
Important Notice

1. Define the model number

This manual is suitable for two model : AN4T R2 and AN4 R2. The model AN4 R2 is a low cost solution of AN4T R2 by removing the DX4 supported. Install DX4 CPU on AN4 R2 system board may cause the CPU burned-out.

2. Installing Intel's DX4 CPU (for AN4T R2 only)

Since the Intel's DX4 CPU consumes 3.3V in processing, the use of 5V could cause it burned-out. When the DX4 CPU is installed on this motherboard, care must be exercised to make sure that the jumper settings are correct. Please refer the following tables for DX4's correct jumper settings:

<u>Jumper No.</u>	<u>No. of Pins</u>	<u>Description</u>	<u>Jumper setting</u>
JP28	2	Select DX4 CPU	OFF
		Select other CPU	ON
JP12	3	Select DX4 CPU	1-2
		Select other CPU	2-3
JP9	3	Select DX4 CPU	1-2
		Select other CPU	2-3

The jumper setting of Clock Generator for DX4 please check page 2-14.

High Performance Cache 486 VESA Mainboard

USER'S MANUAL

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3.7 Password Setting

This Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. Change the password as follows:

1. Choose "PASSWORD SETTING" in the Main Menu and press <Enter>. The following message appears:

"Enter Password:"

2. Enter a password and press <Enter>.

(If you do not wish to use the password function, you can just press <Enter> and a "Password disabled" message appears.)

3. After you enter your password, the following message appears prompting you to confirm the new password:

"Confirm Password:"

4. Re-enter your password and then Press <ESC> to exit to the Main Menu.

Important: If you forget or lose the password, the only way to access the system is to set jumper JP21 to clear the CMOS RAM. All setup information is lost and you must run the BIOS setup program again.

3.8 IDE HDD Auto Detection

This Main Menu item automatically detects the hard disk type and configures the STANDARD CMOS SETUP accordingly.

Chapter 1

System Board Overview

1.1 The mainboard specifications

1. CPU: 80486 DX/DX2/SX/SL, DX4* (P24C)
2. Cache memories: Primary: Built-in 8KB in 80486
Secondary: Standard 256KB
Optional: 128/512 KB
3. I/O slots: Three 32-bit VESA slots, six 16-bit slots for AT compatible add-on cards.
4. Memories: 128MB max on board
Using 8-30pin and 2-72pin SIMM module.
Support very flexible memory configurations.
5. BIOS: Award or AMI BIOS.
6. VL-Bus functions: Provides two VL-Bus masters or three slaves.
7. Green PC function: Stop CPU CLOCK.
Provides connector to turn off monitor AC power and VGA card HSYNC, VSYNC.
Monitor 2-serial port, one parallel port, KBD/mouse, HDD activity.

* Note: DX4* is AN4T R2 model only.

System Doze

The default setting is Disabled. When the Power Management item is switched to "User Define" you can select a time interval from 10 sec to 3 hrs. When the set time elapses without activity the system enters Doze mode.

If the Video Off Option is set to "Doze -- Off" and the idle time for all PM events -- Local Master, Local Device, Video Activities and DMA Activities -- is greater than the Doze time you set, the system will enter Doze mode, and the screen shuts off.

System Suspend

The default setting is Disabled. When the Power Management item is switched to "User Define" you can select a time interval from 10 sec to 3 hrs. When the set time elapses without activity the system enters Doze mode.

If the idle time for all PM events is greater than the Suspend time you set, the system will enter Suspend mode, and the mainboard frequency drops to 8 MHz (SL enhanced CPUs drop to 0 MHz) and the HDD goes into power down mode.

In the Suspend mode, the monitor can be shut off by either software or hardware control. For software, you can select "suspend -- Off" in the Video Off Option. For hardware, you can connect the V/H SYNC of the VGA card, or the Green Power supply, to the SM Out jumper, JP46. Note that hardware control saves more energy than software control.

Local Master (Device)

Choose Enabled or Disabled (Default). If Enabled the VESA Local Master (Device) card is monitored.

Video Activities

Choose Enabled or Disabled (Default). If Enabled video activities are monitored.

DMA Activities

This item should always be Enabled (Default).

