



Single Board Computer
PEAK 736VL2
User Manual

Copyright

This document contains information protected by copyright. No part of this manual may be reproduced, copied, translated or transmitted in any form or by any means without the prior written consent from NEXCOM International Co., LTD.

Disclaimer

The information in this document is subject to change without prior notice and does not represent commitment from NEXCOM International Co., LTD. However, users may update their knowledge of any product in use by constantly checking its manual posted on our website: <http://www.nexcom.com>.

NEXCOM shall not be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of any product, nor for any infringements upon the rights of third parties which may result from such use. Any implied warranties of merchantability or fitness for any particular purpose is also disclaimed.

Acknowledgements

Peak 736 series is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices and describes how to keep the system CE compliant.

FCC Compliance Statement for Class A Devices

The product(s) described in this user's guide has been tested and proved to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE Certification

The product(s) described in this user's guide complies with all applicable European Union (CE) directives if it has a CE marking.

Chapter 1 General Information.....	4
1.1 Features.....	5
1.2 Specifications.....	5
1.3 Board Layout.....	9
1.4 Checklist.....	10
1.5 Mechanical Drawing.....	10
1.6 CPU Cooler.....	11
1.7 Block Diagram.....	12
Chapter 2 Jumper Setting.....	13
2.1 Functions of Jumpers.....	15
2.2 Setting Jumpers.....	16
2.3 Location of Jumpers.....	17
2.4 Jumping Setting.....	18
2.5 Connector Pin Definition.....	19
Chapter 3 Expanded Capabilities.....	31
3.1 System Memory.....	32
3.2 Installing DIMM.....	33
3.3 Changing CPU.....	35
3.4 Changing Fan Heatsink.....	36
Chapter 4 Award BIOS Setup.....	37
4.1 Entering Setup.....	39
4.2 The Main Menu	39
4.3 Getting Help.....	41
4.4 Control Keys.....	42
4.5 Standard CMOS Features.....	43
4.6 Advanced BIOS Features.....	45
4.7 Advanced Chipset Features.....	48
4.8 Integrated Peripherals.....	49
4.8.1 Integrated Peripherals - OnChip IDE Device.....	50
4.8.2 Integrated Peripherals - Onboard Device.....	51
4.8.3 Integrated Peripherals - Super I/O Device.....	52
4.9 Power Management Setup.....	53
4.10 PnP/PCI Configurations.....	55
4.11 PC Health Status.....	56
4.12 Load Fail-Safe Defaults.....	56
4.13 Load Optimized Defaults.....	56
4.14 Set User Password.....	57

4.15 Save & Exit Setup.....	57
4.16 Exit Without Saving.....	57
Chapter 5 Driver Installation.....	58
5.1 Installation CD.....	59
5.2 Installing Drivers.....	60
5.3 Installing Intel Chipset.....	60
5.4 Installing VGA.....	62
5.5 Installing Audio.....	63
5.6 Installing LAN.....	64
5.7 Installing Dual LVDS.....	67
5.8 Installing 2 Mic & 2 Lineout.....	73
Appendix: Watchdog Timer Setting.....	74
A.1 Watchdog Timer Working Procedure.....	75
A.2 Watchdog Timer Control Register.....	76
A.3 Watchdog Timer Programming Procedure.....	76
A.3.1 Power On or Reset the System.....	76
A.3.2 Clear the WDT.....	77
A.3.3 WDT Control Register.....	77
Appendix B: GPIO Programming Guide.....	79

Chapter 1

General Information

1.1 Features

The Peak736VL2 is a member of NEXCOM's P4-based SBC family. The features of this model are as follows:

- * Intel® Pentium® M/Celeron processor (478uFCPGA/479uFCBGA) with 400MHz FSB at maximum speed of up to 1.7GHz
- * 184-pin DIMM x 2 supports DDR200/266/333 SDRAM memory up to 2GB
- * Supports maximum 36-bit (18+18) dual pixel LVDS display
- * 10/100 Fast Ethernet LAN x 1~2
- * USB 2.0 port x 4

1.2 Specifications

System Architecture

- * Full-size SBC with PCI/ISA Golden Finger

CPU Support

- * Single 478uFCPGA/479uFCBGA socket
- * Supports Intel® Pentium® M: 1MB on die L2 cache with 400MHz FSB and speed up to 1.7GHz
- * Supports Intel® Dothan: 2MB on die L2 cache with 400MHz FSB and speed up to 1.7GHz
- * Supports Intel® Celeron® M: 512KB on die L2 cache with 400MHz FSB and speed up to 1.3GHz

Memory

- * 184-pin DDR DIMM x 2
- * Supports unbuffered non-ECC DDR 200/266 up to 1GB for Peak 736VL (Intel 852GM)
- * Supports unbuffered ECC or non-ECC DDR 200/266/333 up to 2GB for Peak 736VL2 (Intel 852GME)

BIOS

- * Award System BIOS
- * Advanced Power Management/Advanced Configuration & Power Interface support
- * 4M bits flash ROM
- * Plug & Play support

Chipsets

- * Intel® 852GM (Peak736VL) or 852GME (Peak 736VL2)
- * Intel® 82801 DB x 1, I/O Controller Hub (ICH4)

LAN

- * Intel® 82551ER 10/100 Fast Ethernet x 1
- * Optional Intel® 82551ER 10/100 Fast Ethernet x 1 (for Peak 736VL2 only)
- * Compliant with PCI V2.1/2.2 IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.3ab
- * RJ45 connector with LED x 1 (The other RJ45 is optional for LAN)
- * Support for drivers: Windows® XP/2000/2003, Linux
- * 2-pin header x 2 for extended LAN LED x 1(The other 2 x 2-pin header is optional for LAN)

Display

- * Intel® 852GME integrated dynamic video shared memory of 32MB (max) adjusted by OS.
- * Resolution: *Up to 1600 x 1200 for CRT or Up to 1280 x 1024 for TFT
- * Internal LVDS: Support 18/24bit single pixels or 18-bit dual pixels LVDS panel (Resolution support up to 1280 x 1024)
- * Optional LVDS: DF13-20DP, 20-pin connector x 2, support 18-bit single/dual pixel LVDS panel for Peak 736VL2 only(Resolution support up to 1400 x 1050)
- * Dual Display : Simultaneous Scan-CRT + LVDS LCD, Dual View-CRT+LVDS LCD
- * CCFL connector for LCD panel backlight: Provides +12V or +5V for backlight inverter
- * D-sub 15-pin VGA port x 1

I/O Interface

- * Serial port:10-pin box headerx2 (optional COM2 RS232/422/485 by switch for Peak 736VL2 only)
- * USB 2.0 port x 4 through 6-pin box header x 2
- * HDD: Ultra ATA 100/66/33 support, 40-pin connector x 2.
- * Optional CF socket x 1 (for Peak 736VL2 only)
- * Disk on Chip: DoC socket x 1
- * Disk on Module: 2-pin power connector for DoM
- * Parallel Port: 26-pin connector x 1
- * Floppy: 34-pin connector x 1
- * PS/2 keyboard/mouse: 6-pin MiniDIN connector x 1. 5-pin connector x 1 for external KB/Mouse
- * Optional AC97 audio interface: 4-pin header for Mic-in x 2 and Line-out x 2 for Peak736VL2 only
- * Optional TV-out x 1 (for Peak 736VL2 only)
- * Digital I/O port: 4 In and 4 Out with TTL level interface
- * Onboard buzzer x 1
- * IrDA Header x 1
- * Onboard 2-pin header for reset
- * 5 pins for key lock, 2 pins for power LED, 2 pins for HDD Power LED
- * 3-pin FAN JST connector x 1

I/O on Bracket

- * PS/2 Keyboard/Mouse Min DIN x 1
- * VGA 15-pin D-sub Connector x 1
- * 10/100 Fast Ethernet LAN with LED x1~2

System Monitor

- * System monitor controller is derived from IT8712
- * 6 voltage (for +3.3V, +5V, +12V, Vcore, +5V Standby, and +3.3V Standby)
- * 2 Fan speed (for CPU and system)
- * 2 temperature (one for CPU; the other for system)

Real Time Clock

- * On chip RTC with battery backup
- * External Li-on Battery x 1

Power Requirements

- * Supports AT and ATX power supply (Select by jumper)
- * +3.3V is converted from +5V and not directly from backplane or power supply
- * +5Vsb (standby power) is connected from backplane through both 3-pin and 4-pin connectors for wide-ranging backplane support
- * Power consumption: measure with Intel® Dothan® 1.7GHz
 - * a. +12V: 0.15A
 - * b. +5V: 5.25A
 - * c. 3.3V: 0A
 - * d. 5Vsb: 0.05A

Watchdog Timer

- * 1~128 seconds time-out intervals

Dimensions

- * 338.58 (L) x 122mm(W) [13.3 (L) x 3.8 inches (W)]

Environments

- * Operating temperatures: 0 to 60 degrees C
- * Storage temperatures: -20 to 80 degrees C
- * Relative humidity: 10 to 90% (non-condensing)

Certification

- * CE
- * FCC

Ordering Information

Peak 736VL:

Full-sized socket 478 Pentium® M CPU card with LAN (Intel®82551ER) x 1

Peak 736VL2:

Full-sized socket 478 Pentium® M CPU card with LAN (Intel®82551ER) x 2, CF socket, audio, dual LVDS support, and RS422/485 support

1.3 Board Layout

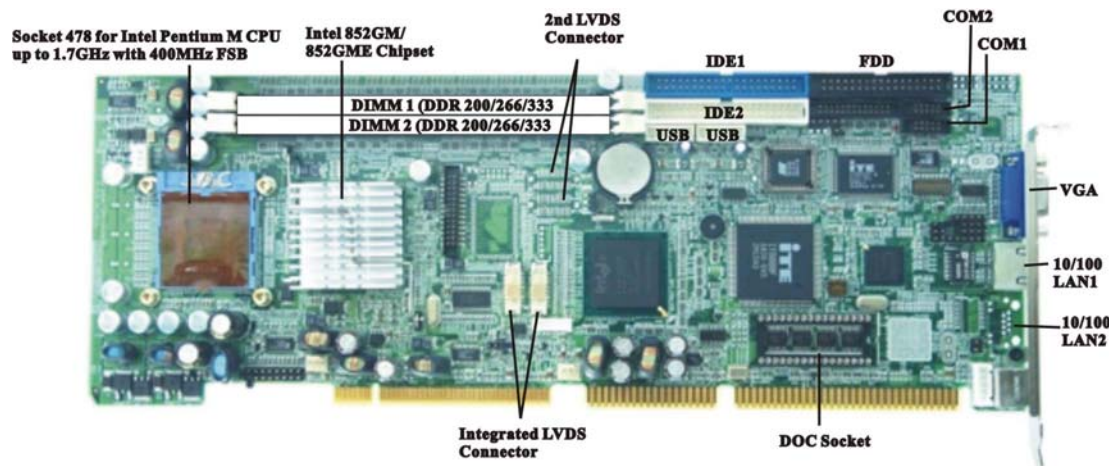


Figure 1-1: Peak736VL(2) Front Layout

1.4 Checklist

After opening the package of the Peak 736VL(2), please check and make sure you have all of the following items:

- ☐ One Peak 736VL(2) SBC
(A mechanical drawing of this model is shown below.)
- ☐ One PEAK 736 quick reference guide
- ☐ One 50CM Cable JST 2.5mm 3 pin to 3 pin (5V standby ATX Power-on Cable)
- ☐ One Y Cable for Keyboard and Mouse
- ☐ One Cable Set (FDD x1, SIO+PIO x1, SIO x1/Keyboard x1/IDE66 x1)
- ☐ One USB Cable with Bracket
- ☐ One Driver/Manual CD
- ☐ One CPU Cooler

