.	12	SPD_LED
13	Ground	14	Ground

COM1 (CN19)

Pin	Signal	Pin	Signal
1	DCDA	2	RXA
3	TXA	4	DTRA
5	Ground	6	DSRA
7	RTSA	8	CTSA
9	RIA (+5V/ +12V)	10	N.C.

VGA (CN20)

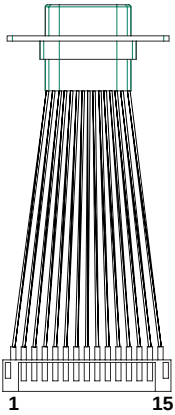
Pin	Signal	Pin	Signal
1	RED	9	+5 Volt.
2	GREEN	10	Ground
3	BLUE	11	N.C.
4	N.C.	12	DDCSDA
5	Ground	13	HSYNC
6	Ground	14	VSYNC
7	Ground	15	DDCSCL
8	Ground		

USB (CN21)

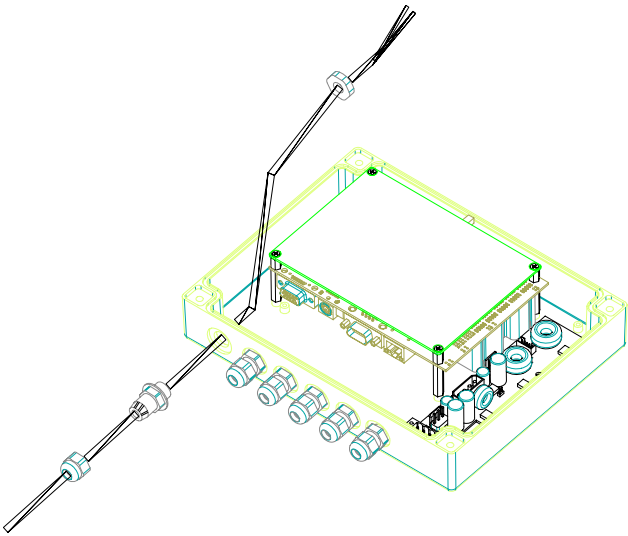
Pin	Signal	Pin	Signal
1	VDD	2	Ground
3	D2-	4	Ground
5	D2+	6	D3+
7	Ground	8	D3-
9	Ground	10	VDD

2.3 Installing VGA Cable

Step 1: Take the VGA Cable and twist the cap of port onto AEC-6510.

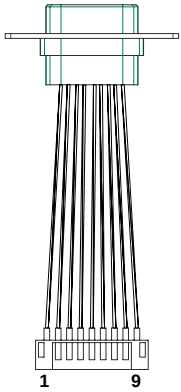


Step 2: Take the cable to pierce the aperture and then lock with corkscrews.

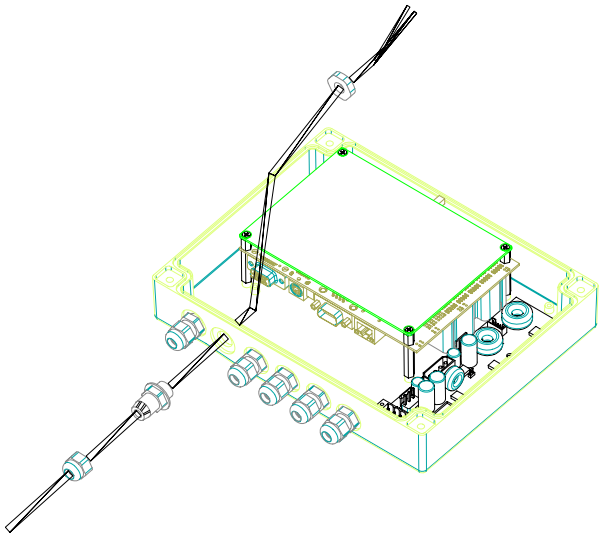


2.4 Installing COM1 Cable

Step 1: Take the COM1 Cable and twist the cap of port onto AEC-6510.

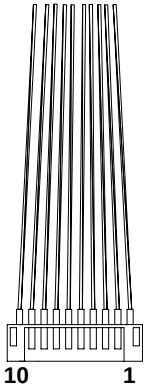


Step 2: Take the cable to pierce the COM1 aperture and then lock with corkscrews.

