

WAFER-C800EV
VIA® C3 Processor CPU Board with
10/100Mb LAN & VGA
Ver1.0

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Introduction

The WAFER-C800EV ATX/AT main board is a high-performance computer mainboard based on the VIA[®] TwisterT PN133T VT8606 and VT8231 chipset. It is designed for VIA[®] C3 processor, making it ideal for cost-effective CPU board markets.

The VIA[®] TwisterT PN133T (VT8606) is a VIA[®] C3 processor system logic north bridge with the addition of 133 MHz capability for both the CPU and SDRAM interfaces. VIA[®] TwisterT PN133T may be used to implement both desktop and notebook personal computer systems from 100MHz to 133MHz based on C3 (EBGA packing). The primary features of the VIA[®] TwisterT PN133T-North Bridge are: VIA[®] C3 CPU (Front Side Bus) Interface (100 / 133MHz), SDRAM Memory Interface (100 / 133MHz), 32-bit PCI with Integrated 2D / 3D graphics accelerator.

The VT8231 PSIPC (PCI Super-I/O Integrated Peripheral Controller) is a high integration, high performance, power-efficient, and high compatibility device that supports both Intel and non-Intel based processors to PCI bus bridge functionality, ensuring a complete Microsoft PC99-compliant PCI/ISA system.

1.1 Specifications :

- VIA® C3 EBGGA packing
- **DMA channels:** 7
- **Interrupt levels:** 15
- **Chipset:** VIA® VT8606 (Integrated 2D / 3D graphics accelerator.) & VT8231
- **RAM memory:** One SO-DIMM sockets . Maximum memory is 512MB.
- **Ultra ATA/33/66/100 IDE Interface :** Two PCI Enhance IDE hard drives. The south bridge VT8231 supports Ultra ATA/33/66/100 IDE interface.
- **One high speed Series ports :** NS16C550 compatible UART's
- **Bi-directional Parallel Port :** IEEE1284 compatible
- **IrDA port :** Supports fast Infrared function (FIR)
- **USB port :** Equipped with four USB ports for future expansion.
- **Fast Ethernet Multifunction PCI Controller :** IEEE 802.3u Auto-Negotiation support for 10BASE-T/100BASE-TX standard. Fast back-to-back transmission support with minimum interframe spacing. Connected to your LAN via RJ45 connector.
- **Keyboard connector & PS/2 Mouse Port on-board**
- **Power Consumption :** +5VSB @ 180mA, +5V @ 3.8A, +12V @ 170mA (C3-800MHz with 128MB SO-DIMM, Windows2000)
- **Operating Temperature :** 0° ~ 55° C (CPU needs Cooler)

1.2 WAFER-C800EV package contents

In addition to this *User's Manual*, the WAFER-C800EV package includes the following items:

- WAFER-C800EV Single Board Computer x 1
- IDE HDD DMA66 Cable x 1
- IDE HDD 2.0mm to 2.54mm Cable x 1
- Print Cable x 1
- RS-422/485 Cable x 1
- Audio Cable x 1
- Y Cable x 1
- CD-ROM Driver x 1

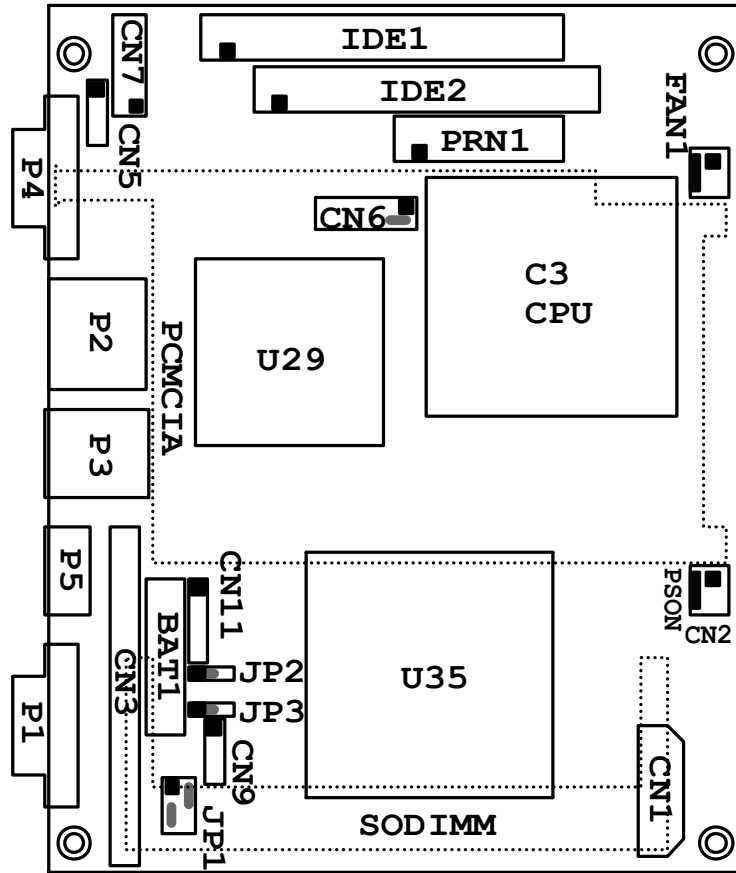
If any of these items are missing or damaged, please contact the dealer from whom you purchased the product. Be sure to save the shipping materials and carton in case you want to ship or store the product in the future.