1.3 Placement

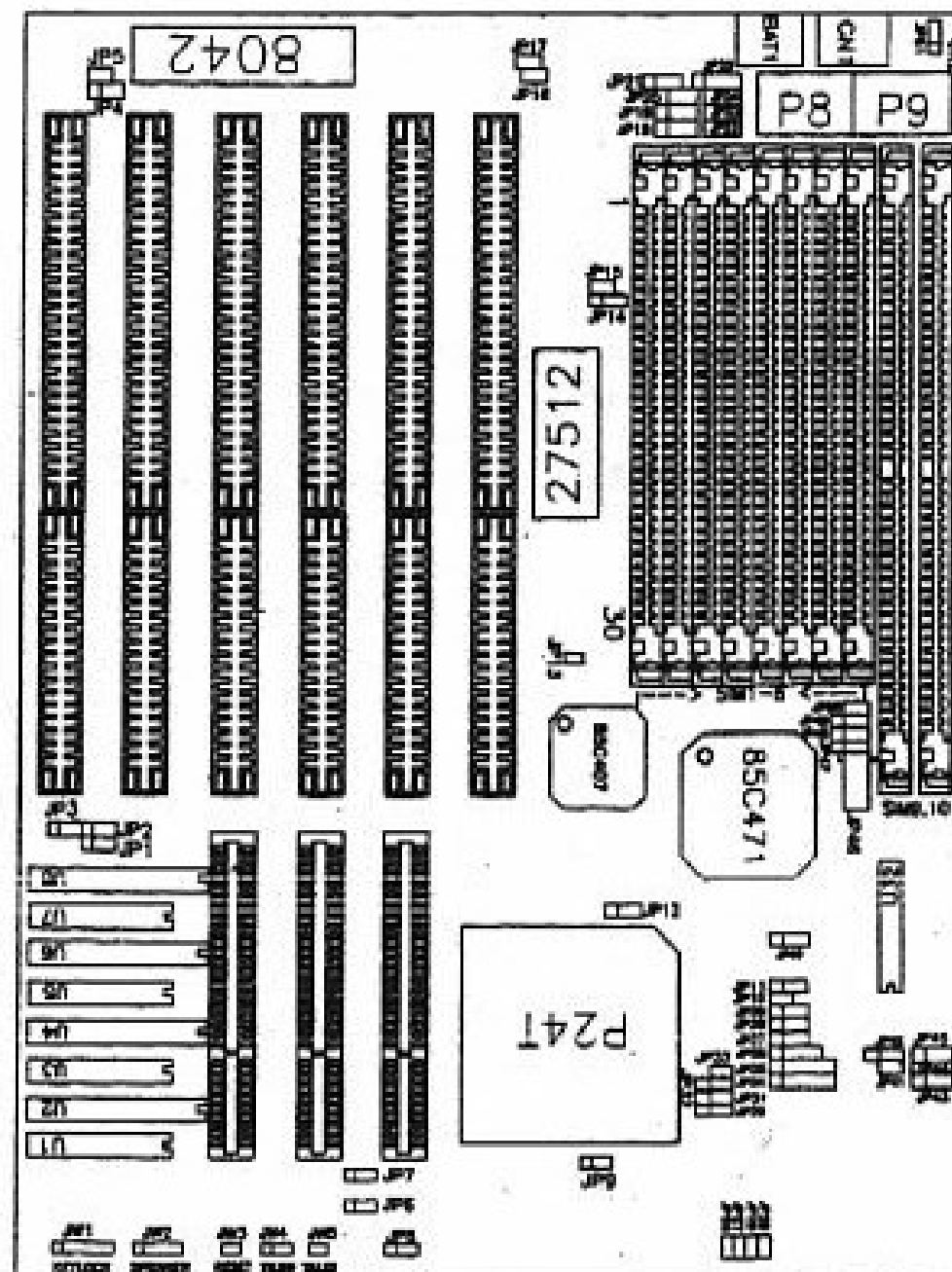


Figure 1-1

3.4 Power Management Setup

The Power Management Setup option lets you set the system's power saving functions.

Run the PowerManagement Setup as follows.