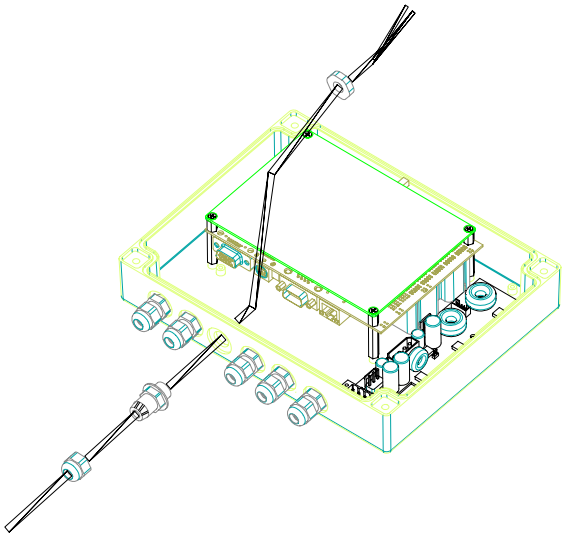


2.5 Installing COM2 Cable

Step 1: Take the COM2 Cable and twist the cap of port onto AEC-6510.

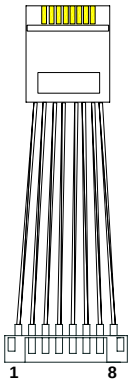


Step 2: Take the cable to pierce the COM2 aperture and then lock with corkscrews.

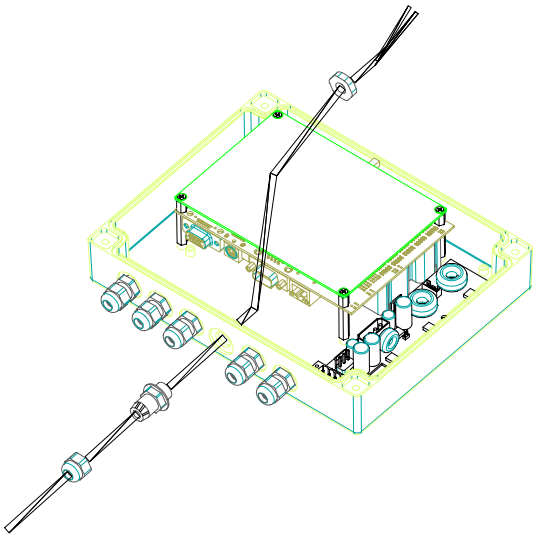


2.6 Installing LAN Cable

Step 1: Take the LAN Cable and twist the cap of port onto AEC-6510.



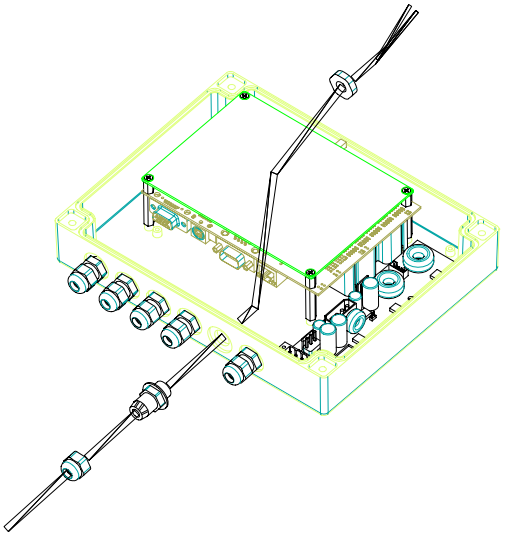
Step 2: Take the cable to pierce the LAN aperture and then lock with corkscrews.