1.5 Mechanical Drawing

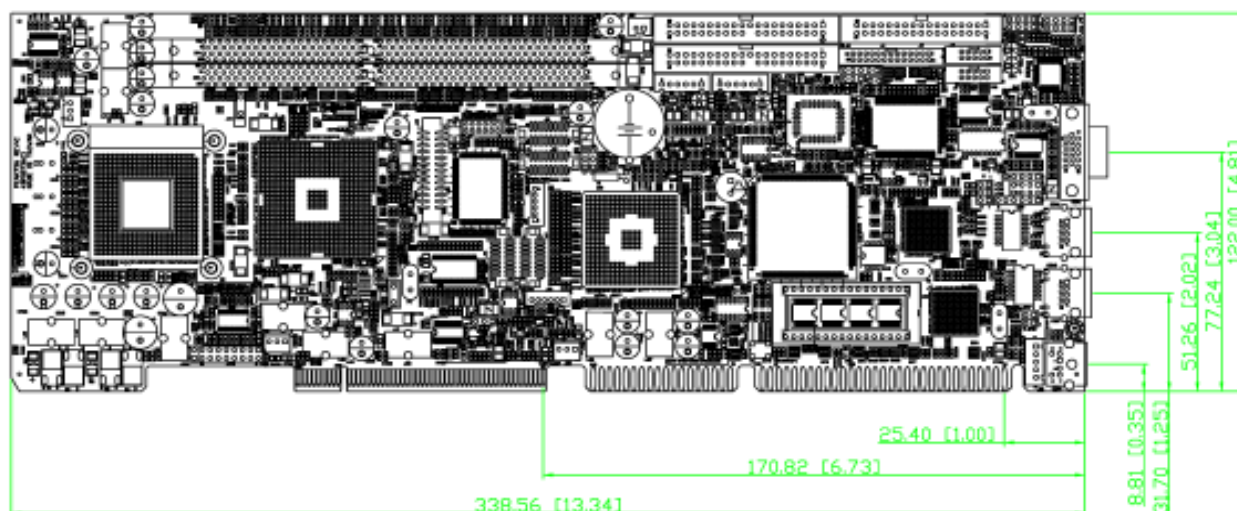


Figure 1-2: Mechanical Drawing of PEAK 736VL2

1.6 CPU Cooler

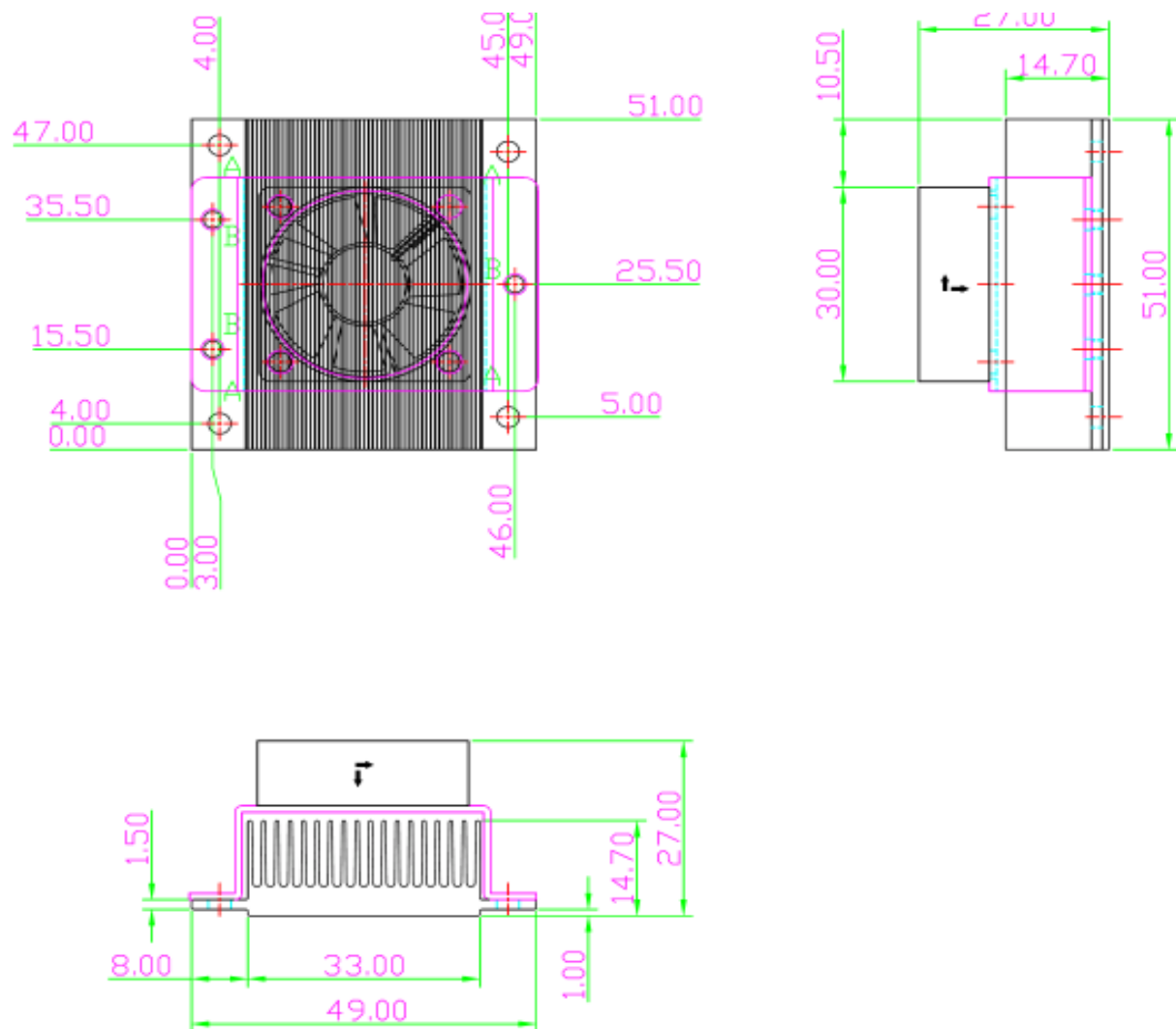


Figure 1-3: PEAK 736VL2 CPU Cooler

1.7 Block Diagram

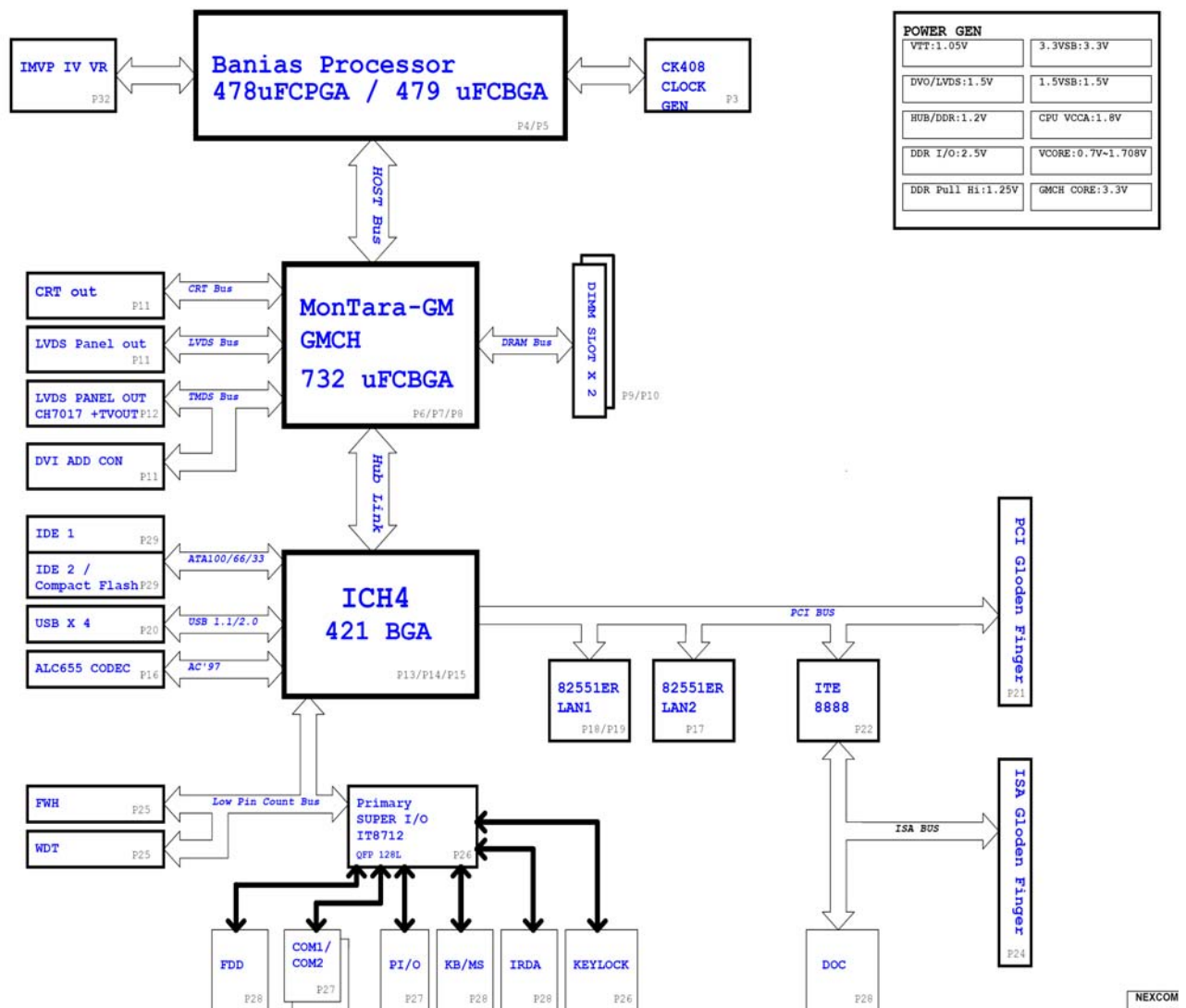


Figure 1-3: Peak736VL2 Block Diagram

Chapter 2

Jumper & Switch Settings

This chapter of the User's Manual describes how to set jumpers.

Note: The procedures that follow are generic for all of the PEA736 models

Before You Begin

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- ◆ A Philips screwdriver
- ◆ A flat-tipped screwdriver
- ◆ A set of jewelers Screwdrivers
- ◆ A grounding strap
- ◆ An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environment tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on the computers that are still connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to your computer or yourself.

- ◆ Always disconnect the unit from the power outlet whenever you are working inside the case.
- ◆ If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- ◆ Hold electronic circuit boards (such as the PEA736VL2 board) by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- ◆ Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- ◆ Use correct screws and do not over tighten screws.

2.1 Functions of Jumpers

You can use jumpers to set configuration options. The table below defines function of each jumper:

Connector	Function	Connector	Function
J1	Primary IDE	J24	CF Card
J2	Floppy	J25	Disk on Module External Power
J3	COM2	JP1	Line-In
J4	PIO	JP2	Mic-In 1
J5	Secondary IDE	JP3	Line-Out
J6	COM1	JP4	Key Lock
J7	USB 2/3	JP8	IR
J8	USB 0/1	JP11	GPIO
J9	ATX Connector	JP12	82551ER LAN1 ACT/Link LED
J10	TV-Out	JP15	82551ER LAN1 Speed 100 LED
J11	CH7017 LVDS Channel A	JP17	82551ER LAN2 Speed 100 LED
J12	CH7017 LVDS Channel B	JP18	82551ER LAN2 ACT/Link LED
J13	DVO Add-on Card	JP19	IDE LED/Power LED/Power On/Reset/Buzzer
J15	CH7017 LVDS Panel Backlight	JP21	Mic-In 2
J16	82855GME LVDS Channel A	CON1	VGA Connector
J17	82855GME LVDS Channel B	CON4	Keyboard + Mouse Connector
J18	82855GME LVDS Panel Backlight	CON5	82551ER LAN2 Connector
J19	CPU Fan	CON6	82551ER LAN1 Connector
J20	System Fan	U31	M-system Disk on Chip
J21	External Keyboard	RT1	System Thermal

Table 2-1: Functions of Jumpers

2.2 Setting Jumpers

A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. 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**. Please see the following illustrations:

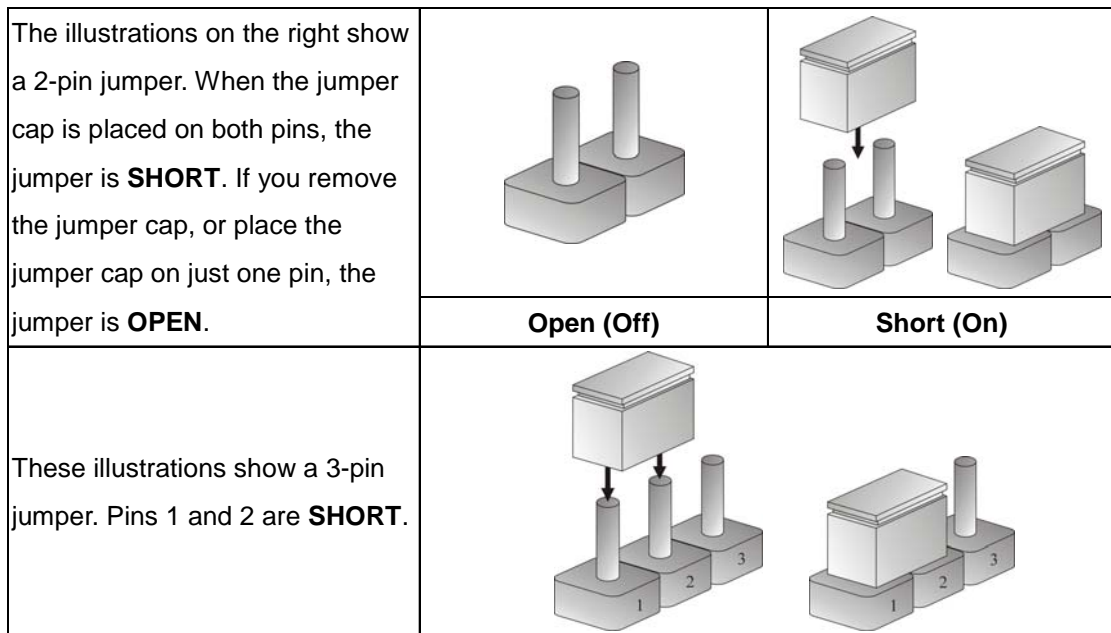


Figure 2-1 : How to Set Jumpers

2.3 Location of Jumpers

The illustration below shows the location of the mainboard jumpers:

□ = Pin 1

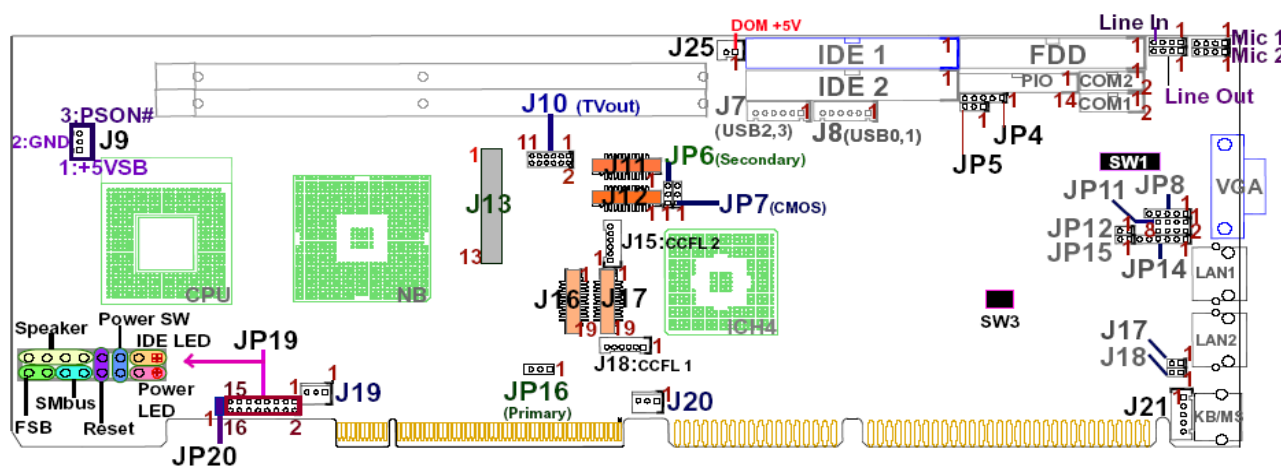


Figure 2-2 : Location of Jumpers

2.4 Jumper Setting

Switch Setting Table (* = default setup)

SW1: COM Port Type Select

SW1	1-20	2-19	3-18	4-17	5-16	6-15	7-14	8-13	9-12	10-11
*RS232	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
(Option)RS422	OFF	ON	ON	OFF	ON	OFF	ON	ON	ON	ON
(Option)RS485	ON	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	ON

SW3: M-System Disk on chip & LAN1/LAN2

SW3	1-8	2-7	3-6	4-5
D0000	ON	OFF	X	X
D8000	*OFF	*ON	X	X
LAN1 Enable	X	X	*ON	X
LAN2 Enable	X	X	X	*ON

Note: Disk on Chip

1. BIOS Default: OFF
2. SW3 Default: D8000-ON
3. Default has no BIOS memory for DOC.

If DOC is needed, please change jumper setting as above.

JP7: RTC Clear

	NORMAL	Clear CMOS
JP7	*1-2	2-3

JP6/JP16: Panel Power Select

	VCC5	VCC3
JP6 (CH7017)	1-2	*2-3
JP16 (855GME)	1-2	*2-3

JP19/JP20: CPU FSB Clock Select

	JP20(Pin:1,2)	JP19(Pin:14,16)
*400MHZ	ON	OFF
533MHZ	ON	ON

JP5: CF Card Master/Slave Select

	Slave	Master
JP5	*1-2	2-3

2.5 Connector Pin Definition

J1/J5 : Secondary IDE/ Primary IDE Connector

Pin	Definition	Pin	Definition
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GND	20	NC
21	DMA REQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IOCHRDYA	28	GND
29	DMA ACK#	30	GND
31	Interrupt	32	NC
33	DiskAddress1	34	DMA66 Detect
35	DiskAddress0	36	DiskAddress2
37	HDCCS1	38	HDCCS3
39	HDD Active LED	40	GND

J2 : Floppy Connector

Pin	Definition	Pin	Definition
1	GND	2	DENSEL#
3	GND	4	NC
5	GND	6	NC
7	GND	8	INDEX#
9	GND	10	MOTEA#
11	GND	12	DRVB#
13	GND	14	DRVA#
15	GND	16	MOTEB#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WDATA#
23	GND	24	WGATE#
25	GND	26	TK00#
27	GND	28	WPT#
29	GND	30	RDATA#
31	GND	32	SIDE1#
33	GND	34	DSKCHG#

J6/J3 : COM1/ COM2(RS232 Mode) Connector

Pin	Definition	Pin	Definition
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND	10	NC

J3 : COM2(RS422 Mode) Connector

Pin	Definition	Pin	Definition
1	TXD-	6	RTS-
2	TXD+	7	RTS+
3	RXD+	8	CTS+
4	RXD-	9	CTS-
5	GND	10	NC

J3 : COM2(RS485 Mode) Connector

Pin	Definition	Pin	Definition
1	TXD-/RXD-	6	NA
2	TXD+/RXD+	7	NA
3	NA	8	NA
4	NA	9	NA
5	GND	10	NC

J4 : PIO Connector

Pin	Definition	Pin	Definition
1	Line Print Strobe	14	Auto feed
2	Parallel Data0	15	Error
3	Parallel Data 1	16	Initialize
4	Parallel Data 2	17	Select input
5	Parallel Data 3	18	GND
6	Parallel Data 4	19	GND
7	Parallel Data 5	20	GND
8	Parallel Data 6	21	GND
9	Parallel Data 7	22	GND
10	Acknowledge	23	GND
11	BUSY	24	GND
12	Paper empty	25	GND
13	Select	26	GND