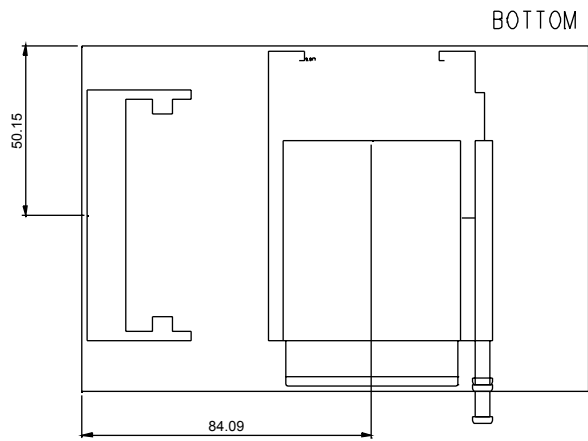
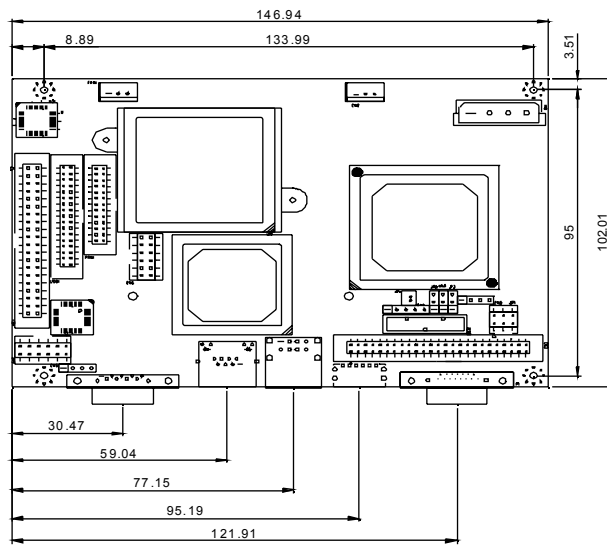
2

Installation

This chapter describes how to install the WAFER-C800EV. First a layout diagram of the WAFER-C800EV is shown, followed by unpacking information that should be carefully followed. The jumpers and switch settings for the WAFER-C800EV configuration, such as CPU type selection, system clock setting, and watchdog timer, are also listed.

2.1 Layout Diagram & Dimensions

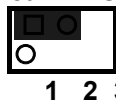




2.2 Clear CMOS Setup

To clear the CMOS Setup (for example if you have forgotten the password, you should clear the CMOS and then re-set the password), you should close the JP3 (2-3) for about 3 seconds, then open it once more. This will set back to normal operation mode.

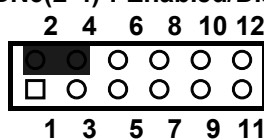
- **JP3 : Clear CMOS Setup**



JBAT1	DESCRIPTION
1-2 (default)*	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

2.3 Buzzer Function Setting

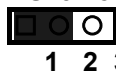
- **CN6(2-4) : Enabled/Disabled Onboard Buzzer Function**



2 - 4	DESCRIPTION
SHORT *	Enabled
OPEN	Disabled

2.4 RS232 or RS422/485 Selection

- **JP2 : RS232 or RS422/485 Selection**

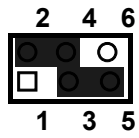


JP2	DESCRIPTION
1-2 Short	RS232
2-3 Short	RS422/485

Caution: *If RS422/485 is in use, the COM port on the main board would be disable.*

2.5 TFT LCD Setting

- JP1: TFT LCD type (5V / 3V & FPCLK / #FPCLK) Setting



JP1	DESCRIPTION
2 - 4	3V TFT LCD
4 - 6	5V TFT LCD
1 - 3	#FPCLK
3 - 5	FPCLK

3

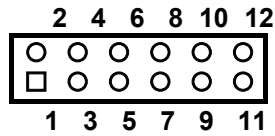
Connection

This chapter describes how to connect peripherals, switches and indicators to the WAFER-C800EV board.