2.7 Installing USB Cable

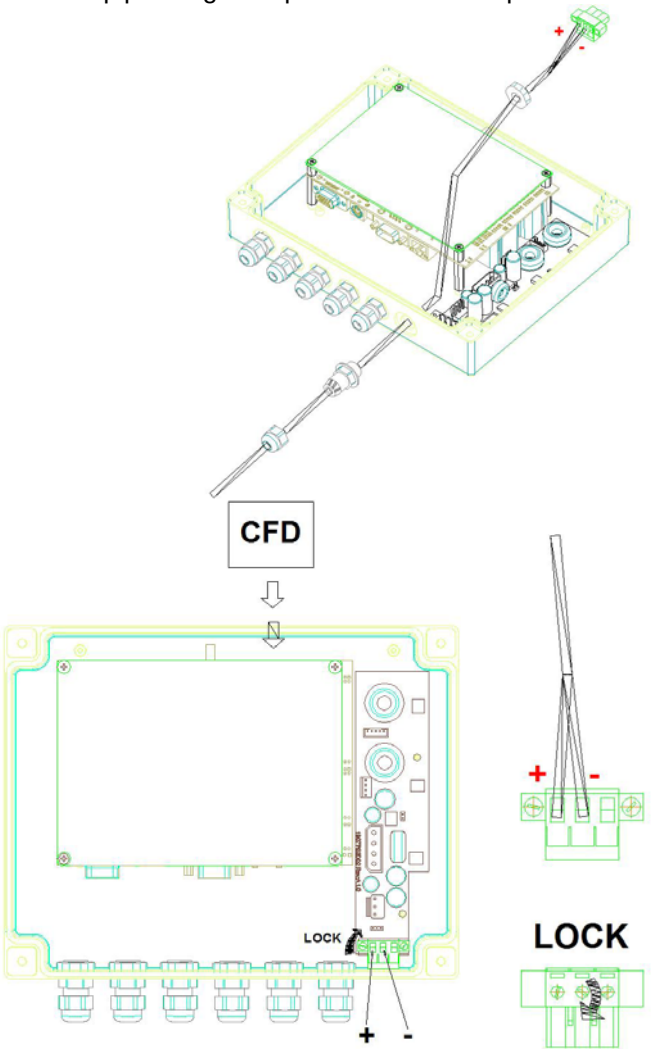
Step 1: Take the USB Cable and twist the cap of port onto AEC-6510.

Step 2: Take the cable to pierce the USB aperture and then lock with corkscrews.

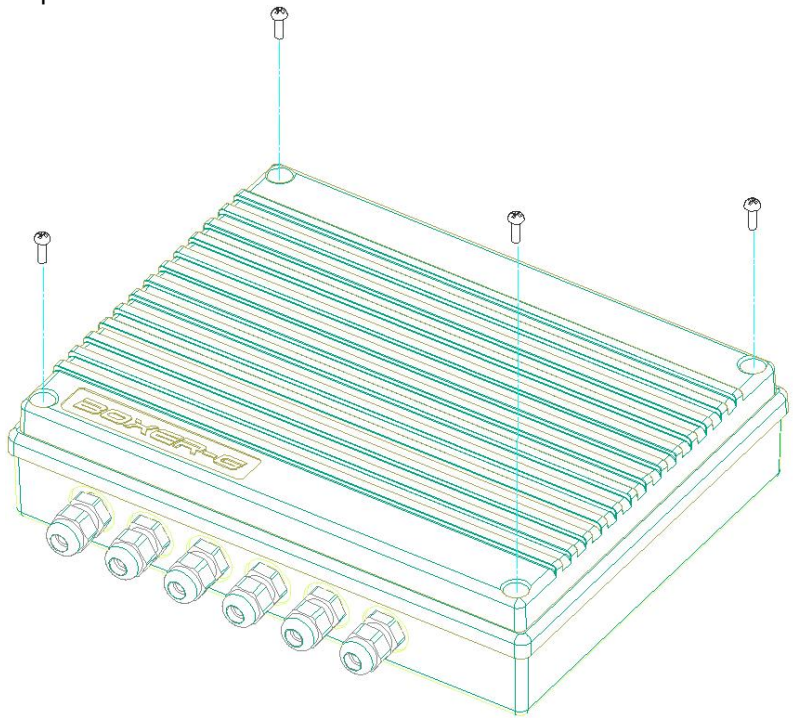


2.8 Installing Power Cable

Step 1: Take the Power cable to press and lock into power pipefitting then pierce the Power aperture and fixed.