J7 : USB 2/3 Connector

Pin	Definition	Pin	Definition
1	+5VSB	2	DATA2-
3	DATA2+	4	DATA3-
5	DATA3+	6	GND

J8 : USB 0/1 Connector

Pin	Definition	Pin	Definition
1	+5VSB	2	DATA0-
3	DATA0+	4	DATA1-
5	DATA1+	6	GND

J9 : ATX POWER-ON Connector

Pin	Definition	Pin	Definition
1	+5VSB	2	GND
3	PSON#		

J10 : TV-OUT Connector

Pin	Definition	Pin	Definition
1	TV Video	2	TV GND
3	S Video C	4	TV GND
5	S Video V	6	TV GND
7	Component Y	8	TV GND
9	Component Pr	10	TV GND
11	Component Pb		

J11 : CH7017 LVDS Channel A Connector

Pin	Definition	Pin	Definition
1	DDCPCLK	2	DDCPDATA
3	VDD	4	RX0+
5	RX3+	6	RX0-
7	RX3-	8	VDD
9	GND	10	RX1+
11	RXCLK+	12	RX1-
13	RXCLK-	14	GND
15	GND	16	BACKLIGHT
17	RX2+	18	BACKLIGHT
19	RX2-	20	GND

J12 : CH7017 LVDS Channel B Connector

Pin	Definition	Pin	Definition
1	DDCPCLK	2	DDCPDATA
3	VDD	4	RX4+
5	RX7+	6	RX4-
7	RX7-	8	VDD
9	GND	10	RX5+
11	RXCLK+	12	RX5-
13	RXCLK-	14	GND
15	GND	16	BACKLIGHT
17	RX6+	18	BACKLIGHT
19	RX6-	20	GND

J13 : DVO ADD Card Connector

Pin	Definition	Pin	Definition
1	DVOCD 0	14	DVOCCLK#
2	DVOCD 1	15	DVOCCLK
3	DVOCD 2	16	DVOCBLANK#
4	DVOCD 3	17	DVOCVSYNC
5	DVOCD 4	18	DVOCHSYNC
6	DVOCD 5	19	DVOCFLDSTL
7	DVOCD 6	20	I2C CLOCK
8	DVOCD 7	21	I2C DATA
9	DVOCD 8	22	RESET
10	DVOCD 9	23	DVOBCINTRB
11	DVOCD 10	24	DVOBCCLKINT
12	DVOCD 11	25	+5V
13	GND	26	GND

J15 : CH7017 LVDS Panel Back Light Connector

Pin	Definition	Pin	Definition
1	Panel_B BackLight	2	Panel _B VDD
3	GND	4	GND
5	Panel_B BackLight Light adjust	6	LVDS_BKLTCTL

J16 : 82855GME LVDS Channel A Connector

Pin	Definition	Pin	Definition
1	DDCPCLK	2	DDCPDATA
3	VDD	4	RX0+
5	RX3+	6	RX0-
7	RX3-	8	VDD
9	GND	10	RX1+
11	RXCLK+	12	RX1-
13	RXCLK-	14	GND
15	GND	16	BACKLIGHT
17	RX2+	18	BACKLIGHT
19	RX2-	20	GND

J17 : 82855GME LVDS Channel B Connector

Pin	Definition	Pin	Definition
1	DDCPCLK	2	DDCPDATA
3	VDD	4	RX4+
5	RX7+	6	RX4-
7	RX7-	8	VDD
9	GND	10	RX5+
11	RXCLK+	12	RX5-
13	RXCLK-	14	GND
15	GND	16	BACKLIGHT
17	RX6+	18	BACKLIGHT
19	RX6-	20	GND

J18 : 82855GME LVDS Panel Back Light Connector

Pin	Definition	Pin	Definition
1	Panel_A BackLight	2	Panel _A VDD
3	GND	4	GND
5	Panel_A BackLight Light adjust	6	LVDS_BKLTCTL

J19/J20 : CPU FAN & SYSTEM FAN Connector

Pin	Definition	Pin	Definition
1	GND	2	+12V
3	SENSE		

J21 : External Keyboard Connector

Pin	Definition	Pin	Definition
1	KBCLK	2	KBDATA
3	NC	4	GND
5	+5V		

J24 : CF Card Connector

Pin	Definition	Pin	Definition
1	GND	2	DATA3
3	DATA4	4	DATA5
5	DATA6	6	DATA7
7	HDC CD100	8	GND
9	GND	10	GND
11	GND	12	GND
13	+5V	14	GND
15	GND	16	GND
17	GND	18	Disk Address 2
19	Disk Address 1	20	Disk Address 0
21	DATA0	22	DATA1
23	DATA2	24	NC
25	GND	26	GND
27	DATA11	28	DATA12
29	DATA13	30	DATA14
31	DATA15	32	HDC CS300
33	N/C	34	IOR
35	IOW	36	+5V
37	Interrupt 15	38	+5V
39	CF_CSEL#	40	NC
41	RESET#	42	IOCHRDY
43	DMA REQ	44	DMA ACK#
45	HDD Active Led	46	DMA66 DEC
47	DATA8	48	DATA9
49	DATA10	50	GND

J25 : Disk On Module External Power

Pin	Definition	Pin	Definition
1	+5V	2	GND

JP1 : LINE-IN Connector

Pin	Definition	Pin	Definition
1	LINEIN_L	2	Analog GND
3	JD2	4	LINEIN_R

JP2/JP21 : MIC-IN1/MIC-IN2 Connector

Pin	Definition	Pin	Definition
1	MICIN1	2	Analog GND
3	JD0	4	MICIN2

JP3 : LINE-OUT Connector

Pin	Definition	Pin	Definition
1	LINEOUT_L	2	Analog GND
3	JD1	4	LINEOUT_R

JP4 : Keylock

Pin	Definition	Pin	Definition
1	+5V	2	NC
3	GND	4	KEYLOCK
5	GND		

JP8 : IR

Pin	Definition	Pin	Definition
1	+5V	2	CIRRX
3	IRRX	4	GND
5	IRTX		

JP11 : GPIO

Pin	Definition	Pin	Definition
1	GP27_D_IN1 (PIN20)	2	GP23_D_OUT 1 (PIN24)
3	GP26_D_IN2 (PIN21)	4	GP22_D_OUT 2 (PIN25)
5	GP25_D_IN3 (PIN22)	6	GP21_D_OUT 3 (PIN26)
7	GP24_D_IN4 (PIN23)	8	GP20_D_OUT 4 (PIN27)

JP12 : 82551ER LAN1 ACT/LINK LED

Pin	Definition	Pin	Definition
1	LINK	2	ACTIVITY

JP15 : 82551ER LAN1 SPEED 100 LED

Pin	Definition	Pin	Definition
1	+5VSB	2	SPEED100

JP17 : 82551ER LAN2 SPEED100 LED

Pin	Definition	Pin	Definition
1	+5VSB	2	SPEED100

JP18 : 82551ER LAN2 ACT/LINK LED

Pin	Definition	Pin	Definition
1	ACTIVITY	2	LINK

JP19 : IDE LED/POWER LED/POWER ON/RESET/BUZZER Connector

Pin	Definition	Pin	Definition
1	+5V	2	+5V
3	IDE_LED	4	GND
5	POWER ON	6	GND
7	RESET	8	GND
9	SPEAKER	10	SMB_DATA
11	GND	12	SMB_CLK
13	GND		
15	+5V		

FUNCTION	PIN Definition
IDE LED	JP19(1,3)
POWER LED	JP19(2,4)
POWER BUTTON	JP19(5,6)
RESET	JP19(7,8)
SM BUS	JP19(10,12)
SPEAKER	JP19(9,15)

CON1 : VGA Connector

Pin	Definition	Pin	Definition
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	+5V	12	DDCDAT
13	HSYNC	14	VSYSN
15	DDCCLK		

CON4: Keyboard + Mouse Connector

Pin	Definition	Pin	Definition
1	Keyboard DATA	2	Mouse DATA
3	GND	4	+5V
5	Keyboard CLK	6	Mouse CLK

CON5/CON6:82551ER LAN1/LAN2 RJ45 Connector

Pin	Definition	Pin	Definition
1	TXP	2	TXN
3	RXP	4	TERMPLANE
5	TERMPLANE	6	RXN
7	TERMPLANE	8	TERMPLANE
9	SPEED100	10	+5VSB
11	LINK	12	ACTIVITY

Switch Pin Definition

SW1: COM Port Type Select

Pin	Definition	Pin	Definition
1	RXD2	20	485RXD1
2	RTS2#	19	485CONTROL-B
3	422CTS-ON#	18	GND
4	422RTS-OFF#	17	GND
5	COM1_EN	16	GND
6	RS485-OFF#	15	GND
7	RS422ON1-1	14	RS422ON2-1
8	RS422ON2-1	13	RS422ON2-1
9	RS422ON3-1	12	RS422ON2-1
10	RS422ON4-1	11	RS422ON2-1

SW3: M-System Disk on chip & LAN1/LAN2

Pin	Definition	Pin	Definition
1	D0000_EN	8	MSYS_SEL#
2	D8000_EN	7	MSYS_SEL#
3	GND	6	PCIRESET#
4	GND	5	PCIRESET#

JP7: RTC Clear

Pin	Definition	Pin	Definition
1	+3.3V	3	GND
2	RTCRST#		

JP6/JP16: Panel Power Select

Pin	Definition	Pin	Definition
1	+5V	3	+3.3V
2	PANEL_BACKLIGHT		

JP19/JP20: CPU FSB Clock Select**JP19**

Pin	Definition	Pin	Definition
14	CLKSEL0	16	CLKSEL0_L

JP20

Pin	Definition	Pin	Definition
1	CLKSEL1	2	CLKSEL1_L

JP5: CF Card Master/Slave Select

Pin	Definition	Pin	Definition
1	+3.3V	3	GND
2	TYPESEL		

Chapter 3

Expanded Capabilities

3.1 System Memory

Your system memory is provided by DIMM's (Dual In-line Memory Modules) on the CPU board. The CPU board contains two memory banks: Bank 0 and 1, corresponds to connector DIMM1, DIMM2.

The table below shows possible DIMM configurations for the memory banks. Please be noted that the PEAK 736 Series supports Double Data (DDR333) SDRAM. Configurations using different brands of memory modules are not recommended.

DIMM 1	DIMM2	Total Memory
128MB	Empty	128MB
Empty	128MB	128MB
128MB	128MB	256MB
256MB	Empty	256MB
Empty	256MB	256MB
256MB	256MB	512MB
512MB	Empty	512MB
Empty	512MB	512MB
512MB	512MB	1024MB
1024MB	Empty	1024MB
Empty	1024MB	1024MB
1024MB	1024MB	2048MB

Table 3-1 : PEAK 736 DIMM Configurations

3.2 Installing DIMM

To install DIMM:

1. Make sure the two handles of the DIMM sockets are in the “open” position, i.e. the handles stay outward.

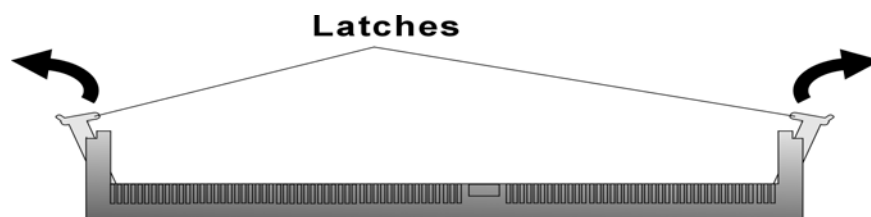


Figure 3-1 : How to Install DIMM (1)

2. Slowly slide the DIMM modules along the plastic guides in the both ends of the socket.

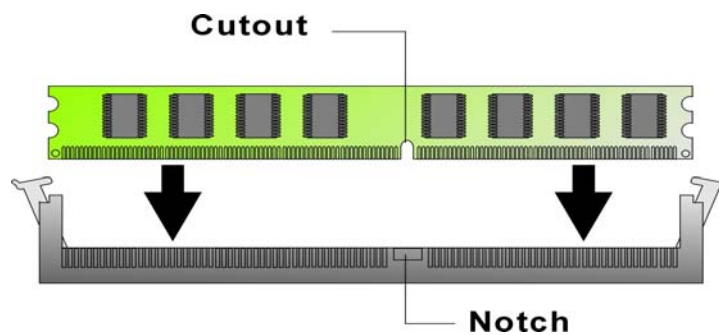


Figure 3-2 : How to Install DIMM (2)

3. Then press the DIMM module down right into the socket, until a click is heard. That means the two handles automatically locked the memory modules into the right position of the DIMM socket.

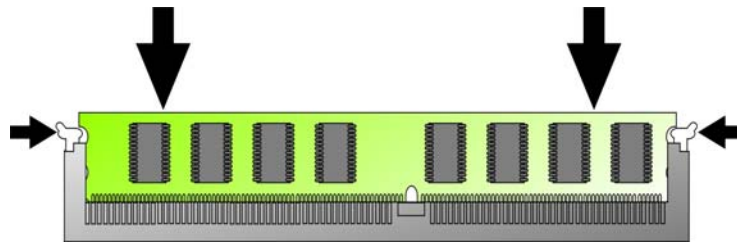


Figure 3-3 : How to Install DIMM (3)

4. To take away the memory module, just push the both handles outward, the memory module will be ejected by the mechanism in the socket.

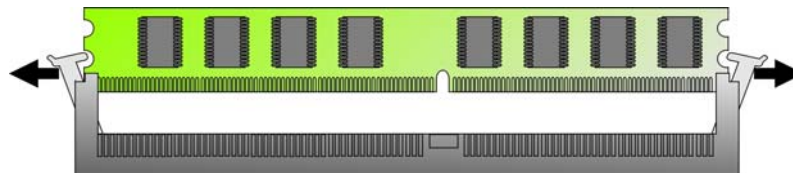


Figure 3-4 : How to Install DIMM (4)

3.3 Changing CPU

To change the CPU:

1. Remove the screw on the socket as shown in the picture.
2. Place the new CPU on the middle of the socket, orienting its beveled corner to line up with the socket's beveled corner. Make sure the pins of the CPU fit evenly to the socket openings. Screw it back to fasten the CPU to the socket.

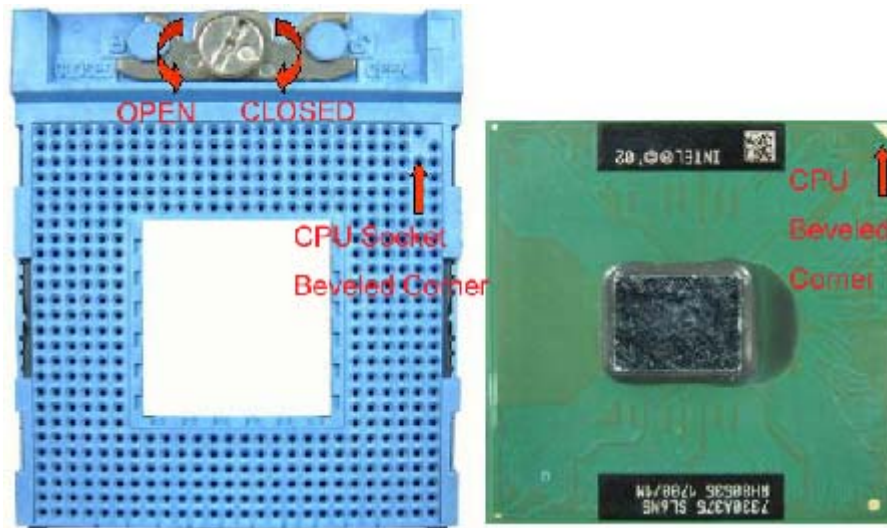
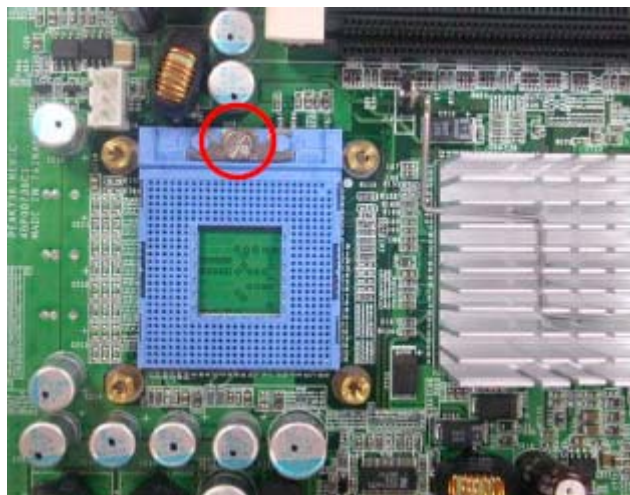


Figure 3-5 : How to Change CPU

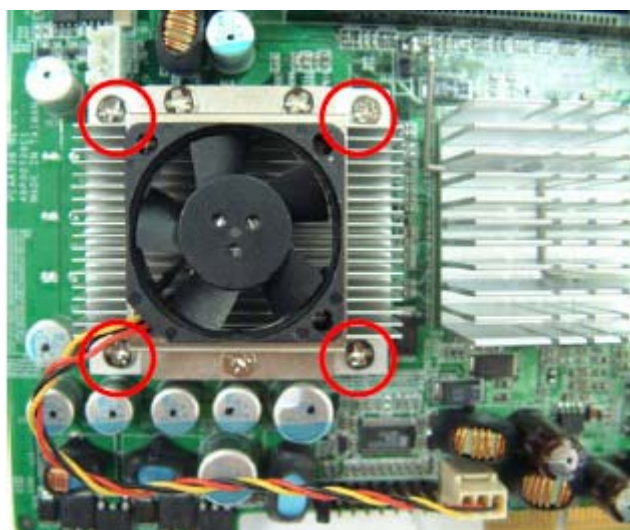
3.4 Installing Fan Heatsink (CPU)



Step 1: Make sure the two screws of the heatsink are placed at the top.