3.1 Audio Connectors

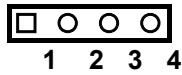
The onboard AC'97 CODEC supports several audio functions. The audio connectors are described below.

CN7:



PIN	DESCRIPTION	PIN	DESCRIPTION
1	EAR OUT (LEFT)	2	EAR OUT (RIGHT)
3	GROUND	4	GROUND
5	LINE OUT (LEFT)	6	LINE OUT (RIGHT)
7	LINE IN (LEFT)	8	LINE IN (RIGHT)
9	GROUND	10	GROUND
11	MIC IN	12	GROUND

CN5:



PIN	DESCRIPTION
1.	CD SIGNAL (LEFT)
2.	GROUND
3.	GROUND
4.	CD SIGNAL (RIGHT)

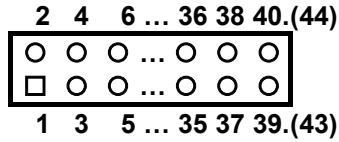
3.2 PCI E-IDE Disk Drive Connector

You can attach up to four IDE(Integrated Device Electronics) devices.

IDE1 : Primary IDE Connector (40pin 2.54mm)

IDE2 : Secondary IDE Connector (44pin 2.0mm)

• **IDE1 & IDE2 : IDE Interface Connector**

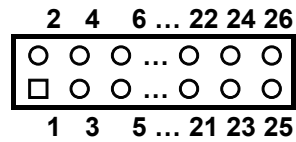


PIN	DESCRIPTION	PIN	DESCRIPTION
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	CHRDY	28	REV. PULL LOW
29	DACK	30	GROUND-DEFAULT
31	INTERRUPT	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND
41	+5V(IDE2)	42	+5V(IDE2)
43	GND(IDE2)	44	N/C(IDE2)

3.3 Parallel Port

Usually, a printer is connected to the parallel port. The WAFER-C800EV includes an on-board parallel port, accessed via a 26-pin flat-cable connector PRN1.

• **PRN1 : Parallel Port Connector**



PIN	DESCRIPTION	PIN	DESCRIPTION
1	STROBE#	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED #
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT LN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	GROUND	24	GROUND
25	GROUND	26	NC

3.4 USB Port Connectors

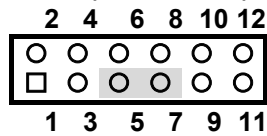
The WAFER-C800EV is equipped with two USB(Version. 1.1) ports for the future new I/O bus expansion.

P3 : 2 ports USB Connector

PIN	DESCRIPTION	PIN	DESCRIPTION
1.	VCC	5.	VCC
2.	DATA0-	6.	DATA1-
3.	DATA0+	7.	DATA1+
4.	GROUND	8.	GROUND

3.5 Power Button Switch

CN6 : 2 Pin(Pin5 & Pin7) Power Button Switch



PIN	DESCRIPTION
5	ATX SW Pin1
7	ATX SW Pin2

3.6 Serial Ports

The WAFER-C800EV offers two high speed NS16C550 compatible UART's with 16-byte Read/Receive FIFO serial ports.

- **P4 : Serial Port 9-pin D-Type Connector**

PIN	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	RECEIVE DATA (RXD)
3	TRANSMIT DATA (TXD)
4	DATA TERMINAL READY (DTR)
5	GROUND (GND)
6	DATA SET READY (DSR)
7	REQUEST TO SEND (RTS)
8	CLEAR TO SEND (CTS)
9	RING INDICATOR (RI)

3.7 Keyboard/Mouse Connector

The WAFER-C800EV has a 6-pin DIN keyboard/mouse connector and a 5-pin keyboard connector..

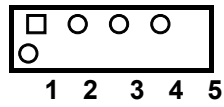
- **P5 : 6-pin DIN Keyboard/Mouse Connector**

PIN	DESCRIPTION
1	KEYBOARD DATA
2	MOUSE DATA
3	GROUND
4	+5V
5	KEYBOARD CLOCK
6	MOUSE CLOCK

3.8 IrDA Infrared Interface Port (Option)

The WAFER-C800EV comes with an integrated IrDA port which supports either a Fast Infrared(FIR) interface.

- **CN11 : IrDA connector**

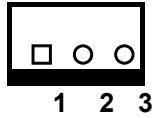


PIN	DESCRIPTION
1	VCC
2	IR-RX2
3	IR-RX
4	Ground
5	IR-TX

3.9 Fan Connector

The WAFER-C800EV also has a CPU with cooling fan connector and chassis fan connector, which can supply 12V/500mA to the cooling fan. There is a “rotation” pin in the fan connector, which transfers the fan’s rotation signal to the system BIOS in order to recognize the fan speed. Please note that only specific fans offer a rotation signal.