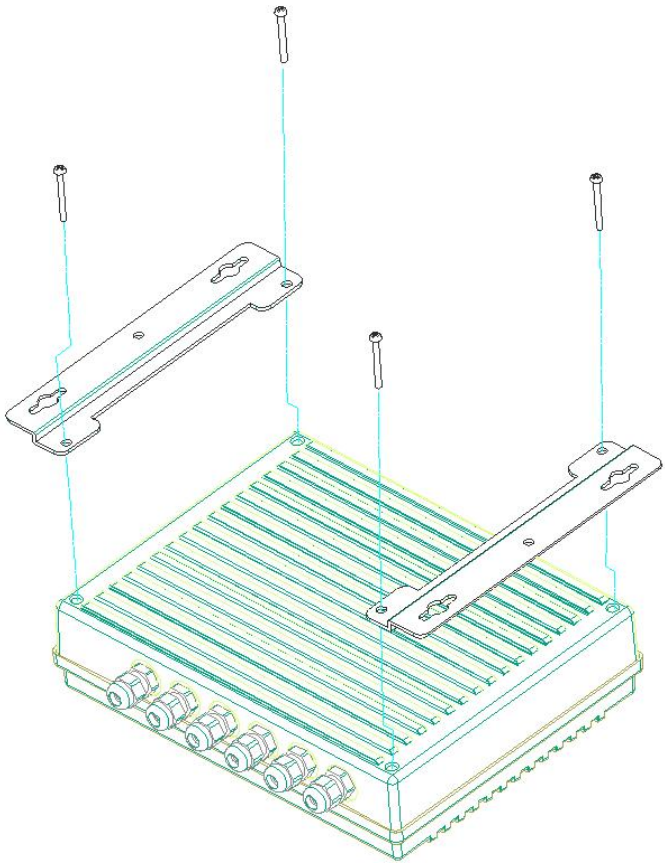


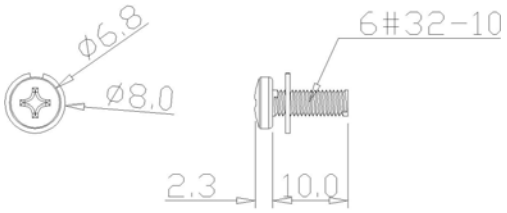
Step 2: Close the chassis and lock with the four screws.



2.9 Wallmount kit installation

Get the brackets ready and fasten appropriate four screws on each bracket. After fastening the two brackets on the bottom lid of AEC-6510, the wallmount kit installation has been finished.

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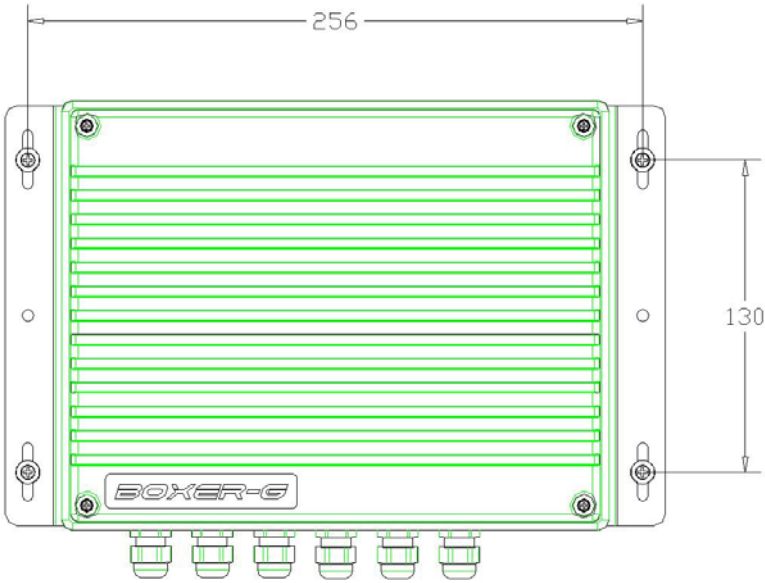
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130
BOXER-G

Chapter

3

Award BIOS Setup

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

Press <F1> to RESUME

Write down the message and press the F1 key to continue the boot up sequence.

System configuration verification

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

The AEC-6510 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 Award BIOS Setup

Awards BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

Entering Setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.

Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

Advanced BIOS Features

Use this menu to set the advanced features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring, KB wake up, etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu allows you to set the shutdown temperature for your system.

Frequency/Voltage Control

Use this menu to specify your settings for auto detect DIMM/PCI clock and spread spectrum.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set Supervisor/User Password

Use this menu to set Supervisor/User Passwords.

Save and Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

You can refer to the "AAEON BIOS Item Description.pdf" file in the CD for the meaning of each setting in this chapter.

Chapter 4

Driver Installation

4.1 Software Drivers

This chapter describes the operation and installation of the display drivers supplied on the Supporting CD-ROM that are shipped with your product. The onboard VGA adapter is based on the AMD LX VGA Flat Panel/CRT controller. This controller offers a large set of extended functions and higher resolutions. The purpose of the enclosed software drivers is to take advantage of the extended features of the AMD LX VGA Flat Panel/CRT controller.