Step 2: Make sure the position of the board is right (the upper socket with the screw is placed at the top).



Step 3: After installing the CPU, place the heatsink on top of it and tighten the four screws as circled.

Chapter 4

Award BIOS Setup

This chapter explains how to use the BIOS Setup program for the Peak 736. The current BIOS setup pictures in the chapter is for reference only, which may change by the BIOS modification in the future. User can download any major updated items or reversion from NEXCOM web site <http://www.nexcom.com.tw>. If any unclear message occurs, please contact NEXCOM customer service representative for help or log onto <http://www.nexcom.com.tw/contact/contact.htm>.

About the BIOS

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:

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

When to Run BIOS

This program should be executed under the following conditions:

- ◆ When changing the system configuration
- ◆ When a configuration error is detected by the system and you are prompted to make changes to the Setup program
- ◆ When resetting the system clock
- ◆ When setting the CPU clock speed so that it automatically runs either fast or slow
- ◆ When redefining the communication ports to prevent any conflicts
- ◆ When making changes to the Power Management configuration
- ◆ When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

4.1 Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

- ♦ If the error occurs before the display device is initialized, a series of beeps will be transmitted.
- ♦ If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing allows you to enter Setup. Another way to enter Setup is to power on the computer and wait for the following message during the POST:

**TO ENTER SETUP BEFORE BOOT
PRESS <CTRL-ALT-ESC> OR KEY**

Press the key or press the <Ctrl>, <Alt>, and <Esc> keys to enter Setup:

4.2 The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The main menu allows you to select from ten setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

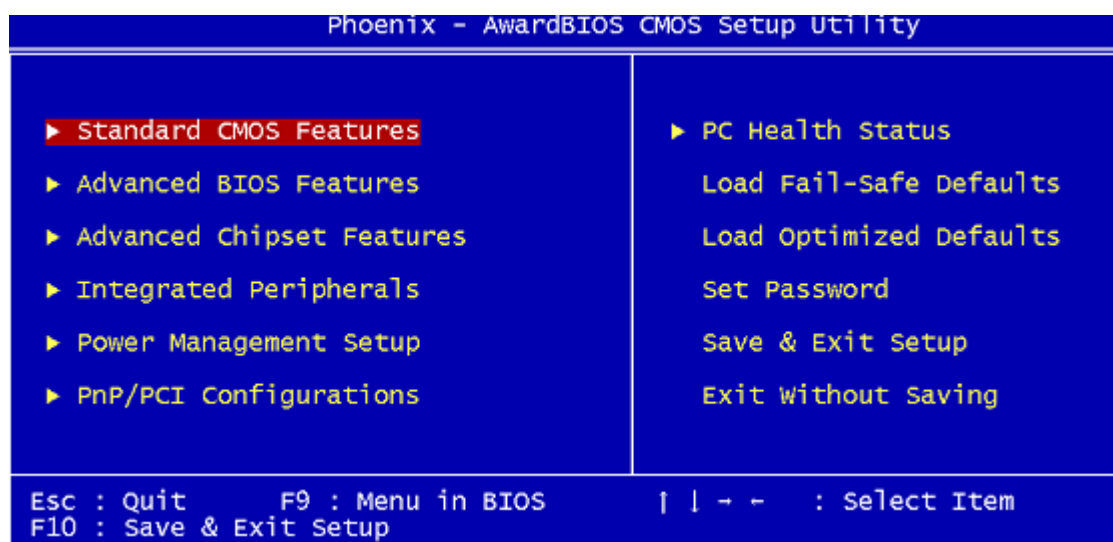


Figure 4-1: BIOS Setup Utility Main Menu

Standard CMOS Features

Use this menu for basic system configuration

Advanced BIOS Features

Use this menu to set the Advanced Features available on the system

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize the system's performance

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals

Power Management Setup

Use this menu to specify your settings for power management.

PnP/PCI Configurations

This entry appears if your system supports Plug and Play and PCI Configuration

PC Health Status

Displays CPU, System Temperature, Fan Speed, and System Voltages Value

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, i.e., factory settings for optimal performance system operations. While Award has de-signed the custom BIOS to maximize performance, the factory has the option to change these defaults to meet their needs.

Set Password

Enables you to change, set, or disable the supervisor or user pass-word.

Save & Exit Setup

Saves CMOS value changes to CMOS and exits setup.

Exit Without Saving

Ignores all CMOS value changes and exits setup.

4.3 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/ Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <F1> or <Esc>.

4.4 Control Keys

The table below lists the keys that help you navigate the setup program.






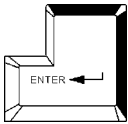
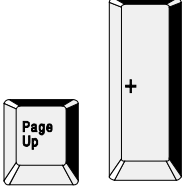
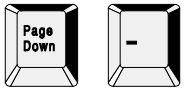

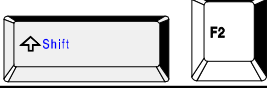





Up arrow		Move to previous item
Down arrow		Move to next item
Left arrow		Move to the item to the left
Right arrow		Move to the item to the right
Esc key		<i>Main Menu:</i> Quit without saving changes to CMOS <i>Status/Option Page Setup Menus:</i> Exit current page and return to Main Menu.
Enter Key		Select or Accept an Item
PgUp/plus key		Increase the numeric value or make changes
PgDn/minus key		Decrease the numeric value or make changes
F1 key		General help, only for Status Page Setup Menu and Option Page Setup Menu
F2/Shift + F2 key		Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F5 key		Restore the previous CMOS value from CMOS (only for Option Page Setup Menu)
F6 key		Load the default CMOS value from BIOS default table (only for Option Page Setup Menu)
F7 key		Load the Setup default value (only for Option Page Setup Menu)
F9 Key		Menu in BIOS
F10 key		Save all the CMOS changes (only for Main Menu)

Figure 4-2 : BIOS Control Keys

4.5 Standard CMOS Features

Selecting Standard CMOS Features on the main program screen displays the following menu:

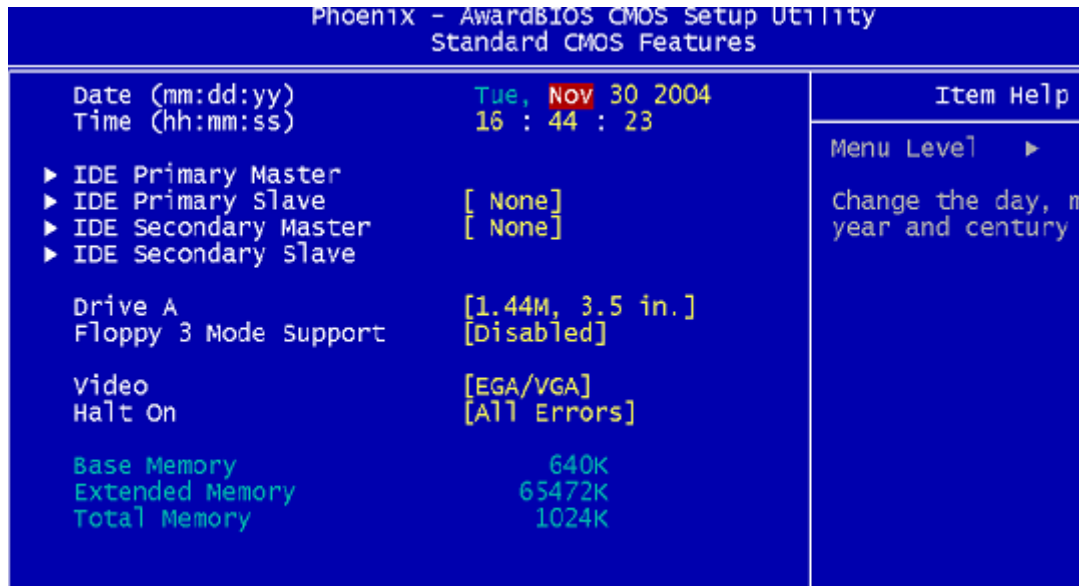


Figure 4-3 : BIOS -- Standard CMOS Features

The Standard CMOS Setup utility is used to configure the following features:

Date (mm:dd:yy)

The BIOS determines the day of the week from the other data information. This field is for information only. Press the left or right arrow key to move to the desired field (date, month, year). Press the **PgUp** or **PgDn** key to arrange the setting, or type the desired value into the field.

Time (hh:mm:ss)

The times format in <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

IDE Devices (Primary/Secondary/Master/Slave)

Your computer has two IDE channels and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel. If you leave this item at **Auto**, the system will automatically detect and configure any IDE devices it finds.

If it fails to find a hard disk, change the value to Manual and the manually configure the drive by entering the characteristics of the drive in the items below:

* Capacity	Approximate
* Cylinder	Number of cylinders
* Head	Number of heads
* Precomp	Write pre-compensation cylinder
* Landing Zone	Landing Zone
* Sector	Number of sectors

Refer to your drive's documentation or look on the drive if you need this information. If no device is installed, change the value to None.

Drive A

Options for these fields are:

* None	No floppy drive installed
* 360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
* 1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
* 720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
* 1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity
* 2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

Note: The **None** option could be used for diskless workstations.

Drive A

Floppy 3 mode refers to 3.5" diskette with a capacity of 1.2MB. This mode is sometimes use in Japan.

Video

Set this field to the type of graphics card installed in your system. If you are using a VGA or higher resolution card, choose the **EGA/VGA** option. The options are:

* EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, or PGA monitor adapters.
* CGA 40	Color Graphics Adapter, power up in 40 column mode
* CGA 80	Color Graphics Adapter, power up in 40 column mode
* Mono	Monochrome adapter, includes high resolution monochrome adapters

Halt On

This setting determines which type of errors will cause the system to halt during booting. The options are:

All Errors	Whenever the BIOS detects a non-fatal error, the system will be stopped and you will be prompted.
No Errors	The system boot will not be stopped for any error that may be detected.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

After you have made your selections in the Standard CMOS Setup screen, press **<ESC>** to go back to the main screen.

4.6 Advanced BIOS Features

Selecting Advanced BIOS Features on the main program screen displays this menu, which allows you to define advanced information about your system. You can make modifications to most of these items without causing fatal errors to your system.

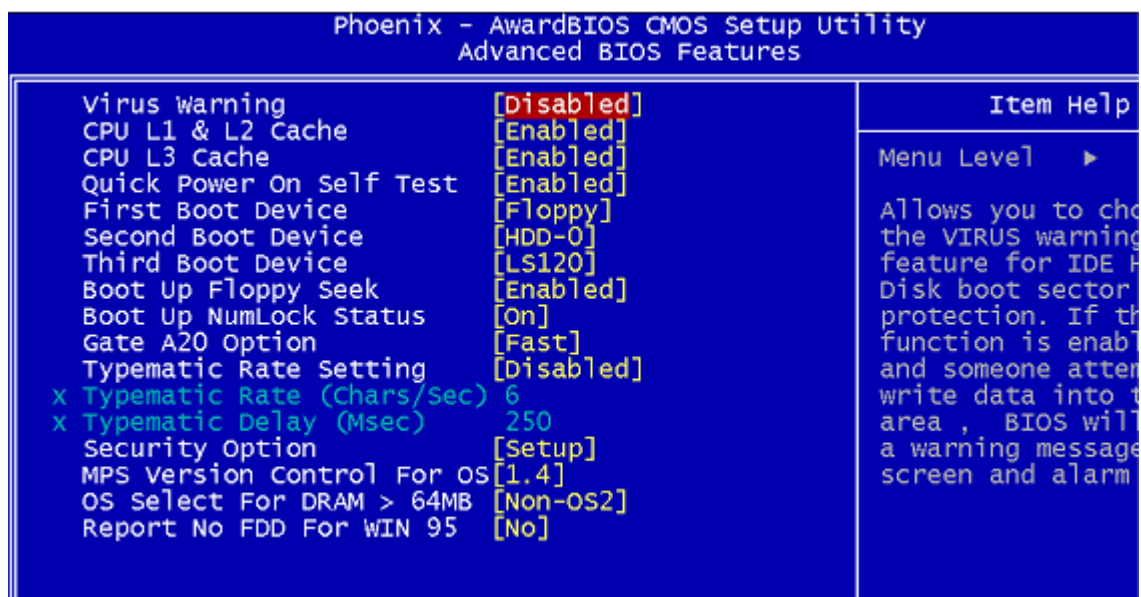


Figure 4-4 : BIOS -- Advanced BIOS Features

Virus Warning

Allows you to choose the Virus Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data into this area, BIOS will show a warning message on screen and an alarm will beep.

- **Enabled:** Activates automatically when the system boots up causing the following warning message to appear when anything attempts to access the boot sector or hard disk partition table:

! WARNING!

Disk boot sector is to be modified

Type "Y" to accept write or "N" to abort write

Award Software, Inc.

- **Disabled:** No warning message will appear when an attempt is made to access the boot sector or hard disk partition table.

Note:

This function is available only for DOS and other operating systems that do not trap INT13. For complete protection against viruses, install virus software in your operating system and update the virus definitions regularly. Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you disable the virus warning.

CPU L1, L2 & L3 Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). This BIOS feature is used to enable or disable the processor's Level 1, Level 2 and Level 3 cache. Naturally, the default and recommended setting is Enabled.

Quick Power On Self Test

This item speeds up the Power On Self Test (POST) when you turn on the computer. If it is set to Enabled, BIOS will shorten or skip some check times during the POST.

First/Second/Third Boot Device

BIOS attempts to load the operating system from the devices in the sequence selected in these items. The available choices are Floppy, LS120, Hard Disk CDRom, ZIP100, USB-FDD, USB-CDROM, LAN, Disabled.

Boot Up Floppy Seek

Enable this to allow the system to search for floppy drives during the POST. Disable this item to boot faster.

Boot Up NumLock Status

Toggle between On or Off to control the state of the NumLock key when the system boot. If On, the numeric keypad is in numeric mode. If Off, the numeric keypad is in cursor control mode.

Gate A20 Option

Enables you to select whether the chipset or the keyboard controller should control Gate A20. The options are:

- **Normal:** A pin in the keyboard controller controls Gate A20.
- **Fast:** Lets chipset control Gate A20.

Typematic Rate Setting

If set to Enabled, enables you to set the Typematic Rate and Typematic Delay.

Security Option

Enables you to select whether the password is required every time the system boots or only when you enter Setup.

System: The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

Setup: The system will boot, but access to Setup will be denied if the correct password is not entered at setup.