- **FAN1 : CPU Fan Connector**



PIN	DESCRIPTION
1	Ground
2	+12V
3	Rotation Signal

3.10 VGA Connector

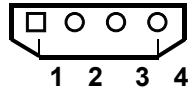
- **P1 : 15-pin Female Connector**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GROUND	6	GROUND
7	GROUND	8	GROUND
9	VCC / NC	10	GROUND
11	NC	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDCCLK		

3.11 Power Connector

The WAFER-C800EV is equipped with one standard power connector

- **CN1: 4-pin Connector**

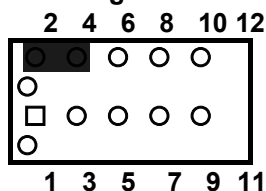


PIN	DESCRIPTION
1	+12V
2	GND
3	GND
4	+5V

3.12 External Switches and Indicators

There are several external switches and indicators for monitoring and controlling your CPU board. All functions are in the CN4 connector.

CN6 Pin Assignment and Functions :

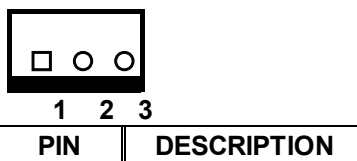


FUNCTION	PIN	DESCRIPTION	
SPEAKER	2	SPK SIGNAL	Jump for Buzzer
	4	Buzzer-	
	6	NC	
	8	VCC	
RESET	10	RESET	
	12	GROUND	
HDD LED	9	IDE_LED+	
	11	IDE_LED-	
POWER LED	1	LED+	
	3	LED-(GROUND)	
PS On SW	5	GROUND	
	7	PSON	

3.13 PS-ON Connector

This connector is used to control the ATX power supply.

- CN2 : PS-ON Connector



1	Ground
2	PS-ON
3	+5V Standby

3.14 LAN RJ45 Connector

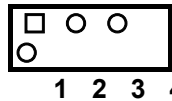
The WAFER-C800EV is equipped with Ethernet Controllers 10/100Mbps, which are connected to the LAN via an RJ45 LAN connector. The pin assignments are as follows:

- P2 LAN1 RJ45 Connector (10/100)

PIN	DESCRIPTION	PIN	DESCRIPTION
1	TX+	7	N/C
2	TX-	8	N/C
3	RX+	9	Speed +
4	N/C	10	Speed -
5	N/C	11	Active/LINK +
6	RX-	12	Active/LINK -

3.15 RS422 / 485 Connectors

CN9:



PIN	DESCRIPTION
1	TX+
2	TX-
3	RX+
4	RX-

3.16 TFT LCD Connector

The WAFER-C800EV is equipped with TFT LCD (50pin 2.0mm) Controllers , which are connected to the LCD via an CN3 connector. The pin assignments are as follows:

- **CN3 TFT LCD Connector**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	N/C	2	FP33
3	FP34	4	FP31
5	FP35	6	FP32
7	FP30	8	FP28
9	FP29	10	FP27
11	FP25	12	FP26
13	FP24	14	FP21
15	FP23	16	FP22
17	FP16	18	FP20
19	FP17	20	FP18
21	FP19	22	FP14
23	FP13	24	FP12
25	FP15	26	FP11
27	FP7	28	FP10
29	+LCD	30	+LCD
31	FP9	32	FP8
33	FP4	34	FP6
35	FP3	36	FP5
37	FP2	38	FP1
39	FPDEN	40	FP0
41	FPCLK	42	VEEON
43	ENVDD	44	FPVS
45	ENVEE	46	FPHS
47	GND	48	GND
49	+12V	50	+12V

4

BIOS Setup

4.1 Introduction

This chapter discusses the Setup program built into the BIOS, which allows users to configure the system. This configuration is then stored in battery-backed CMOS RAM so that Setup information is retained whilst the power is off.

4.2 Starting Setup

The BIOS is immediately active when you turn on the computer. While the BIOS is activated, the Setup program can be entered in one of two ways:

1. By pressing immediately after switching the system on, or
2. by pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

Press DEL to run SETUP.

4.3 Setup Summary

Standard CMOS Setup:

Standard CMOS Setup to change time, date, hard disk type, etc.

Advanced CMOS Setup:

Advanced CMOS Setup to configure system options.

Advanced Chipset Setup:

Advanced Chipset Setup to configure chipset features.

Power Management Setup:

Power Management Setup to configure power management features.

PCI / Plug and Play Setup:

Configures PCI / Plug and Play features.

Peripheral Setup:

Configures peripheral features.

Hardware Monitor Setup:

Configures hardware monitor features.

Auto-Detect Hard Disks:

Selecting these options allow the user to configure the drive named in the option. Select Auto-Detect Hard Disks to allow AMIBIOS to automatically configure the drive. A list of drive parameters the appears on the screen.