Hardware Configuration

Some of the high-resolution drivers provided in this package will work only in certain system configurations. If a driver does not display correctly, try the following:

1. Change the display controller to CRT-only mode, rather than flat panel or simultaneous display mode. Some high-resolution drivers will display correctly only in CRT mode.

2. If a high-resolution mode does not support your system, try to use a lower-resolution mode. For example, 1024 x 768 mode will not work on some systems, but 800 x 600 mode supports the most.

4.2 Necessary to Know

The instructions in this manual assume that you understand elementary concepts of MS-DOS and the IBM Personal Computer.

Before you attempt to install any driver from the *Supporting CD-RO*M, you should:

- Know how to copy files from a CD-ROM to a directory on the hard disk
- Understand the MS-DOS directory structure

  If you are uncertain about any of these concepts, please refer to the DOS or OS/2 user reference guides for more information before you proceed with the installation.

Before you begin

The Supporting CD-ROM contains different drivers for corresponding Windows OS, please choose the specific driver for your Windows OS.

4.3 Installing VGA Driver

Win XP / Win XPe VGA

Place the Driver CD-ROM into your CD-ROM drive and follow the steps below to install.

1. Click on **Start** button.
2. Click on **Settings** button.
3. Click on **Control Panel** button.
4. Click on **System** button.
5. Select **Hardware** and click on **Device Manager…**.
6. Double click on **Video Controller (VGA Compatible)**.
7. Click on **Update Driver…**.
8. Click on **Next**.
9. Select **Search for a suitable driver…**, then click on **Next**.
10. Select **Specify a location**, then click on **Next**.
11. Click on **Browse**.
12. Select "l**x_win"** file from CD-ROM **(Driver/Step 1 – LX_Graphics)** then click on **Open**.
13. Click on **OK**.
14. Click on **Next**.
15. Click on **Yes**.
16. Click on **Finish**.

Note: The user must install this system driver before install other device drivers.

4.4 Installing AES Driver

Win XP / Win XPe AES

Place the Driver CD-ROM into your CD-ROM drive and follow the steps below to install.

1. Click on **Start** button.
2. Click on **Settings** button.
3. Click on **Control Panel** button.
4. Click on **System** button.
5. Select **Hardware** and click on **Device Manager…**.
6. Double click on **Entertainment Encryption/Decryption Controller**.
7. Click on **Update Driver…**.
8. Click on **Next**.
9. Select **Search for a suitable driver…**, then click on **Next**.
10. Select **Specify a location**, then click on **Next**.
11. Click on **Browse**.
12. Select **"LXAES"** file from CD-ROM **(Driver/Step 2 – AES)** then click on **Open**.
13. Click on **OK**.
14. Click on **Next**.
15. Click on **Finish**.

4.5 Installing Ethernet Driver

1. Click on the ***Step 3 – Lan*** folder
2. Double click on the ***Setup*** file located in the folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

4.6 Ethernet Software Configuration

The onboard Ethernet interface supports all major network operating systems. I/O addresses and interrupts are easily configured via the Insyde BIOS Setup. To configure the medium type, to view the current configuration, or to run diagnostics, please refer to the following instruction:

1. Power the main board on. Ensure that the RSET8139.EXE file is located in the working drive.
2. At the prompt, type RSET8139.EXE and press <ENTER>. The Ethernet configuration program will then be displayed.
3. This simple screen shows all the available options for the Ethernet interface. Just highlight the option you wish to change by using the Up and DOWN keys. To change a selected item, press <ENTER>, and a screen will appear with the available options. Highlight your option and press <ENTER>. Each highlighted option has a helpful message guide displayed at the bottom of the screen for

additional information.

4. After you have made your selections and the configuration is what you want, press <ESC>. A prompt will appear asking if you want to save the configuration. Press "Y" if you want to save.

There are three very useful diagnostic functions offered in the Ethernet Setup Menu as follows:

1. Run EEPROM test
2. Run Diagnostics on Board
3. Run Diagnostics on Network

Each option has its own display screen, which shows the format and result of any diagnostic tests undertaken.