MPS Version Control for OS

This feature is only applicable to multiprocessor motherboards as it specifies the version of the Multi-Processor Specification (MPS) that the motherboard will use. The MPS is a specification by which PC manufacturers design and build Intel architecture systems with two or more processors.

MPS version 1.4 is required for a motherboard to support a bridgeless secondary PCI bus.

OS Select for DRAM > 64MB

Set to OS2 if the system memory size is greater than 64 MB and the operating system is OS/2.

Report No FDD for WIN 95

FDD for WIN 95 is reportedly not installed.

After you have made your selections in the Advanced BIOS Features setup, press <ESC> to go back to the main screen.

4.7 Advanced Chipset Features

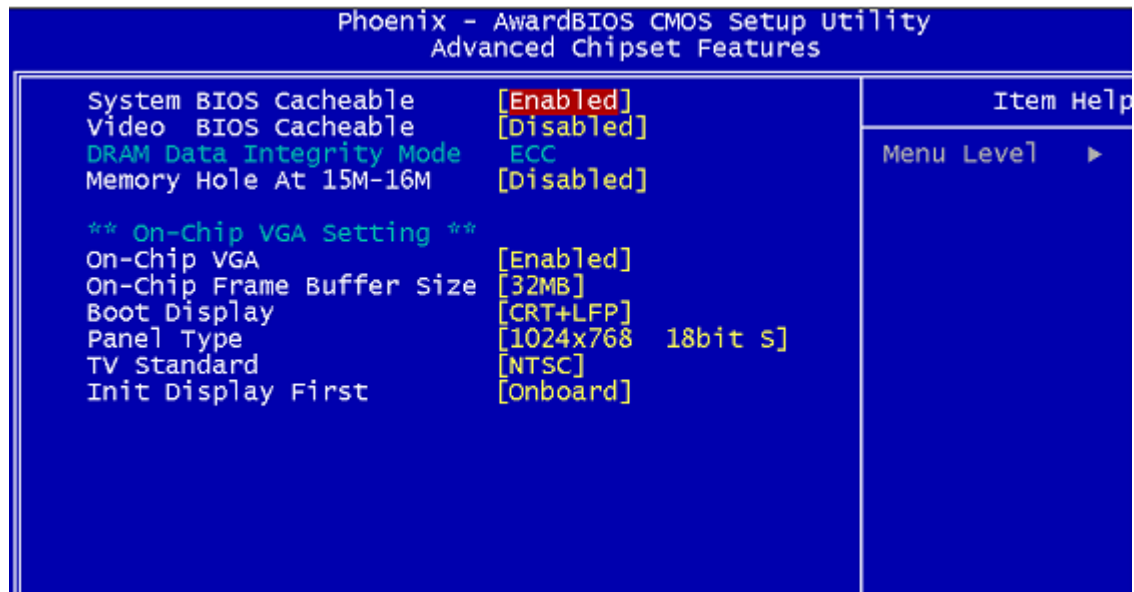


Figure 4-5 : BIOS- Advanced Chipset Features

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The available choices are Enabled, Disabled.

Video BIOS Cacheable

Selecting Enabled allows caching of the video BIOS ROM at C0000h, resulting in better video performance. However, if any program writes to this memory area, a system error may result. The choices : Enabled, Disabled.

Memory Hole at 15M-16M

In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory. The choices: Enabled, Disabled.

On-chip VGA

By default, the On-Chip VGA or chipset-integrated VGA is Enabled.

On-chip Frame Buffer Size

The On-Chip Frame Buffer Size can be set as 1MB or 8MB. This memory is shared with the system memory.

Boot Display

Use this field to select the type of device you want to use as the display(s) of the system.

Panel Type

This field allows users to decide the LVDS panel resolution. The available choices are: 800 x 600, 1024 x 768, 1280 x 1024, and 1400 x 1050.

TV Standard

This item allows you to designate the type of color TV standard to be used when a TV receiver is connecting to the TV out port. If a TV receiver is not connected to the XL2, this setting should be disabled. NTSC is for US color TVs while PAL is for European and other non-US TVs.

Init Display First

This item allows you to activate PCI slot or onboard display first. The choices are: PCI slot, Onboard/AGP.

4.8 Integrated Peripherals

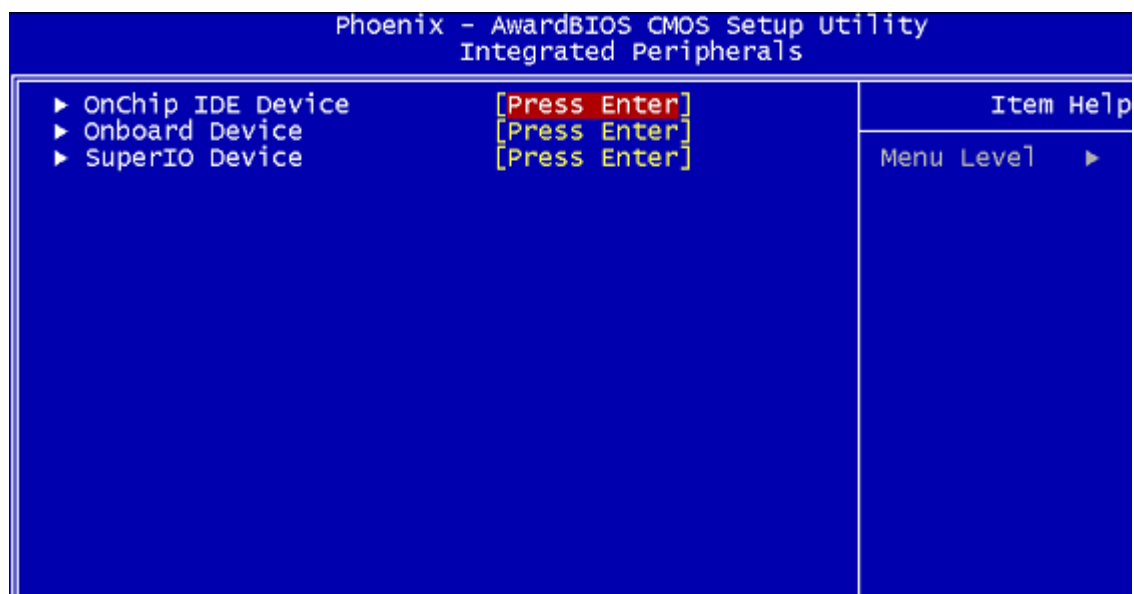


Figure 4-6 : BIOS- Integrated Peripherals

4.8.1 Integrated Peripherals -- OnChip IDE Device

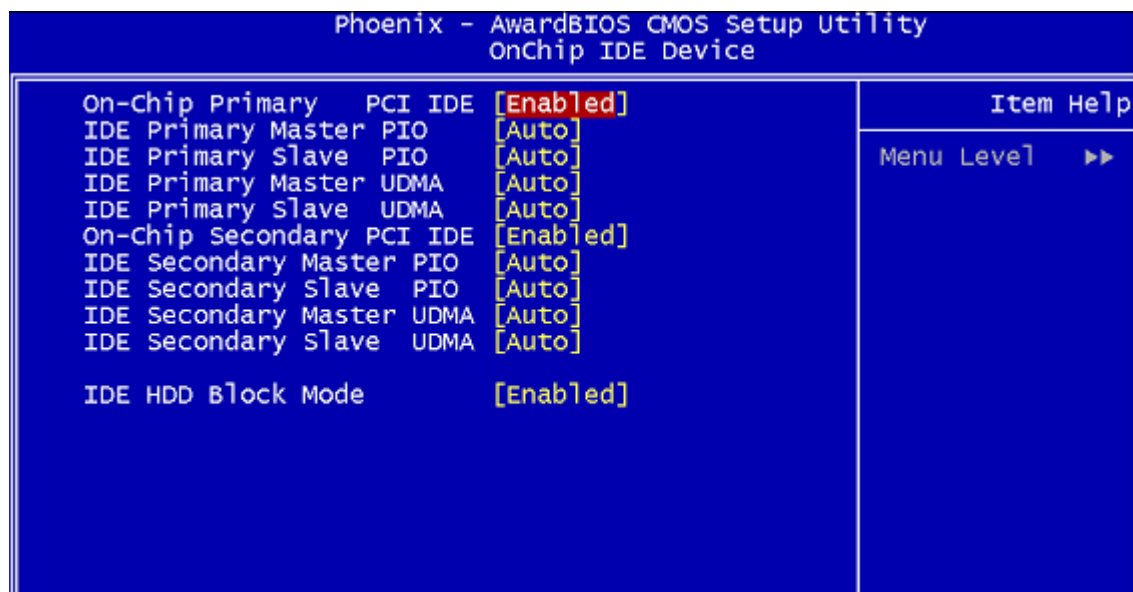


Figure 4-6-1 : BIOS- OnChip IDE Device

On-Chip IDE Device

The system chipset contains IDE HDD Block mode, and a PCI IDE interface with support for two IDE Primary (Master & Slave) PIO's and two IDE Primary (Master & Slave) UDMA's, and two IDE Secondary (Master & Slave) PIO's and two IDE Secondary (Master & Slave) UDMA's. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optional number of block read/write per sector the drive can support. The available choices are Enabled, Disabled.

4.8.2 Integrated Peripherals -- Onboard Device

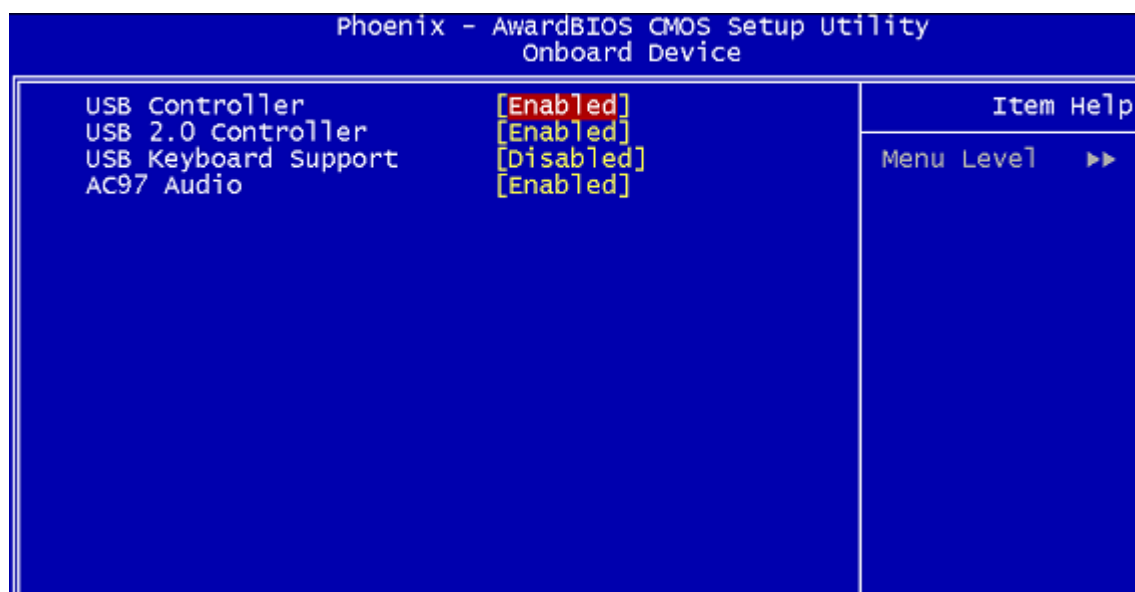


Figure 4-6-2 : BIOS- Onboard Device

USB Controller

Select Enabled if your system contains a Universal Serial Bus controller and you have USB peripherals.

USB 2.0 Controller

If BIOS itself has high speed USB support built in, the support will be automatically turn on when high speed device is attached.

USB Keyboard Support

Select Enabled if your USB controller is enabled and it needs USB keyboard support in legacy (old) OS operating systems such as DOS.

4.8.3 Integrated Peripherals -- SuperI/O Device

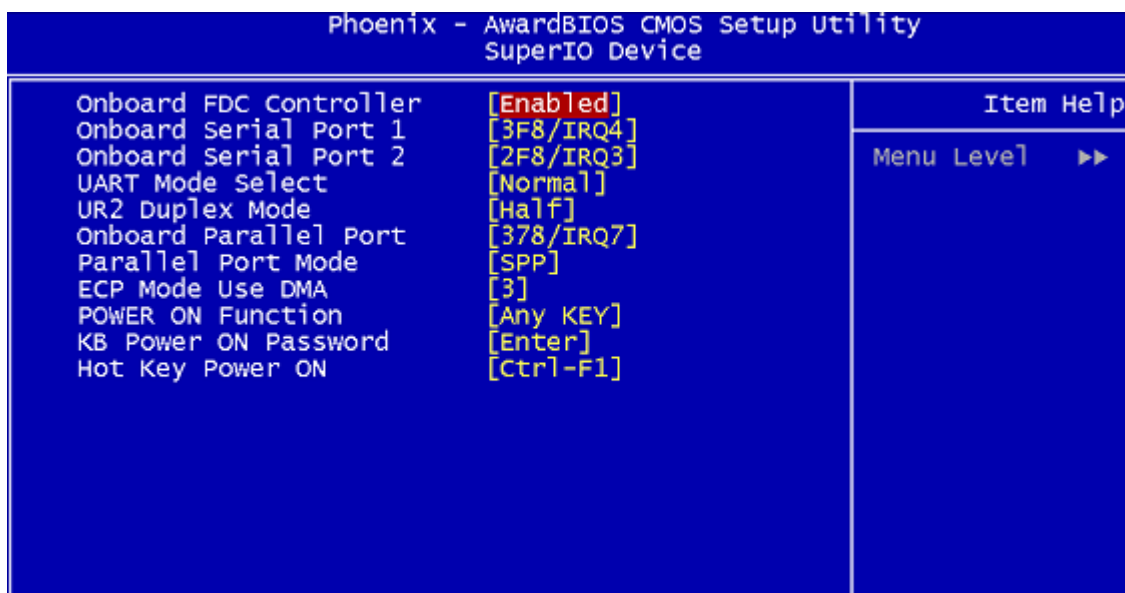


Figure 4-6-3 : BIOS- SuperI/O Device

Onboard FDC Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.

Onboard Serial Ports (1, 2)

Select an address and corresponding interrupt for the first and second serial ports. The choices: Auto, 3F8/IRQ4, 3E8/IRQ4, 2F8/IRQ3, 2E8/IRQ3, Disabled.

UART Mode Select

This item allows you to select UART mode. The choices: Normal, IrDA, ASKIR.

UR2 Duplex Mode

In an infrared port mode, this field appears. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time. Select the value required by the IR device connected to the IR port.

Onboard Parallel Port

This feature allows you to select the I/O address and IRQ for the onboard parallel port. The default I/O address of 378h and IRQ of 7 should work well in most cases. Unless you have a problem with the parallel port, you should leave it at the default settings. The choices: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, and Disabled.

Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. There are four options: SPP (Standard Parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port) and ECP+EPP.

ECP Mode Use DMA

When the on-board parallel port is set to ECP mode, the parallel port can use DMAS or DMA 1. After you have made your selections in the Integrated Peripherals setup, press the <ESC> key to go back to the main program screen.

Power ON Function

Select the different manners for powering on the system. The choices: Password, Hot Key, Mouse Move, Mouse Click, Any Key, Button Only, and Keyboard 98.

KB Power ON Password

Set a desired password here if user selects “Password” for the power on function. When the system is in soft-off mode, suspend to RAM or suspend to HDD, and then enter the correct password to start the system.

Hot Key Power ON

Select a desired hot key if user selects “Hot Key” for the power on function. When the system is in soft-off mode, suspend to RAM or suspend to HDD, and then enter the correct hot key to start the system. The choices are: Ctrl+F1, Ctrl+F2,Ctrl+F12.