Change User Password:

Change the user password.

Change Supervisor Password:

Change the supervisor password.

Auto Configuration with Optimal Settings:

Load configuration settings that ensure the highest performance.

Auto Configuration with Fail Safe Settings:

Load fails-afe configuration settings.

Save Settings and Exit:

Write the current settings to CMOS and exit.

Exit Without Saving:

Exit without saving the current settings.

4.4 Main Menu Selections

AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.52 (C)2001 American Megatrends, Inc. All Rights Reserved
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup PCI / Plug and Play Setup Peripheral Setup Hardware Monitor Setup Auto-Detect Hard Disks Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Auto Configuration with Fail Safe Settings Save Settings and Exit Exit Without Saving
Standard CMOS Setup for changing time, date, hard disk type, etc. ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

Figure 1: The Main Menu

4.5 Standard CMOS Setup Selections

AMIBIOS SETUP - STANDARD CMOS SETUP (C)2001 American Megatrends, Inc. All Rights Reserved	
Date (mm/dd/yyyy): Tue Mar 19, 2002	Base Memory: 639 KB
Time (hh/mm/ss) : 17:18:10	Extd Memory: 247 MB
Floppy Drive A: Not Installed	
Floppy Drive B: Not Installed	
	LBA Blk PIO 32Bit
Type	Size Cyln Head WPcom Sec Mode Mode Mode
Pri Master: Auto	On
Pri Slave : Auto	On
Sec Master: Auto	On
Sec Slave : Auto	On
Boot Sector Virus Protection	Disabled
Month: Jan - Dec	ESC:Exit ↑↓:Sel
Day: 01 - 31	PgUp/PgDn:Modify
Year: 1980 - 2099	F1:Help F2/F3:Color

Figure 2: Standard CMOS Setup

Floppy A, B

Move the cursor to these fields and select the floppy type.

Primary/Secondary Master/Slave LBA Mode

LBA(Logical Block Addressing) is a new IDE HDD access method developed to overcome the 528-megabyte capacity bottleneck. If your IDE hard disk capacity is greater than 528MB, AMIBIOS can enable this LBA mode feature. The option is only for Primary Master IDE LBA mode.

Primary/Secondary Master/Slave Block Mode

If your hard disk drive supports IDE block transfer mode, enable this option for a faster IDE hard disk drive transfer rate. The option is only for Primary Master Block mode.

Primary/Secondary Master/Slave PIO Mode

This option enables Primary Master IDE PIO mode on the IDE, which can set proper cycle timings. The cycle timing between the IDE PIO mode value and IDE cycle timing is shown below :

Mode 0 -> Timing (600ns)	Mode 1 -> Timing (383ns)
Mode 2 -> Timing (240ns)	Mode 3 -> Timing (180ns)
Mode 4 -> Timing (120ns)	Mode 5 -> Timing (60ns)

Primary/Secondary Master/Slave 32Bit Mode

This option enables Primary Master IDE 32-bit data transfers on the IDE data port. If disabled, 16-bit data transfer is used by the BIOS. 32-bit data transfers can only be enabled if IDE prefetch mode is also enabled.

Boot Sector Virus Protection

When this option is enabled, AMIBIOS issues a warning when any program or virus issues a Disk Format command or attempts to write to the boot sector of the hard disk drive. The settings are Disabled, Enabled.

4.6 Advanced CMOS Setup Selections

AMIBIOS SETUP - ADVANCED CMOS SETUP		
(C)2001 American Megatrends, Inc. All Rights Reserved		
Quick Boot	Enabled	Available Options: Disabled > Enabled
1st Boot Device	Disabled	
2nd Boot Device	Disabled	
3rd Boot Device	Disabled	
Try Other Boot Devices	Yes	
S.M.A.R.T. for Hard Disks	Disabled	
BootUP Num-Lock	On	
Floppy Drive Swap	Disabled	
Floppy Drive Seek	Disabled	
PS/2 Mouse Support	Enabled	
System Keyboard	Present	
Primary Display	VGA/EGA	
Boot To OS/2	No	
Wait For 'F1' If Error	Enabled	
Hit 'DEL' Message Display	Enabled	
CPU MicroCode Updation	Enabled	
L1 Cache	Enabled	
L2 Cache	Enabled	ESC:Exit ↑ ↓:Sel
System BIOS Cacheabled	Enabled	PgUp/PgDn:Modify
C000 32K Shadow	Cached	F1:Help F2/F3:Color

Figure 3: Advance CMOS Setup

S.M.A.R.T. for Hard Disks

Self-Monitoring, Analysis and Reporting Technology. This option can help the BIOS to warn the user of a possible device failure and give the user a chance to back up the device before the failure actually happens.