Appendix

A

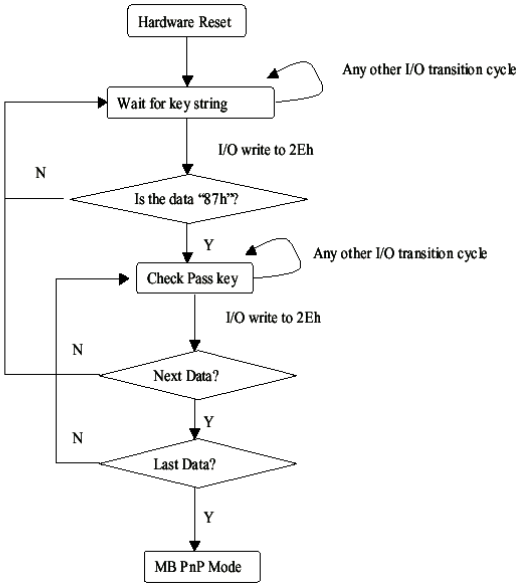
Programming the Watchdog Timer

A.1 Programming

AEC-6510 utilizes ITE 8712 chipset as its watchdog timer controller.

Below are the procedures to complete its configuration and the AAEON intial watchdog timer program is also attached based on which you can develop customized program to fit your application.

After the hardware reset or power-on reset, the ITE 8712 enters the normal mode with all logical devices disabled except KBC.



There are three steps to complete the configuration setup: (1) Enter the MB PnP Mode; (2) Modify the data of configuration registers; (3) Exit the MB PnP Mode. Undesired result may occur if the MB PnP Mode is not exited normally.

(1) Enter the MB PnP Mode

To enter the MB PnP Mode, four special I/O write operations are to be performed during Wait for Key state. To ensure the initial state of the key-check logic, it is necessary to perform four write opera-tions to the Special Address port (2EH). Two different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
87h, 01h, 55h, 55h:	2Eh	2Fh

(2) Modify the Data of the Registers

All configuration registers can be accessed after entering the MB PnP Mode. Before accessing a selected register, the content of Index 07h must be changed to the LDN to which the register belongs, except some Global registers.

(3) Exit the MB PnP Mode

Set bit 1 of the configure control register (Index=02h) to 1 to exit the MB PnP Mode.

WatchDog Timer Configuration Registers

LDN	Index	R/W	Reset	Configuration Register or Action
All	02H	W	N/A	Configuration Control
07H	71H	R/W	00H	WatchDog Timer Control Register
07H	72H	R/W	00H	WatchDog Timer Configuration Register
07H	73H	R/W	00H	WatchDog Timer Time-out Value (LSB) Register
07H	74H	R/W	00H	WatchDog Timer Time-out Value (MSB) Register

Configure Control (Index=02h)

This register is write only. Its values are not sticky; that is to say, a hardware reset will automatically clear the bits, and does not require the software to clear them.

Bit	Description
7-2	Reserved
1	Returns to the Wait for Key state. This bit is used when the configuration sequence is completed.
0	Resets all logical devices and restores configuration registers to their power-on states.

WatchDog Timer Control Register (Index=71h, Default=00h)

Bit	Description
7	WDT is reset upon a CIR interrupt
6	WDT is reset upon a KBC (Mouse) interrupt
5	WDT is reset upon a KBC (Keyboard) interrupt
4	WDT is reset upon a read or a write to the Game port base address
3-2	Reserved
1	Force Time-out. This bit is self-clearing
0	WDT status
	1: WDT value reaches 0
	0: WDT value is not 0

WatchDog Timer Configuration Register (Index=72h, Default=00h)

Bit	Description
7	WDT Time-out value select
	1: Second
	0: Minute
6	WDT output through KRST (pulse) enable
5	WDT Time-out value Extra select 1: 4s. 0: Determine by WDT Time-out value select (bit7 of this register)
4	WDT output through PWROK1/PWROK2 (pulse) enable
3	Select the interrupt level[note] for WDT

WatchDog Timer Time-out Value (LSB) Register (Index=73h, Default=00h)

Bit	Description
7-0	WDT Time-out value 7-0

WatchDog Timer Time-out Value (MSB) Register (Index=74h, Default=00h)