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of items appears.

FROM ISA BIOS (00000000)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management : Disable	IRQ 6 (Floppy Disk) : Enable
PM Control by APM : Yes	IRQ 7 (LPT or LAN) : Enable
Video Off Method : WH SYNC + Blank	IRQ 8 (RTC, CGP) : Enable
Video Off Option : Always On	IRQ 9 (Reserved) : Enable
** PM Timers **	IRQ 10 (Reserved) : Enable
HDD Power Down : Disable	IRQ 11 (Reserved) : Enable
System Date : Disable	IRQ 12 (Reserved) : Enable
System Suspend : Disable	IRQ 13 (CMT) : Enable
** PM Event **	IRQ 14 (Hard Disk) : Enable
Local Master : Disable	IRQ 15 (Reserved) : Enable
Local Device : Disable	
Video Activities : Disable	
DMA Activities : Enable	
IRQ 1 (Keyboard) : Enable	
IRQ 2 (COM 2) : Enable	
IRQ 4 (COM1) : Enable	
IRQ 5 (LPT or LAN) : Enable	

Esc : Quit ↑ ↓ ← → : Select Item
F1 : Help F10/PO/+/=: Modify
F8 : Old Values (Shift)F2 : Color
F9 : Load BIOS Defaults
F7 : Load Setup Defaults

Figure 2-5 Power Management screen for SL-Enhanced CPU

FROM ISA BIOS (00000000)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management : Disable	IRQ 7 (LPT or LAN) : Enable
** PM Timers **	IRQ 8 (RTC, CGP) : Enable
HDD Power Down : Disable	IRQ 9 (Reserved) : Enable
System Date : Disable	IRQ 10 (Reserved) : Enable
** PM Event **	IRQ 11 (Reserved) : Enable
Local Master : Disable	IRQ 12 (Reserved) : Enable
Local Device : Disable	IRQ 13 (CMT) : Enable
Video Activities : Disable	IRQ 14 (Hard Disk) : Enable
DMA Activities : Enable	IRQ 15 (Reserved) : Enable
IRQ 1 (Keyboard) : Enable	
IRQ 2 (COM 2) : Enable	
IRQ 4 (COM1) : Enable	
IRQ 5 (LPT or LAN) : Enable	
IRQ 6 (Floppy Disk) : Enable	

Esc : Quit ↑ ↓ ← → : Select Item
F1 : Help F10/PO/+/=: Modify
F8 : Old Values (Shift)F2 : Color
F9 : Load BIOS Defaults
F7 : Load Setup Defaults

Figure 2-6 Power Management screen for Standard CPU

Step 12. If you can see the DOS prompt shown on the screen, the installation is completed O.K.

Note : If you have any problem during the installation, please refer to chapter 2.2 for the detailed description.

Virus Warning	Enable this option and a warning message appears when anything attempts to access the boot sector or hard disk partition table.
External Cache	This option enables/disables the external cache memory. (The Default setting is Enabled.)
CPU Internal Cache	This option enables/disables the CPU's internal cache. (The Default setting is Enabled.)
Video or Adaptor BIOS Shadow	BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM. These 32K segments can be shadowed from ROM to RAM. BIOS is shadowed in a 32K segment if it is enabled and it has BIOS present.

Chapter 2

Hardware Setup

This chapter describes the mainboard's connectors and how to set the mainboard's jumpers.

2.1 Power Precautions

You should take the following precautions before you begin working with the mainboard and its components:

- Turn off the mainboard's power, and unplug the power cord.
- Unplug all cables that connect the mainboard to any external devices.

2.2 Connectors

You attach system components and case devices to the mainboard's connectors. A description of each connector and its pin assignments follows. Refer to Figure 1-1 for connector locations on the mainboard.

Caution: *Make sure you first turn off all power to the system before attaching components to the mainboard.*

BIOS Features Setup Menu

BIOS Features setup program is equipped with a series of help menus and accessed by the < F1 > key, which will display the available options for a particular configuration feature and special help for some options. If you don't really understand the meanings of each item, don't change the following default values.