4.9 Power Management

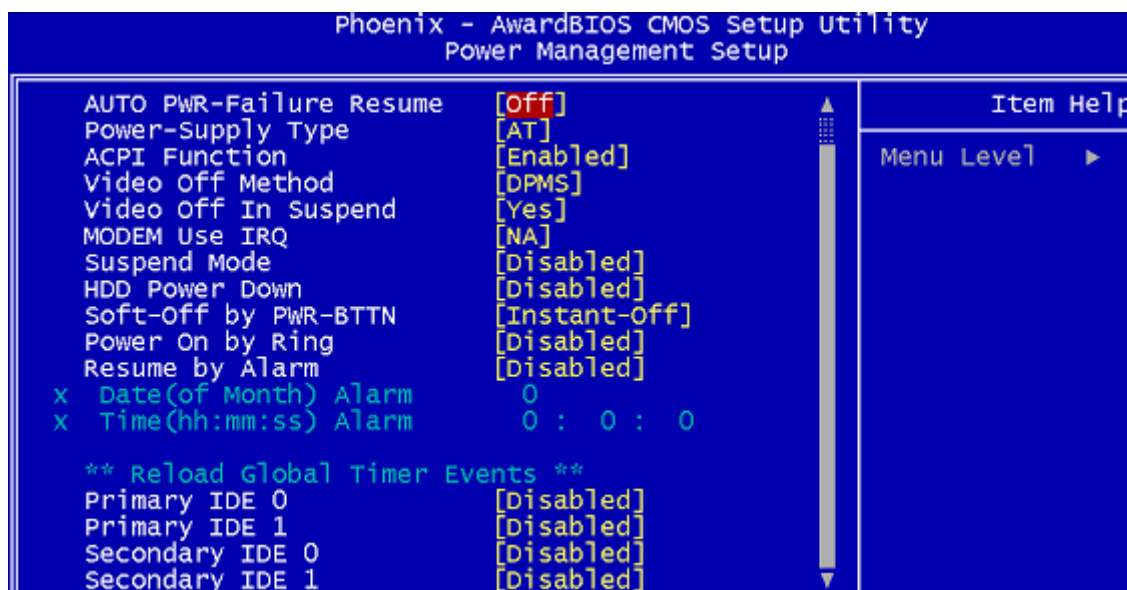


Figure 4-7 : BIOS- Power Management Setup

Auto PWR-Failure Resume

This setting specifies whether your system reboots after a power failure.

There are three selections:

Off: The system will remain off when power comes back after a power failure.

On: The system will switch on when power comes back after a power failure.

Power Supply Type

The choices: AT, ATX.

ACPI Function

The ACPI standard (Advanced Configuration and Power Interface) allows the operating system to directly check the functions of energy saving and the PnP (Plug and Play) functionality. The ACPI functions are normally activated by the BIOS. The choices are: Enabled and Disabled.

Video Off Method

This determines the manner in which the monitor is blanked. There are three choices:

1. V/H SYNC+Blank: This selection will cause the system to turn off the vertical and horizontal synchronization port and write blanks to the video buffer.
2. Blank Screen: This option only writes blanks to the video buffer.
3. DPMS Support: Select this option if your monitor supports the Display Power Management signaling (DPMS) standard of the Video Electronics Standard to select video power management values.

Video Off In Suspend

This determines the manner in which the monitor is blanked. The choices: Yes, No.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

The Choices: 3, 4, 5, 7, 9, 10, 11, NA.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off. The choices are: 1~2 min, 2~3 min,... up to 1 hour.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Soft-Off by PWRBTN (Power Button)

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system “hangs”. The available choices are Delay 4 Seconds, and Instant-Off.

Power On by Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state. The choices: Enabled, Disabled.

Resume by Alarm

When enabled, you can set the data and time at which the RTC (real-time clock) alarm awakens the system from Suspend Mode. The choices are: Enabled and Disabled.

Reload Global Timer Events

Primary IDE 0

Primary IDE 1

Secondary IDE 0

Secondary IDE 1

FDD, COM, LPT Port

PCI PIRQ[A-D]

The events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as Enabled, even when the system is in a power down mode. The choices: Enabled, Disabled.

4.10 PnP/PCI Configurations

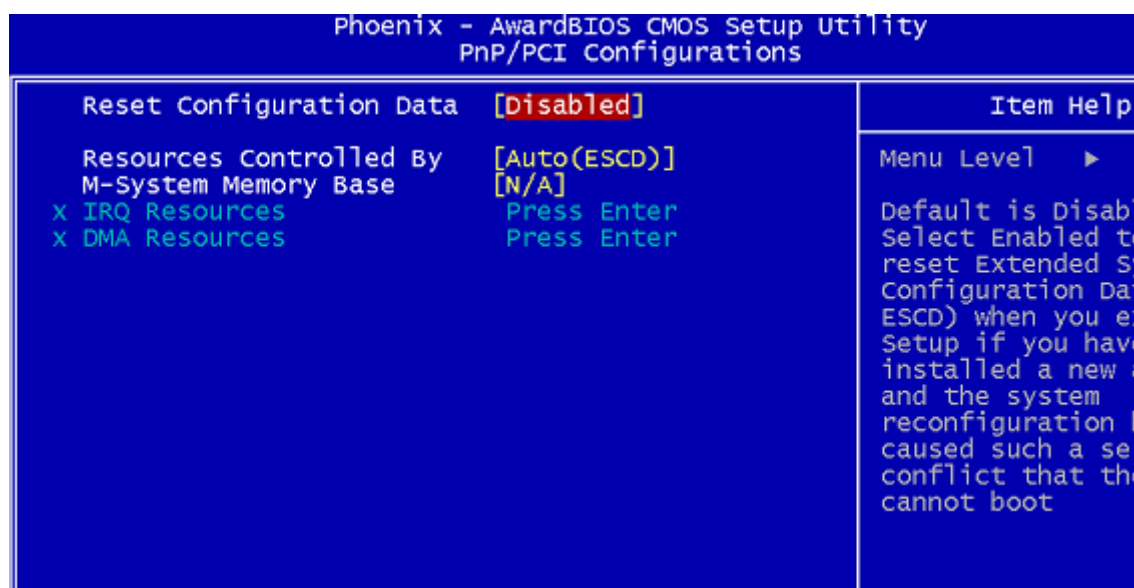


Figure 4-8 : BIOS -- PnP/PCI Configurations

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on Card and the system reconfiguration has caused such a serious conflict that the operating system cannot boot. The choices: Enabled, Disabled .

Resources Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows95. If you set this field to Manual, then choose specific resources by going into each of the submenus that follows this field. The Choice: Auto (ESCD), Manual.

M-System Memory Base

Select a base address for the 32KB memory area used by M-System that requires high memory.

4.11 PC Health Status

When a mainboard supports hardware monitoring, this item lets you monitor the parameters for critical voltages, critical temperatures, and fan speeds. These are the read-only items.

After you have read the PC Health Status, press the **<ESC>** key to go back to the main program screen.

4.12 Load Fail-Safe Defaults

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the whole setup utility. Use this option if you have changed your system and it does not operate correctly or does not power up.

4.13 Load Optimized Defaults

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the whole Setup Utility. Press the **<Y>** key and then **<Enter>** to install the defaults. Press the **<N>** key and then **<Enter>** to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press the **<F7>** key.

4.14 Set User Password

The Supervisor/User Password utility sets the password. The mainboard is shipped with the password disabled. If you want to change the password, you must first enter the current password, then at the prompt enter your new password. The password is case sensitive. You can use up to eight alphanumeric characters. Press **<Enter>** after entering the password. At the next prompt, confirm the new password by retyping it and pressing **<Enter>** again. To disable the password, press **<Enter>** instead of entering a new password when the Enter Password dialog box appears. A message appears confirming that the password has been disabled. If you have set user password, only the user password allows you to enter the BIOS Setup Program.

Note: If you forget your password, the only way to solve this problem is to discharge the CMOS memory by turning power off and placing a shunt (jumper cap) on jumper JP2 to short pin 2 and pin 3 for five seconds, then putting the shunt back to pin 1 and pin 2 of JP2.

4.15 Save & Exit Setup

Selecting this option and pressing **<Enter>** will save the new setting information in the CMOS memory and continue with the booting process.

4.16 Exit Without Saving

Selecting this option and pressing **<Enter>** will exit the Setup Utility without recording any new values or changing old ones.

Chapter 5


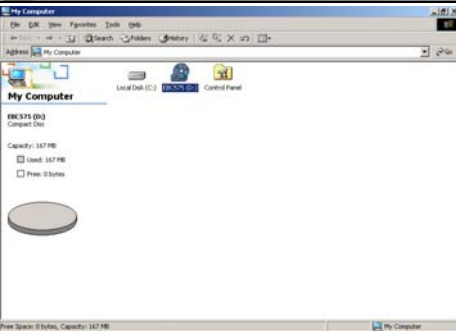
Driver Installation

The Peak736VL(2) comes with a bundled drivers CD that enables you to install Intel chipset, Intel Ata, VGA, LAN and Audio drivers. These drivers may be updated or re-versioned without any further notice. Please visit NEXCOM web site <http://www.nexcom.com.tw> frequently for new information.

Note: *The installation instructions in this manual are based on Windows 2000 operation system.*

5.1 Installation CD

Please follow the below instructions to find Intel chipset, LAN, VGA, dual LVDS, audio and 2mic_2lineout drivers in the driver CD to implement installation.

<p>Step 5.1.1</p> <p>Place the Driver CD into your CD-ROM drive. Open My Computer on your desktop.</p>	
<p>Step 5.1.2</p> <p>My computer menu appears. Double click your CD-ROM drive to open.</p>	

5.2 Installing Drivers for the Peak 736VL(2)

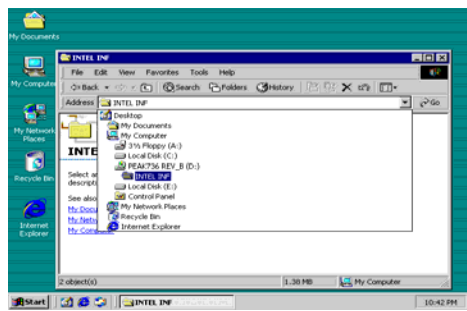
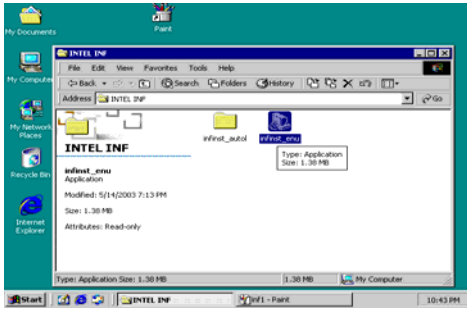
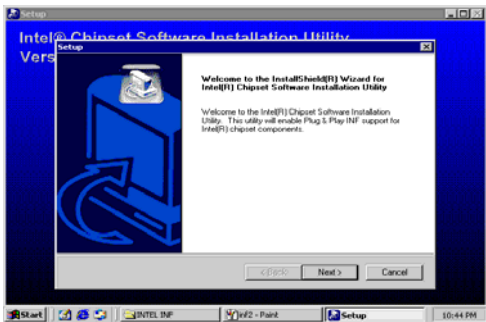
The following sections cover the drivers installation for the Peak 736VL(2):

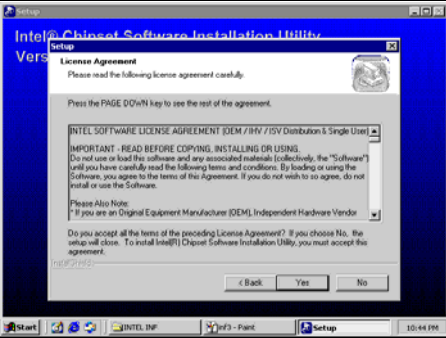
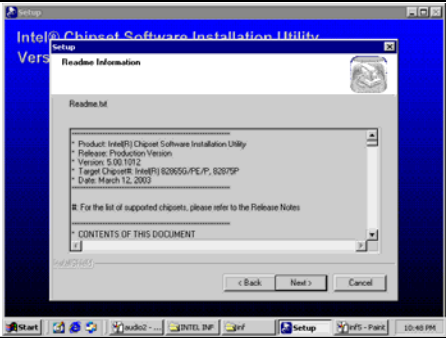
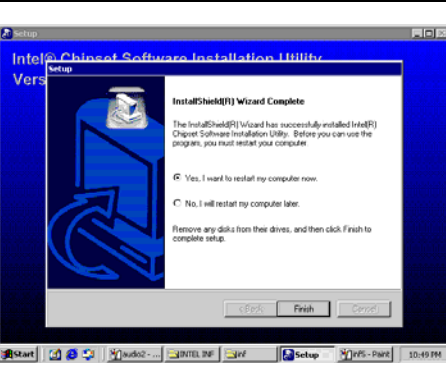
Intel Chipset	—	5.3
VGA	—	5.4
Audio	—	5.5
LAN	---	5.6
Dual LVDS	—	5.7
2 mic_2 lineout	—	5.8

Note: *You should install the Intel chipset patch and then install Intel Ata, before installing other drivers.
You may be prompted for your Windows Installation CD during setup.*

5.3 Installing Intel Chipset

The chipset patch updates the chipset and enables user to adjust the advanced chipset components.

Step 5.3.1 Point to the INF folder and double-click to open it.	
Step 5.3.2 The INF folder opens; double-click to open the infinst_enu	
Step 5.3.3 Click Next to install.	

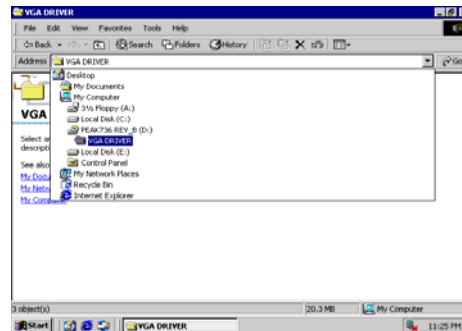
<p>Step 5.3.4</p> <p>Read the License Agreement. If you accept it, click Yes to continue.</p>	
<p>Step 5.3.5</p> <p>Read the readme file and click Next button to continue the installation process.</p>	
<p>Step 5.3.6</p> <p>The program updates your computer driver files, and you are prompted to restart your computer. Click Yes, I want to restart my computer now and then click Finish button to reboot.</p>	

5.4 Installing VGA

After installing the Intel chipset, repeat steps 5.1.1 and 5.1.2 to open the VGA folder.

Step 5.4.1

Double-click to open the **VGA** folder.



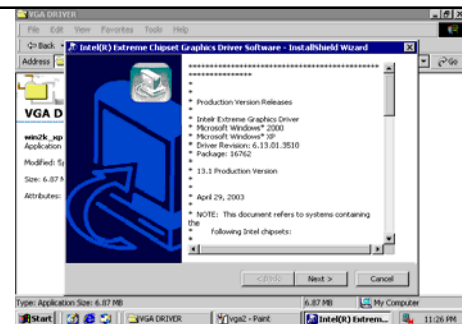
Step 5.4.2

Double click on the win2k_xp131 icon for WIN2000/XP to start the installation process.



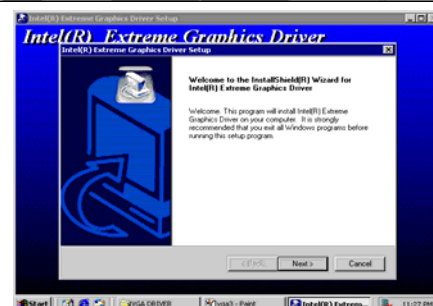
Step 5.4.3

Click **Next** to continue installation.



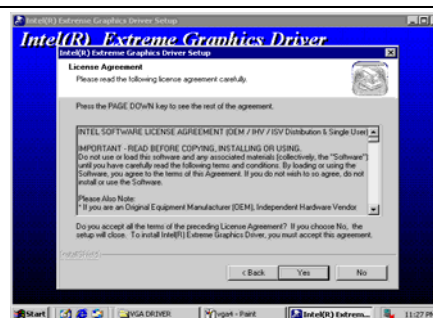
Step 5.4.4

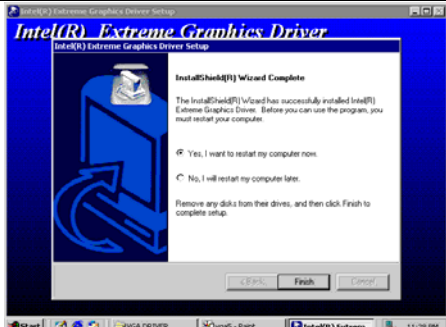
The Welcome Screen appears. Click **Next** to continue.