The settings are Auto, Disabled, Enabled.

Floppy Drive Seek

Set this option to Enabled to specify that floppy drive A: will perform a Seek operation at system boot. The settings are Enabled or Disabled.

Quick Boot

When Quick Boot is selected, DRAM testing function will be disabled.

1st Boot Device

This option sets the type of device for the first boot drives that the AMIBIOS attempts to boot from after AMIBIOS POST completes. The settings are Disabled, IDE-0, IDE-1, IDE-2, IDE-3, Floppy, ARMD-FDD, ARMD-HDD, CDROM, SCSI.

2nd Boot Device

This option sets the type of device for the second boot drives that the AMIBIOS attempts to boot from after AMIBIOS POST completes.

The settings are Disabled, IDE-0, IDE-1, IDE-2, IDE-3, Floppy, ARMD-FDD, ARMD-HDD, CDROM.

3rd Boot Device

This option sets the type of device for the third boot drives that the AMIBIOS attempts to boot from after AMIBIOS POST completes. The settings are Disabled, IDE-0, IDE-1, IDE-2, IDE-3, Floppy, ARMD-FDD, ARMD-HDD, CDROM.

Try Other Boot Devices

Set this option to Yes to instruct AMIBIOS to attempt to boot from any other drive in the system if it cannot find a boot drive among the drives specified in the 1st Boot Device, 2nd Boot Device, 3rd Boot Device, 4th Boot Device options. The settings are Yes or No.

BootUp Num-Lock

When this option is selected, Num Lock is turned off when the system is powered on so the user can use the arrow keys on both the numeric keypad and the keyboard.

PS/2 Mouse Support

When this option is enabled, BIOS supports a PS/2- type mouse.

System Keyboard

This option does not specify if a keyboard is attached to the computer. Rather, it specifies if error messages are displayed if a keyboard is not attached. This option permits you to configure workstation with no keyboard. The settings are Absent, Present.

Primary Display

Select this option to configure the type of monitor attached to the computer. The settings are Monochrome, Color 40x25, Color 80x25, VGA/PGA/EGA, or Not Install.

Boot To OS/2

Set this option to Enabled if running OS/2 operating system and using more than 64MB of system memory on the motherboard. The settings are Disabled or Enabled.

Wait For 'F1' If Error

If this option is enabled, AMIBIOS waits for the end user to press <F1> before continuing. If this option is disabled, AMIBIOS continues the boot process without waiting for <F1> to be pressed. The settings are Disabled or Enabled.

Hit 'DEL' Message Display

Disabling this option prevents "Hit if you want to run Setup" from appearing when the system boots. The settings are Disabled or Enabled.

System BIOS Cacheable

When this option is set to enabled, the System ROM area from F0000-FFFFF is copied (shadowed) to the RAM for faster execution.

AMIBIOS SETUP - ADVANCED CMOS SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
C800 16K Shadow	Disabled	Available Options: > Disabled Enabled Cached
CC00 16K Shadow	Disabled	
D000 16K Shadow	Disabled	
D400 16K Shadow	Disabled	
D800 16K Shadow	Disabled	
DC00 16K Shadow	Disabled	
		ESC:Exit ↑ ↓:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color

Figure 4: Advance CMOS Setup

C000,32k Shadow

When this option is set to enabled, the Video ROM area from C0000-C7FFF is copied (shadowed) to the RAM for faster execution.

Disabled :The contents of the video ROM are not copied to the RAM.

Cached :The contents of the video ROM area from C0000h - C7FFFh are copied from the ROM to the RAM and can be written to or read from the cache memory.

Enabled :The contents of the video ROM area from C0000h - C7FFFh are copied (shadowed) from the ROM to the RAM for faster execution.

C800,16k Shadow

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached.

The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

CC00,16k Shadow

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached.

The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

D000,16k Shadow

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached.

The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

D400,16k Shadow

These options enable shadowing of the contents of the ROM area named in the option title. The

settings are Enable Disable, Cached.

The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

D800,16k Shadow

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached.

The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

DC00,16k Shadow

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached.