FROM ISA BIOS (00000000)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Typematic Rate Setting	: Enabled	Video BIOS Shadow	: Enabled
Typematic Delay (Msec)	: 250	C0000-CFFF Shadow	: Disabled
Typematic Rate (Chars/Sec)	: 30	D0000-D7FFF Shadow	: Disabled
Quick Power on Self Test	: Enabled	E0000-EFFFF Shadow	: Disabled
Memory Parity Check	: Enabled		
IDE HDD Block Mode	: Disabled		
Boot Up NumLock Status	: On		
Boot Up Floppy Seek	: Disabled		
Swap Floppy Drive	: Disabled		
Boot Sequence	: A, C		
Boot Up System Speed	: High		
Security Option	: Setup		
Virus Warning	: Enabled		
External Cache	: Enabled		
CPU Internal Cache	: Enabled		

Esc: Quit	↓ ↑ → ←: Select Item
F1: Help	F4/F5/F6/F7: Modify
F8: Old Values (Shift) F9: Color	
F10: Load BIOS Defaults	
F11: Load Setup Defaults	

Figure 3-3 BIOS Feature Setup

Short description of screen items follows:

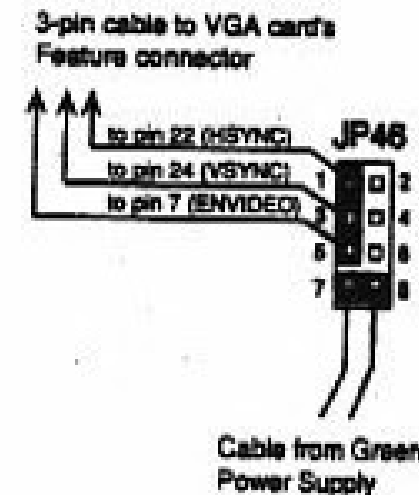
- Typematic Rate Setting** Enable this option to adjust the keystroke repeating rate.
- Typematic Delay (Msec)** Choose how long after you press a key that a character begins repeating.
- Typematic Rate (Chars/Sec)** Choose the rate a Character keeps repeating.

Connector Name	Pin Assignments	Function
Power input connector: CN2 (12 Pins)	Pin 1: Powergood. Pin 2: +5V. Pin 3: +12V. Pin 4: -12V. Pin 5: Ground Pin 6: Ground Pin 7: Ground Pin 8: Ground Pin 9: -5V Pin10: +5V Pin11: +5V Pin12: +5V.	Connect to the power connector from the power supply. Usually, the color marking of the power connector cables will be as listed above. Connect the power connector to the exact position. Any mistake will cause the mainboard power supply or add-on card to be damaged.
Monitor AC Power controller	Pin 1: Signal Pin 2: Ground	Connect to Green PC power supply connector.

JP46 - Green Video Connector

Connector JP46 can provide Green PC control of a monitor's AC power and a VGA card's HSYNC and VSYNC. Attach a cable from the VGA card's feature connector to pin's 1, 3, and 5, and attach a Green power supply's cable to pin's 7 and 8 as shown below.

Note that pin numbers 1, 3, and 5 of JP46 correspond to pin numbers 22 (HSYNC), 24 (VSYNC), and 7 (ENVIDEO) of the VGA card's feature connector. Refer to your VGA manual for more information. Attach cables as below.



is displayed. If the [del] key or Ctrl-Alt-Esc is pressed, the screen will be cleared and then the following message will be shown:



ROM ISA BIOS (00000000)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP LOAD BIOS DEFAULTS	LOAD SETUP DEFAULTS PASSWORD SETTING IDE HDD AUTO DETECTION SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc : Quit F10 : Save & Exit Setup	↓ ↑ → ← : Select Item (Shift)F2 : Change Color
Description of each function	

Figure 3-1 Main Menu

JP21 - CMOS Discharge Jumper

Jumper JP21 discharges CMOS memory. When you install the main-board, make sure this jumper is set for Normal Operation (short pins 1-2). Set the jumper as below.

Setting	JP21
Normal Operation (Default)	 3 2 1
Discharge CMOS	 3 2 1

JP4, JP13, JP14, JP15, JP16, JP41, JP49: Factory Reserved

These jumpers are for the manufacturer's use only. Make sure these jumpers are set at their default settings as shown below.