Step 5.4.5

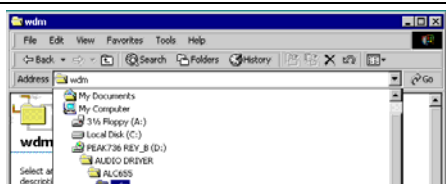
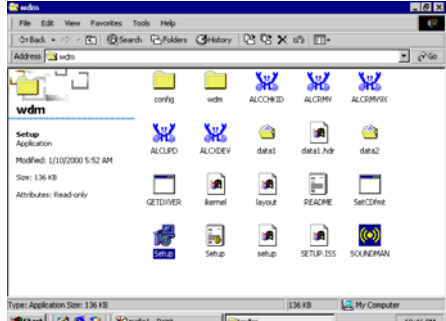
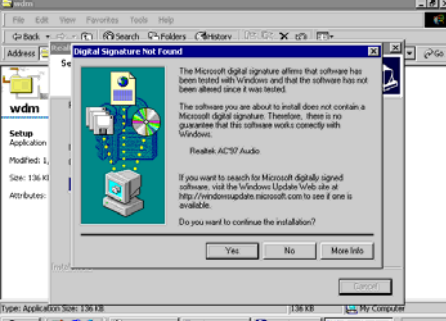
Read the License Agreement. If you agree it, click **Yes** to continue.



<p>Step 5.4.6</p> <p>The complete installation screen appears. Select Yes, I want to restart my computer now, and click Finish to reboot your computer.</p>	
--	--

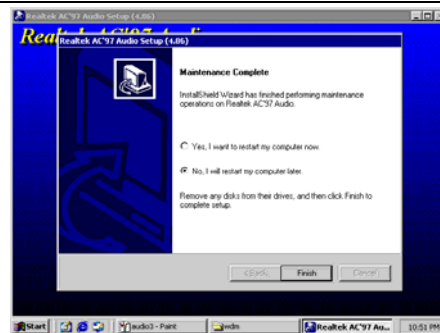
5.5 Installing the Audio Driver

For installing the Audio driver for your Peak736VL(2), repeat steps 5.1.1 and 5.1.2.

<p>Step 5.5.1</p> <p>Double click to open the Audio folder and open the wdm folder highlighted.</p>	
<p>Step 5.5.2</p> <p>Double click the Setup icon to start installation.</p>	
<p>Step 5.5.3</p> <p>To continue the installation, click Yes.</p>	

Step 5.5.4

Click **Finish** when the setup is completed.

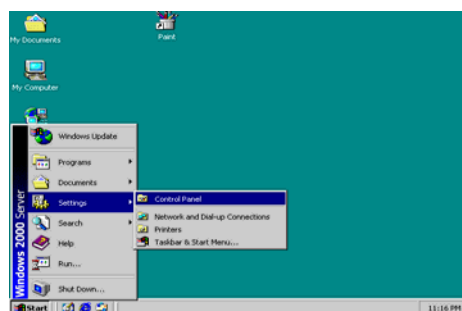


5.6 Installing the LAN

After installing the Audio driver, repeat steps 5.1.1 and 5.1.2.

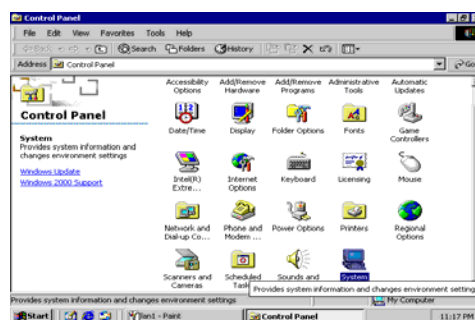
Step 5.6.1

Double click the **Control Panel** icon to open it.



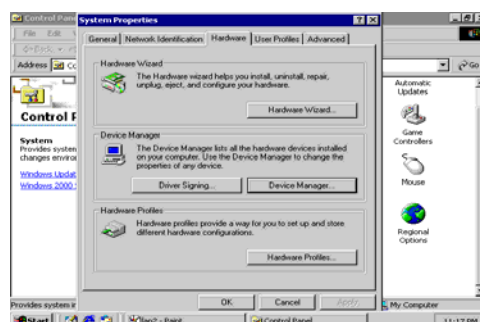
Step 5.6.2

Double click the **System** icon.



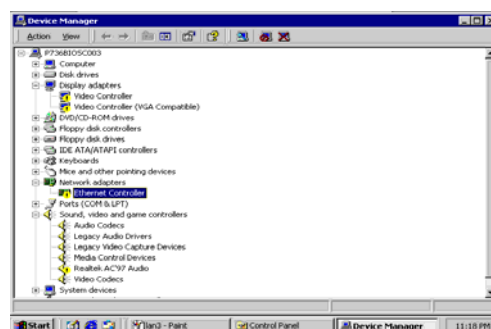
Step 5.6.3

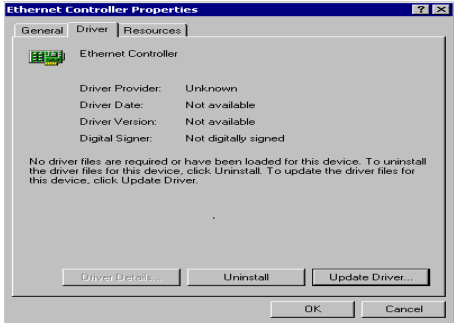


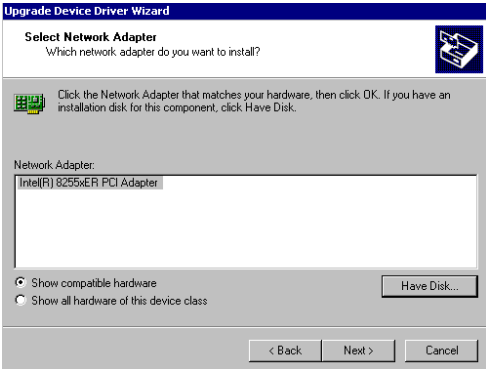
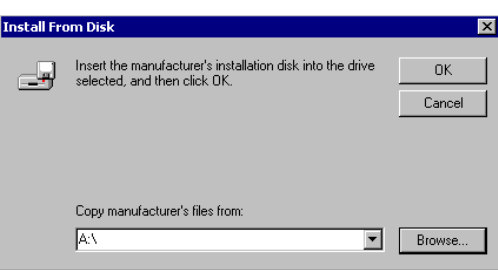
In the system properties dialog, click to open the **Hardware** page and then click **Device Manager** button on the page.

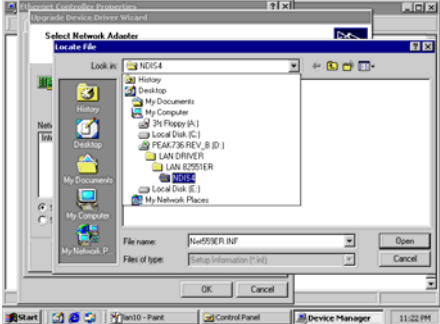
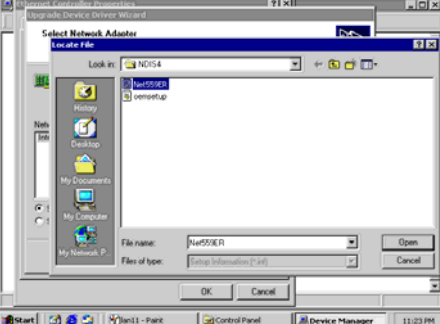
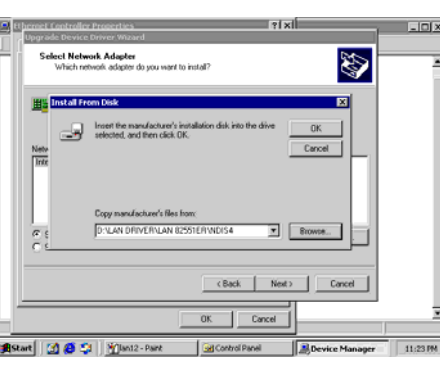
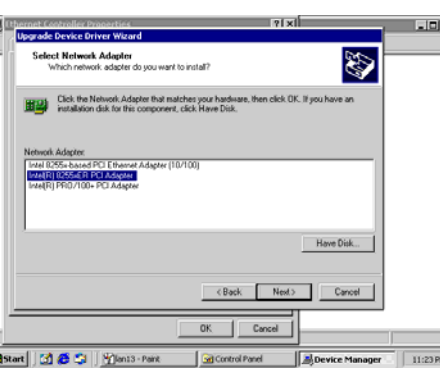



Step 5.6.4

Click on the **Network Adapters**. The system will show the network Ethernet card you are using. Double click on the **Ethernet card**

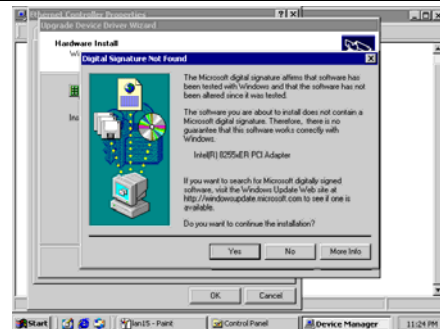


<p>Step 5.6.5</p> <p>Open the Driver page, and click Update Driver button to start the Upgrade Driver Wizard.</p>	
<p>Step 5.6.6</p> <p>Click on the Next button to continue the Upgrade Device Driver Wizard.</p>	
<p>Step 5.6.7</p> <p>Give a check to Display a list of the known drivers for this device so that I can choose a specific driver, and click Next to continue.</p>	
<p>Step 5.6.8</p> <p>Click on the Network Adapter that matches your hardware and click Have Disk.</p>	
<p>Step 5.6.9</p> <p>Insert the installation disk in the drive selected and click Browse.</p>	

<p>Step 5.6.10</p> <p>Double click the NDIS4 folder to open.</p>	
<p>Step 5.6.11</p> <p>Click on the Net559ER file.</p>	
<p>Step 5.6.12</p> <p>Insert the installation disk into the drive selected, and then click OK.</p>	
<p>Step 5.6.13</p> <p>Click on the Intel 8255xER PCI adapter, and then click Next.</p>	
<p>Step 5.6.14</p> <p>Click Next to install the driver for the Intel 8255xER PCI adapter.</p>	

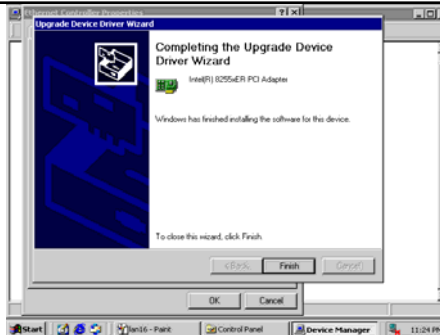
Step 5.6.15

To continue the installation, click **Yes**.



Step 5.6.16

To close this wizard, click **Finish**.

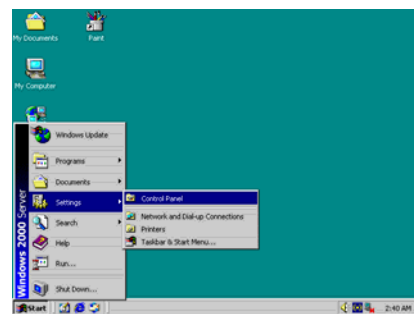


5.7 Installing the Dual LVDS

Uninstall the old VGA driver or add-on card in a safe mode; otherwise, install the VGA driver directly.

Step 5.7.1

Click the **Start** button, and go to **Settings** and choose **Control Panel** from the menu.



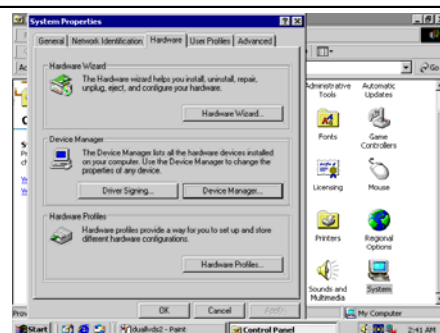
Step 5.7.2

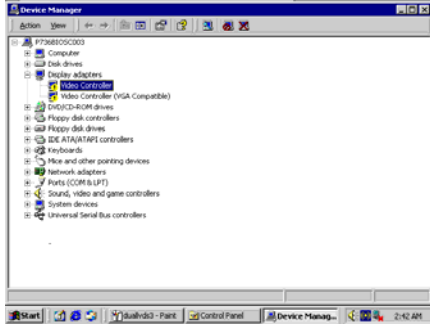


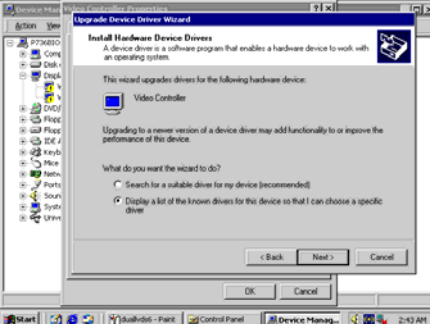
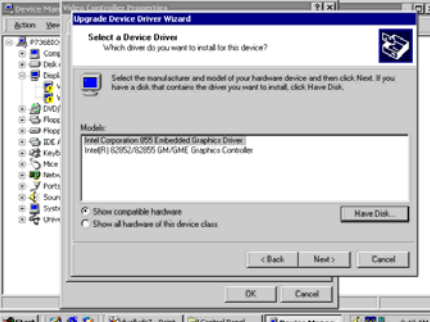
Double-click on the **System** icon to open.