The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

4.7 Advanced Chipset Setup Selections

AMIBIOS SETUP - ADVANCED CHIPSET SETUP		
(C)2001 American Megatrends, Inc. All Rights Reserved		
CPU FSB	Auto	Available Options: > Disabled Enabled
CPU Ratio	Auto	
***** DRAM Timing *****		
Configure SDRAM Timing by SPD	Disabled	
DRAM Frequency	133Mhz	
SDRAM CAS# Latency	3	
Memory Hole	Disabled	
AGP Mode	4x	
AGP Read Synchronization	Enabled	
AGP Fast Write	Disabled	
AGP Aperture Size	64MB	
AGP Master 1 W/S Write	Disabled	
AGP Master 1 W/S Read	Disabled	
USB Controller	All USB Port	
USB Device Legacy Support	Disabled	
Port 64/60 Emulation	Disabled	
ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color		

Figure 5: Advanced Chipset Setup

4.8 Power Management Setup Selections

AMIBIOS SETUP - POWER MANAGEMENT SETUP		
(C)2001 American Megatrends, Inc. All Rights Reserved		
ACPI Aware O/S	No	Available Options: > No Yes
ACPI Standby State	S1/POS	
Re-Call VGA BIOS at S3 Resuming	Enabled	
Power Management/APM	Enabled	
Video Power Down Mode	Disabled	
Hard Disk Power Down Mode	Disabled	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Throttle Slow Clock Ratio	50%-56.25%	
Display Activity	Ignore	
IRQ3	Monitor	
IRQ4	Monitor	
IRQ5	Ignore	
IRQ7	Monitor	
IRQ9	Ignore	
IRQ10	Ignore	
IRQ11	Ignore	
IRQ13	Ignore	
IRQ14	Monitor	
IRQ15	Ignore	
		ESC:Exit ↑ ↓:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color

Figure 6: Power Management Setup

Power Management/APM

Set this option to Enabled to run APM (Advanced Power Management).

Video Power Down Mode

Set this option to Enabled to allow the BIOS to power down the Video adapter and Monitor.

Hard Disk Power Down Mode

Set this option to Enabled to allow the BIOS to power down the Hard Disk .

Standby/Suspend Time Out (Minutes)

This option specifies the amount of system inactivity (in minutes) before the system will enters Standby/Suspend state.

AMIBIOS SETUP -POWER MANAGEMENT SETUP		
(C)2001 American Megatrends, Inc. All Rights Reserved		
Power Button Function	On/Off	Available Options:
Resume On Ring/LAN	Disabled	> On/Off
Resume On LAN	Disabled	Suspend
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	
Power Type Select	AT	
		ESC:Exit ↑ ↓:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color

Figure 7: Power Management Setup

4.9 PCI / Plug and Play Setup Selections

AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available Options: No > Yes
Clear NVRAM	No	
On Board PCI LAN Controller	Enabled	
OnChip VGA Frame Buffer Size	8MB	
PCI Latency Timer (PCI Clocks)	32	
Primary Graphics Adapter	PCI	
Boot Screen Select	Auto	
LCD Panel Type	0 640x480	
Allocate IRQ to PCI VGA	Yes	
PCI Slot1 IRQ Priority	Auto	
PCI Slot2 IRQ Priority	Auto	
PCI Slot3 IRQ Priority	Auto	
PCI Slot4 IRQ Priority	Auto	
DMA Channel 0	PnP	ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	

Figure 8: PCI / Plug and Play Setup

AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
IRQ4	PCI/PnP	Available Options: > PnP ISA/EISA
IRQ5	PCI/PnP	
IRQ7	PCI/PnP	
IRQ9	PCI/PnP	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	
IRQ14	PCI/PnP	
IRQ15	PCI/PnP	
		ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color

Figure 9: PCI / Plug and Play Setup

Plug and Play Aware O/S

If enabled, BIOS will configure only PnP ISA boot devices (i.e. all PnP ISA cards which have boot flag set). And PnP aware OS will configure all other devices. If disabled, BIOS will configure all devices.

DMA Channel 0, 1, 3, 5, 6, 7

The option allow the user to specify the bus type used by each DMA channel. The settings are PnP or ISA/EISA

IRQ3, 4, 5, 7, 9, 10, 11, 14, 15

The option specifies the bus that the specified IRQ line is used on. The user can reserve IRQs for legacy ISA adapter cards whilst determining if AMIBIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs need to be removed from the pool, the user can optionally reserve the IRQ by assigning an ISA setting to it. Onboard I/O is configured by AMIBIOS. All IRQs used by onboard I/O are configured as PCI/PnP.

4.10 Peripheral Setup Selections

AMIBIOS SETUP - PERIPHERAL SETUP		
(C)2001 American Megatrends, Inc. All Rights Reserved		
OnBoard FDC	Enabled	Available Options: Disabled > Enabled
OnBoard Serial Port1	3F8/COM1	
OnBoard FIR Port	Disabled	
FIR IRQ Select	N/A	
FIR DMA1 Select	N/A	
FIR Single DMA Channel	N/A	
FIR DMA2 Select	N/A	
OnBoard Parallel Port	378	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port DMA	N/A	
Parallel Port IRQ	7	
OnBoard IDE	Both	
OnBoard LAN	Enabled	
OnBoard LAN P.M.E	Enabled	
OnBoard AC'97 Audio	Enabled	
		ESC:Exit ↑ ↓:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color

Figure 10: Peripheral Setup

On-Board Parallel Port

This option specifies the base I/O port address of the parallel port on the motherboard. The settings are Disabled, 378h, 278h, or 3BCh.