Jumper No.	No. of Pins	Description	Default Setting
JP4	3	Factory reserved	1-2
JP13	2	Factory reserved	ON
JP14	3	Factory reserved	1-2
JP15	2	Factory reserved.	OFF
JP16	2	Factory reserved.	ON
JP41	2	Factory reserved	OFF
JP49	3	Factory reserved	1-2

2.7 Jumper setting of Clock Generator for CPU frequency selection

a.) AVASEM AV9107 Clock Generator

	JP8	JP10	JP11	JP26	JP27	JP28	JP29	JP40
20MHz	1-2	OFF	OFF	ON	OFF	ON	ON	OFF
25MHz	1-2	OFF	OFF	OFF	ON	ON	ON	OFF
33MHz	1-2	OFF	OFF	ON	ON	ON	OFF	OFF
40MHz	2-3	OFF	OFF	OFF	OFF	ON	ON	OFF
DX4 25/75	1-2	OFF	1-2	OFF	ON	OFF	ON	2-3
DX4 33/83	1-2	ON	OFF	ON	ON	OFF	OFF	2-3
DX4 33/100	1-2	OFF	1-2	ON	ON	OFF	OFF	1-2

b.) MXIC MX8315 Clock Generator

	JP8	JP10	JP11	JP26	JP27	JP28	JP29	JP40
20MHz	1-2	OFF	OFF	OFF	OFF	ON	OFF	OFF
25MHz	1-2	OFF	OFF	OFF	ON	ON	OFF	OFF
33MHz	1-2	OFF	OFF	ON	ON	ON	ON	OFF
40MHz	2-3	OFF	OFF	ON	ON	ON	OFF	OFF
DX4 25/75	1-2	OFF	1-2	OFF	ON	OFF	ON	2-3
DX4 33/83	1-2	ON	OFF	ON	ON	OFF	ON	2-3
DX4 33/100	1-2	OFF	1-2	ON	ON	OFF	ON	1-2

2.4 Installation of CPU

The mainboard is equipped with a 237 pin socket for various CPUs: 80486 SX/DX/DX2/486SL, M7, DX4 to be selected by following jumpers :

Jumper setting	486DX/DX2(SL)*	486SX	486SXSL	M7	DX4**
JP9	2-3	2-3	2-3	2-3	1-2
JP12	2-3	2-3	2-3	2-3	1-2
JP30	1-2	2-3	2-3	1-2	1-2
JP31	2-3	OFF	OFF	2-3	2-3
JP32	2-3	2-3	2-3	2-3	2-3
JP33	ON	ON	OFF	ON	ON
JP34	4-5	OFF	4-5	2-3	4-5
JP35	3-4	OFF	3-4	2-3	3-4
JP36	2-3	OFF	2-3	1-2 3-4	2-3
JP37	OFF	OFF	OFF	OFF	OFF
JP38	OFF	1-2	OFF	2-3	OFF
JP39	OFF	OFF	OFF	2-3	OFF
JP43	2-3	2-3	2-3	1-2	2-3
JP47	2-3	2-3	2-3	1-2	2-3
JP48	1-2	1-2	1-2	2-3	1-2

Note: 486DX/DX2(SL)* is default setting.
DX4** is for AN4T R2 model only.

Item 8: 30pin x 8 and two single side 72pin.

SIM1-4	SIM5-8	SIM9	SIM10	TOTAL
-----	-----	256K-S	-----	1MB
-----	-----	256K-S	256K-S	2MB
1M-B	-----	256K-S	256K-S	6MB
1M-B	1M-9	256K-S	256K-S	10MB
4M-B	-----	256K-S	256K-S	18MB
-----	-----	1M-S	-----	4MB
-----	-----	1M-S	1M-S	8MB
1M-B	-----	1M-S	1M-S	12MB
1M-B	1M-B	1M-S	1M-S	16MB
-----	-----	1M-S	4M-S	20MB
4M-B	-----	1M-S	1M-S	24MB
4M-B	-----	1M-S	4M-S	36MB
4M-B	4M-B	1M-S	1M-S	40MB
-----	-----	4M-S	-----	16MB
-----	-----	4M-S	4M-S	32MB
4M-B	-----	4M-S	4M-S	48MB
4M-B	4M-9	4M-S	4M-S	64MB
-----	-----	256K-S	1M-S	5MB
-----	-----	256K-S	4M-S	17MB
-----	-----	256K-S	16M-S	65MB
-----	-----	1M-S	16M-S	68MB
16M-B	-----	1M-S	1M-S	72MB
-----	-----	4M-S	16M-S	80MB
16M-B	-----	4M-S	4M-S	96MB
-----	-----	16M-S	-----	64MB
-----	-----	16M-S	16M-S	128MB