Bit	Description
7-0	WDT Time-out value 15-8

A.2 ITE8712 Watchdog Timer Initial Program

```
        .MODEL SMALL
        .CODE
Main:
        CALL Enter_Configuration_mode
        CALL Check_Chip
        mov cl, 7
        call Set_Logic_Device
        ;time setting
        mov cl, 10 ; 10 Sec
        dec al
Watch_Dog_Setting:
        ;Timer setting
        mov al, cl
        mov cl, 73h
        call Superio_Set_Reg
        ;Clear by keyboard or mouse interrupt
        mov al, 0f0h
        mov cl, 71h
        call Superio_Set_Reg
        ;unit is second.
        mov al, 0C0H
        mov cl, 72h
        call Superio_Set_Reg
```

```
; game port enable
mov cl, 9
call Set_Logic_Device

Initial_OK:
CALL Exit_Configuration_mode
MOV AH,4Ch
INT 21h

Enter_Configuration_Mode PROC NEAR
MOV SI,WORD PTR CS:[Offset Cfg_Port]

MOV DX,02Eh
MOV CX,04h
Init_1:
MOV AL,BYTE PTR CS:[SI]
OUT DX,AL
INC SI
LOOP Init_1
RET
Enter_Configuration_Mode ENDP

Exit_Configuration_Mode PROC NEAR
MOV AX,0202h
CALL Write_Configuration_Data
```

```
        RET
        Exit_Configuration_Mode ENDP

        Check_Chip PROC NEAR

        MOV AL,20h
        CALL Read_Configuration_Data
        CMP AL,87h
        JNE Not_Initial

        MOV AL,21h
        CALL Read_Configuration_Data
        CMP AL,12h
        JNE Not_Initial

Need_Initial:
        STC
        RET
Not_Initial:
        CLC
        RET
        Check_Chip ENDP
        Read_Configuration_Data PROC NEAR
        MOV DX,WORD PTR CS:[Cfg_Port+04h]
        OUT DX,AL
```

```
MOV DX,WORD PTR CS:[Cfg_Port+06h]
IN AL,DX
RET
Read_Configuration_Data ENDP

Write_Configuration_Data PROC NEAR
MOV DX,WORD PTR CS:[Cfg_Port+04h]
OUT DX,AL
XCHG AL,AH
MOV DX,WORD PTR CS:[Cfg_Port+06h]
OUT DX,AL
RET
Write_Configuration_Data ENDP

Superio_Set_Reg proc near
push ax
MOV DX,WORD PTR CS:[Cfg_Port+04h]
mov al,cl
out dx,al
pop ax
inc dx
out dx,al
ret
Superio_Set_Reg endp.Set_Logic_Device proc near
```

```
Set_Logic_Device    proc    near
push ax
push cx
xchg al,cl
mov cl,07h
call Superio_Set_Reg
pop cx
pop ax
ret
Set_Logic_Device endp

;Select 02Eh->Index Port, 02Fh->Data Port
Cfg_Port DB 087h,001h,055h,055h

DW 02Eh,02Fh
```

END Main

Note: Interrupt level mapping

0Fh-Dh: not valid

0Ch: IRQ12

.

.

03h: IRQ3

02h: not valid

01h: IRQ1

00h: no interrupt selected

Appendix

B

I/O Information

B.1 I/O Address Map

Address	Description	User Address
000-01F	DMA Controller #1	000-000F
020-03F	Interrupt Controller #1, Master	020-021
040-05F	System Time	040-043
060-06F	8042 (Keyboard Controller)	060-064
070-07F	Real time Clock, NMI (non-maskable Interrupt) Mask	070-073
080-09F	DMA Page Register	080-08F
0A0-0BF	Interrupt Controller #2	0A0-0A1
0C0-0DF	DMA Controller #2	0C0-0DF
0F0-0FF	Math Coprocessor	0F0-0FF
1F0-1F7	Primary IDE Channel	1F0-1F7
2F8-2FF	Serial Port 2	2F8-2FF
3B0-3DF	EGA / VGA card	3B0-3DF
3F8-3FF	Serial Port 1	3F8-3FF

B.2 1st MB Memory Address Map

Memory Address	Description
00000-9FFFF	System memory
A0000-BFFFF	VGA buffer
C0000-CBFFF	VGA BIOS
E0000-FFFFF	System BIOS

B.3 IRQ Mapping Chart

IRQ0	System Timer	IRQ8	System CMOS / Real time clock
IRQ1	Keyboard	IRQ9	Unused
IRQ2	Cascade to IRQ Controller	IRQ10	Unused
IRQ3	COM2	IRQ11	Microsoft ACPI – Compliant system
IRQ4	COM1	IRQ12	Unused
IRQ5	Unused	IRQ13	FPU
IRQ6	Unused	IRQ14	Primary IDE
IRQ7	Unused	IRQ15	Reserved

B.4 DMA Channel Assignments

DMA Channel	Function
0	Available
1	Available
2	Available
3	Available