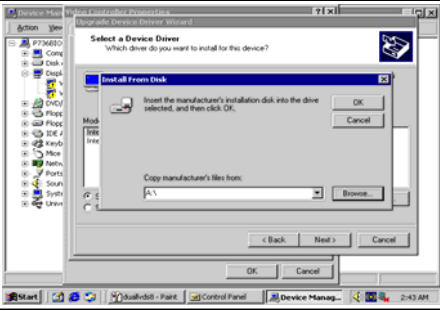
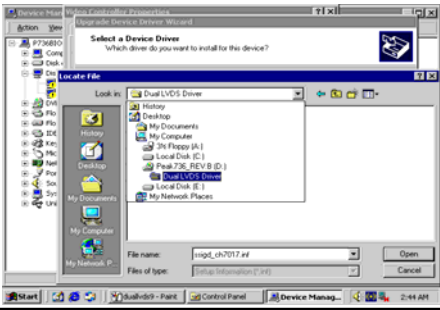
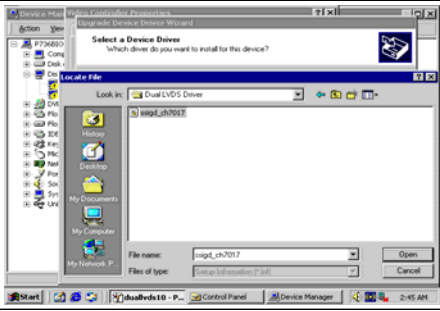
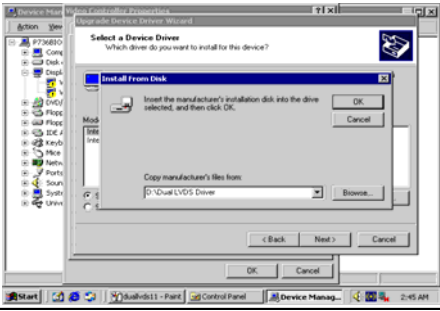
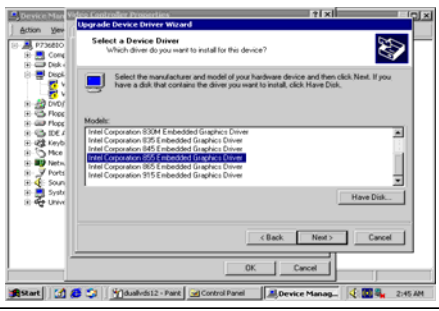


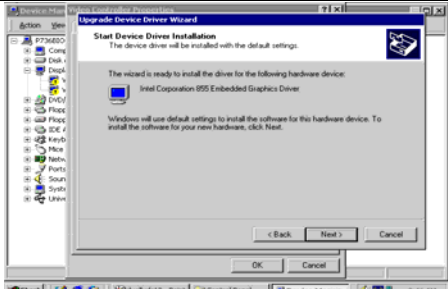

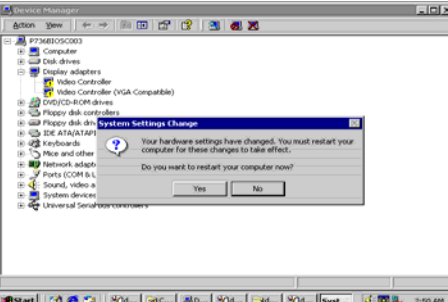
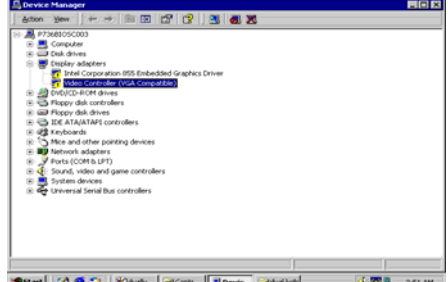
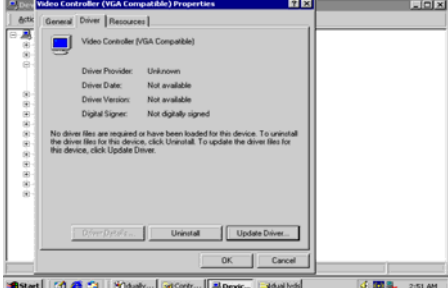
Step 5.7.3



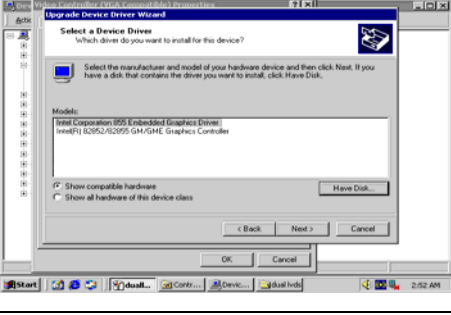
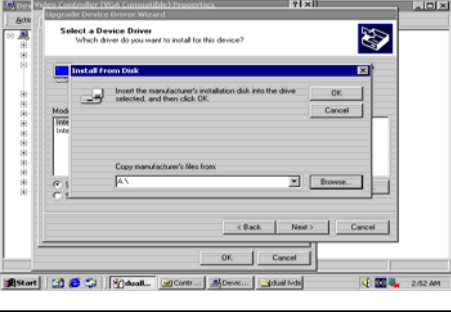

Open the **Device Manager**..

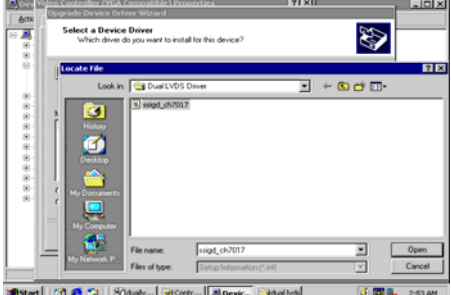
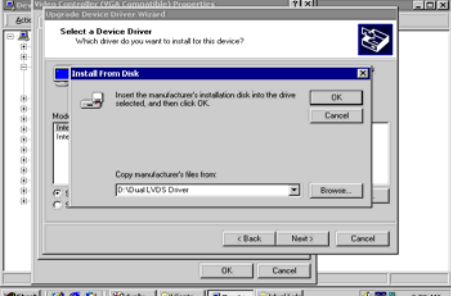
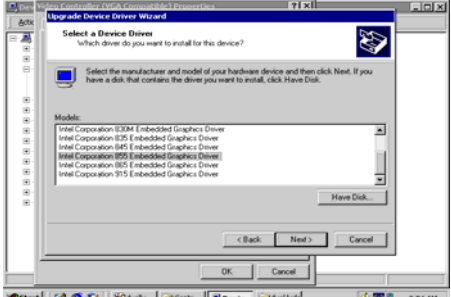
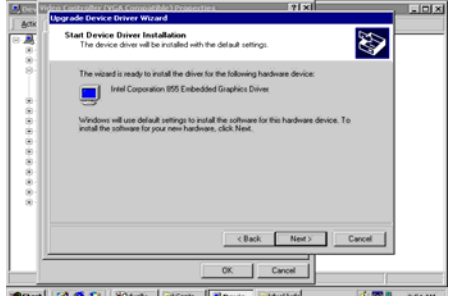
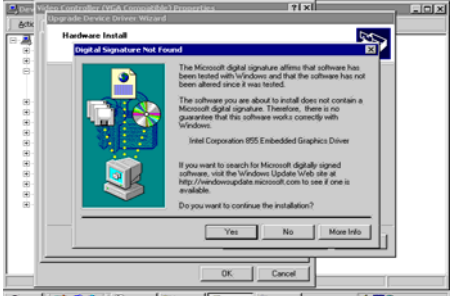
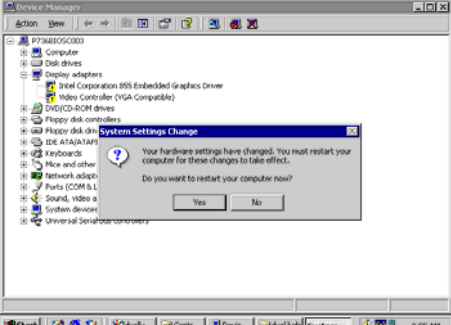


<p>Step 5.7.4</p> <p>In the Device Manager, click on P736IOSC003 and then click on Video Controller to open.</p>	
<p>Step 5.7.5</p> <p>Click Update Driver to update the driver files for this device.</p>	
<p>Step 5.7.6</p> <p>To continue upgrading a device driver for a hardware device, click Next.</p>	
<p>Step 5.7.7</p> <p>Give a check to Display a list of the known drivers for this device so that I can choose a specific driver, and then click Next.</p>	
<p>Step 5.7.8</p> <p>Click Have Disk to continue the installation.</p>	

<p>Step 5.7.9</p> <p>Make sure you have the driver CD inserted in your CD-ROM, and Click Browse to continue the installation process.</p>	
<p>Step 5.7.10</p> <p>Double-click the Dual LVDS Driver to open.</p>	
<p>Step 5.7.11</p> <p>Select ssigd_ch7017 and open it.</p>	
<p>Step 5.7.12</p> <p>Insert the installation disk into the drive selected, and then click OK.</p>	
<p>Step 5.7.13</p> <p>Select the driver you want to install and click Next.</p>	

<p>Step 5.7.14</p> <p>Click Next to start device driver installation.</p>	
<p>Step 5.7.15</p> <p>To close this wizard, click Finish,</p>	
<p>Step 5.7.16</p> <p>Click No for not restarting your computer now.</p>	
<p>Step 5.7.17</p> <p>Now go back to the Device Manager and click on Video Controller (VGA Compatible).</p>	
<p>Step 5.7.18</p> <p>To update the driver files for this device, click Update Driver.</p>	

<p>Step 5.7.19</p> <p>Click Next to continue.</p>	
<p>Step 5.7.20</p> <p>Give a check to Display a list of the known drivers for this device so that I can choose a specific driver, and click Next.</p>	
<p>Step 5.7.21</p> <p>Select your hardware device and click Have Disk.</p>	
<p>Step 5.7.22</p> <p>Insert the installation disk into the drive selected, and then click Browse...</p>	
<p>Step 5.7.23</p> <p>Double-click Dual LVDS Driver to open.</p>	

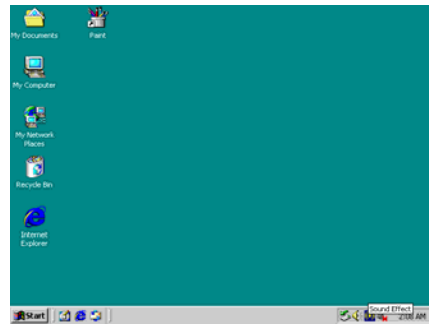
<p>Step 5.7.24</p> <p>Click on ssigd_ch7017 to open.</p>	
<p>Step 5.7.25</p> <p>Insert the installation disk into the drive selected, and then click OK.</p>	
<p>Step 5.7.26</p> <p>Select your hardware device and click Next.</p>	
<p>Step 5.7.27</p> <p>To continue, click Next.</p>	
<p>Step 5.7.28</p> <p>Click Yes if you want to continue the installation.</p>	
<p>Step 5.7.29</p> <p>Restart your computer if you want these changes to take effect.</p>	

5.8 Installing the 2 Mic and 2 Lineout

After installing the dual LVDS driver, repeat steps 5.1.1 and 5.1.2.

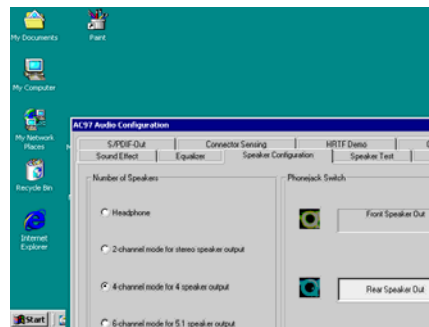
Step 5.8.1

Go to the desktop.



Step 5.8.2

Choose AC97 Audio Configuration that suits you.



Appendix

Appendix A : Watchdog Timer Setting

A.1 Watchdog Timer Working Procedure

Watchdog Timer (WDT) is a special hardware device that monitors the computer system during normal operation. WDT has a clock circuit that times down from a set number to zero. If a monitored item occurs before the timer reaches zero, WDT resets and counts down again. If for some reason the monitored item doesn't occur before the timer reaches zero, WDT performs an action, such as a diagnostic operation (rebooting the computer).

You must enter timer values into WDT Configuration Register (Write the control value to the Configuration Port), and clear WDT counter (read the Configuration Port).

WDT Configuration port	F2	Default at F2
Watch Dog Timer	Disabled	1. Default at disabled
	Enabled	2. Enabled for user's programming
WDT Active Time	1 sec 2 sec 4 sec 8 sec 16 sec 32 sec 64 sec 128 sec	Default at 128 sec

Table A-1 : Watchdog Timer Character and Function

A.2 Watchdog Timer Control Register

The Watchdog Timer Control Register controls the WDT working mode. Write the value to the WDT Configuration Port. The following table describes the Control Register bit definition:

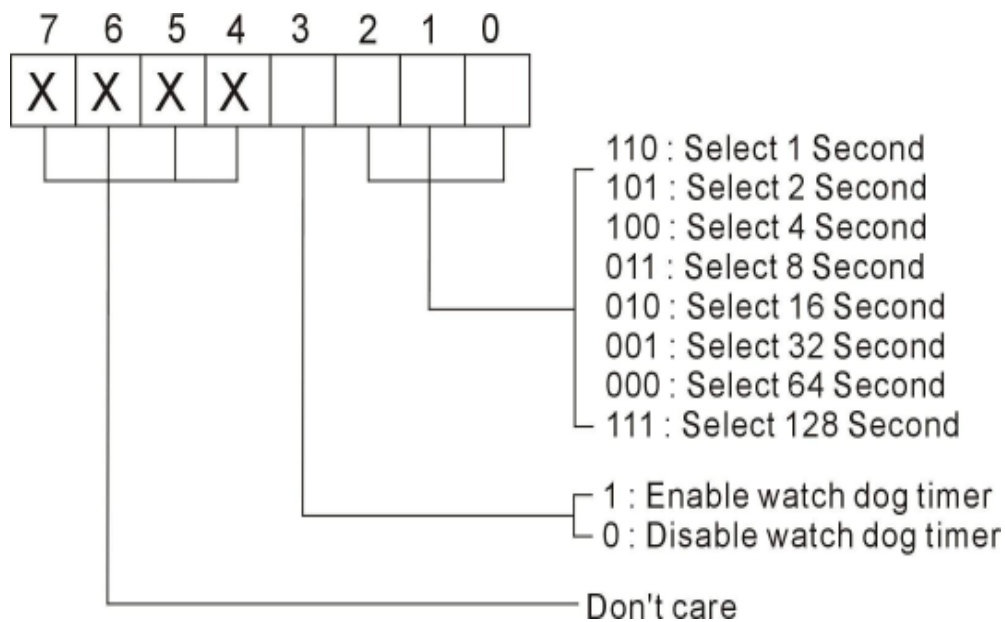


Table A-2 : WDT Control Register Bit Definition

A.3 Watchdog Timer Programming Procedure

A.3.1 Power On or Reset the System

The initial value of WDT Control Register (D3~D0) is zero (0), when power is on or the system has been reset. The following table indicates the initial value of WDT (00000000b) :

Bit	Value	Mean
3	0	Disable Watchdog Timer
2, 1, 0	0 0 0	Select 128 second

Table A-3 : WDT Control Register Initial Value

A.3.2 Clear the WDT

WDT counter interval cannot be longer than the preset time, otherwise, WDT sends a reset signal to the system.

The following is an example of clearing the WDT program in Intel 8086 assembly language.

```
; ( Clear the WDT)
Mov  dx, F2h ;Setting the WDT configuration port
In   al, dx
```

Note: Before running WDT, you must clear WDT to ensure that the initial value is zero.

A.3.3 WDT Control Register

Note: This register writes to WDT configuration port.

Set WDT Control Register to control the WDT working mode. The initial value of WDT Control Register is shown as follows:

```
; (Setting the WDT Control Register as AL)
Mov  al, 0h ; Setting initial value = 0 for the WDT Control Register
```

Follow these instructions to set the register:

1. Select the time-out intervals of WDT (decide the values of D2, D1, D0 in F2)

Example: If D2~D0 = 0, the time-out interval is 64 seconds.

```
AND    al, 11111000b ; Setting the time-out interval as 64 sec.
```

2. Enable or Disable WDT (decide D3 value in F2)

i.e. D3=0, Disables WDT

```
AND    al, 11110111b ; Disable the WDT
```

i.e. D3=1, Enables WDT

OR al, 00001000b ; Enable the WDT
--

After finishing the above settings, you must output the Control Register's value to WDT Configuration Port. Then WDT will start according to the above settings.

MOV dx, F2h ; Setting WDT Configuration Port
OUT dx, al ; Output the Control Register Value

Appendix B Programming the GPIO

GPIO (General Purpose Input/Output) pins are provided for custom system design. This appendix provides definitions and its default setting for the ten GPIO pins in the Peak 736 series. The pin definition is shown in the following table:

Pin No.	GPIO mode	PowerOn Default	Address	Pin No.	GPIO mode	PowerOn Default	Address
1	GPI 0	Read High	801H (4)	2	GPO 0	High	801H (0)
3	GPI 1	Read High	801H (5)	4	GPO 1	High	801H (1)
5	GPI 2	Read High	801H (6)	6	GPO 2	High	801H (2)
7	GPI 3	Read High	801H (7)	8	GPO 3	High	801H (3)

Table A-4 – GPIO Connector

- 1) Read the GPI Pin (1/3/5/7) status form I/O port 801H bit (4/5/6/7).

The bit is Set/Clear indicated High/Low

For example: set GPI Pin (1/3/5/7) output = high, then bit4~bit7 of al will be at GPI0`GPI3

```
mov    dx,801H
in      al,dx
and     al,not 00001111b
```

- 2) Control the GPO pin (2/4/6/8) level from I/O port 801H bit (0/1/2/3).

The bit is Set/Clear indicated output High/Low

For example: set GPI Pin (2/4/6/8) output = high

```
mov     dx,801H
in      al,00001111b
out     dx,al
```

Note: *All of these GPIO pins are 8mA digital open-drain buffer and internal pull-up.*