Item 1: 30pin x 8 and singal side 72pin.

SIM1-4	SIM5-8	SIM9	SIM10	TOTAL
256K-B	-----	-----	-----	1MB
256K-B	256K-B	-----	-----	2MB
256K-B	256K-B	1M-S	-----	6MB
256K-B	256K-B	1M-S	1M-S	10MB
256K-B	256K-B	4M-S	-----	18MB
1M-B	1M-B	-----	-----	8MB
1M-B	1M-B	1M-S	-----	12MB
1M-B	1M-B	1M-S	1M-S	16MB
1M-B	1M-B	4M-S	-----	24MB
1M-B	1M-B	4M-S	4M-S	40MB
1M-B	4M-B	4M-S	-----	36MB
1M-B	16M-B	-----	-----	68MB
1M-B	1M-B	16M-S	-----	72MB
4M-B	-----	-----	-----	16MB
4M-B	4M-B	-----	-----	32MB
4M-B	4M-B	4M-S	-----	48MB
4M-B	4M-B	4M-S	4M-S	64MB
4M-B	16M-B	-----	-----	80MB
4M-B	4M-B	16M-S	-----	96MB
16M-B	-----	-----	-----	64MB
16M-B	16M-B	-----	-----	128MB

Item 2: 30pin x 8 and one duple side 72pin.

SIM1-4	SIM5-8	SIM9	SIM10	TOTAL
256K-B	256K-B	512K-D	-----	4MB
1M-B	1M-B	8M-D	-----	40MB
4M-B	4M-B	8M-D	-----	64MB

Item 3: 30pin x 4 and one duple side 72pin.

SIM1-4	SIM5-8	SIM9	SIM10	TOTAL
1M-B	-----	8M-D	-----	36MB
4M-B	-----	8M-D	-----	48MB

Item 4: 30pin x 4 and one single side 72pin, one double side 72pin.

SIM1-4	SIM5-8	SIM9	SIM10	TOTAL
256K-B	-----	512K-D	256K-S	4MB
1M-B	-----	8M-D	1M-S	40MB
4M-B	-----	8M-D	4M-S	64MB

Item 5: 30pin x 8 and two double side 72pin.

SIM1-4	SIM5-8	SIM9	SIM10	TOTAL
1M-B	-----	512K-D	512K-D	8MB
1M-B	1M-B	512K-D	512K-D	12MB
4M-B	-----	512K-D	512K-D	20MB
1M-B	4M-B	512K-D	512K-D	24MB
4M-B	4M-B	512K-D	512K-D	36MB

Item 6: two double side 72pin or one double side 72pin, one single side 72pin.

SIM1-4	SIM5-8	SIM9	SIM10	TOTAL
-----	-----	512K-D	-----	2MB
-----	-----	512K-D	512K-D	4MB
-----	-----	512K-D	1M-S	6MB
-----	-----	512K-D	4M-S	18MB
-----	-----	2M-D	-----	8MB
-----	-----	2M-D	2M-D	16MB
-----	-----	8M-D	-----	32MB
-----	-----	8M-D	8M-D	64MB

Item 7: 30pin x 4 and two single side 72pin.