Parallel Port Mode

This option specifies the parallel port mode. The settings are Normal, Bi-Dir, ECP, EPP.

Normal :

The normal parallel port mode is used.

Bi-Dir :

Use this setting to support bi-directional transfers on the parallel port.

EPP :

The parallel port can be used with devices that adhere to Enhanced Parallel Port(EPP) specifications. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device.

ECP :

The parallel port can be used with devices that adhere to Extended Capabilities Port (ECP) specifications. ECP uses the DMA protocol to achieve data transfer rates of up to 2.5 Megabits per second, and provides symmetric bi-directional communication.

Parallel Port IRQ

This option specifies the IRQ used by the parallel port. The settings are (IRQ)5, (IRQ)7.

Parallel Port DMA Channel

This option is only available if the setting for the Parallel Port Mode option is set to ECP. It sets the DMA channel used by the parallel port. The available settings are DMA Channel 0, 1, or 3.

4.11 Hardware Monitor Setup Selections

AMIBIOS SETUP - HARDWARE MONITOR SETUP	
(C)2001 American Megatrends, Inc. All Rights Reserved	
--=System Hardware Monitor==--	
System Temperature	31°C/87°F
CPU Fan Speed	6300 RPM
Vcore	1.412 V
+ 2.500V	2.625 V
+ 5.000V	5.070 V
+12.000V	12.046 V
ESC:Exit ↑ ↓:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color	

Figure 11: Hardware Monitor Setup

Appendix A. Address Mapping

IO Address Map

I/O address Range	Description
000-01F	DMA Controller #1
020-021	Interrupt Controller #1, Master
040-05F	8254 timer
060-06F	8042 (Keyboard Controller)
070-07F	Real time Clock, NMI Mask
080-09F	DMA Page Register
0A0-0BF	Interrupt Controller #2
0C0-0DF	DMA Controller #2
0F0	Clear Math Coprocessor Busy
0F1	Reset Math Coprocessor
0F2	Core logic programming configuration
0F8-0FF	Math Coprocessor
1F0-1F8	Fixed Disk
200-207	Game I/O
278-27F	Parallel Printer Port 2 (LPT3)
2E8-2EF	Serial Port 4
2F8-2FF	Serial Port 2
300-31F	Prototype Card
360-36F	Reserved
378-37F	Parallel Printer Port 1 (LPT2)
3B0-3BF	Monochrome Display and Printer Adapter (LPT1)
3C0-3CF	Reserved
3D0-3DF	Color/Graphics Monitor Adapter
3E8-3EF	Serial Port 3
3F0-3F7	Diskette Controller
3F8-3FF	Serial Port 1

1st MB Memory Address Map

Memory address	Description
00000-9FFFF	System memory
A0000-BFFFF	VGA buffer
C0000-C7FFF	VGA BIOS
F0000-FFFFF	System BIOS
1000000-	Extend BIOS

*Default setting

IRQ Mapping Table

IRQ0	System Timer	IRQ8	RTC clock
IRQ1	Keyboard	IRQ9	Available
IRQ2	Cascade to IRQ Controller	IRQ10	Available
IRQ3	COM2	IRQ11	Available
IRQ4	COM1	IRQ12	PS2 mouse
IRQ5	Available	IRQ13	FPU
IRQ6	FDC	IRQ14	Primary IDE
IRQ7	Printer	IRQ15	Secondary IDE

DMA Channel Assignments

Channel	Function
0	Available
1	Available
2	Floppy disk (8-bit transfer)
3	Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

Appendix B. How to use the Wake-Up Function

The WAFER-C800EV provides two kind of Wake Up Function. This page describes how to use the Modem Wake-Up and LAN Wake-Up functions.

Wake-Up function works whilst using ATX power supply,

Wake-Up By Modem Ring On:

In CMOS SETUP, the user must set the option **Wake Up On LAN/Ring** to enabled. The ATX power supply will be switched on when there is a ring signal detected on the pin "RI" of the serial port.

Wake-Up On LAN:

In CMOS SETUP, the user must set the option **Wake Up On LAN/Ring** to enabled. When the computer is in power-down status, a LAN Link/Active LED is flashing. This status indicates that the LAN chip has entered standby mode and is waiting for a Wake-Up signal. You can use other computers to wake up your computer by sending ID to it.

ID: ID is the address of your system LAN. Every LAN chip has a factory-set ID which you can find it from network information in WINDOWS.

ID's format is xx-xx-xx-xx-xx-xx

Example ID: 00905C21D4