SIM1-4	SIM5-8	SIM9	SIM10	TOTAL
256K-B	-----	-----	-----	1MB
256K-B	-----	-----	256K-S	2MB
256K-B	-----	1M-S	256K-S	6MB
256K-B	-----	4M-S	256K-S	18MB
1M-B	-----	-----	-----	4MB
1M-B	-----	-----	1M-S	8MB
1M-B	-----	1M-S	1M-S	12MB
1M-B	-----	-----	4M-S	20MB
1M-B	-----	4M-S	1M-S	24MB
1M-B	-----	4M-S	4M-S	36MB
4M-B	-----	-----	-----	16MB
4M-B	-----	-----	4M-S	32MB
4M-B	-----	4M-S	4M-S	48MB
256K-B	-----	-----	1M-S	5MB
256K-B	-----	-----	4M-S	17MB
256K-B	-----	-----	16M-S	65MB
1M-B	-----	-----	16M-S	68MB
1M-B	-----	16M-S	1M-S	72MB
4M-B	-----	-----	16M-S	80MB
4M-B	-----	16M-S	4M-S	96MB
16M-B	-----	-----	-----	64MB
16M-B	-----	-----	16M-S	128MB

2.5 Installation of DRAMs

The system board supports four banks of Memory with/without parity bit of single side or double side 72 pin SIMM for easy upgrade the system memory.

The possible combinations of bank selection are as below:

Bank	JP18	JP19	JP20	JP21	JP22	JP23	JP24	JP25	JP26	JP27	Bank 0	Bank 1	Bank 2	Bank 3
1.	*1-2	*1-2	*OFF	*1-2	*OFF	*1-2	*OFF	*OFF	*OFF	*OFF	SIM1-4(B)	SIM1-8(B)	SIM9(S)	SIM10(S)
2.	1-2	1-2	OFF	1-2	1-2	OFF	OFF	OFF	OFF	OFF	SIM1-4(B)	SIM1-8(B)	SIM9(D)	XXXXXX
3.	1-2	OFF	OFF	1-2	2-3	OFF	OFF	OFF	OFF	OFF	SIM1-4(B)	SIM9(D)	XXXXXX	XXXXXX
4.	1-2	OFF	OFF	1-2	1-2	2-3	OFF	OFF	OFF	OFF	SIM1-4(B)	SIM10(S)	SIM9(D)	XXXXXX
5.	2-3	2-3	OFF	2-3	OFF	2-3	ON	1-2	1-2	1-2	SIM9(D)	SIM10(D)	SIM1-4(B)	SIM1-8(B)
6.	OFF	OFF	ON	2-3	2-3	OFF	OFF	1-2	1-2	1-2	SIM9(D)	SIM10(D)	XXXXXX	XXXXXX
7.	1-2	OFF	OFF	1-2	1-2	2-3	OFF	OFF	OFF	OFF	SIM1-4(B)	SIM10(S)	SIM9(S)	XXXXXX
8.	2-3	2-3	OFF	2-3	OFF	2-3	OFF	OFF	OFF	OFF	SIM9(S)	SIM10(S)	SIM1-4(B)	SIM1-8(B)

Note: (B) 4pcs of 30 pin SIMM
 (S) Single side 72pin SIMM
 (D) Double side 72pin SIMM

256K-S	= 256K x 32bits	= 1MBytes
1M-S	= 1M x 32bits	= 4MBytes
4M-S	= 4M x 32bits	= 16MBytes
16M-S	= 16M x 32bits	= 64MBytes
512K-D	= 2 x 256K x 32bits	= 2MBytes
2M-D	= 2 x 1M x 32bits	= 8MBytes
8M-D	= 2 x 4M x 32bits	= 32MBytes
256K-B	= 4 x 256K x 8bits	= 1MBytes
1M-B	= 4 x 1M x 8bits	= 4MBytes
4M-B	= 4 x 4M x 8bits	= 16MBytes
16M-B	= 4 x 16M x 8bits	= 64MBytes

2.6 Installation of Cache memory


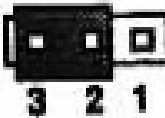
This mainboard supports very flexible Cache SRAM configuration: 128KB, 256KB, and 512KB.

Main Board Cache Size		128KB	256KB	512KB
TAG SRAM	Location	U32		
	Type	8Kx8	32Kx8	
Data SRAM	Location	U2, U4, U6, U8	U1-U8	U2, U4, U6, U8
	Type	32Kx8		128Kx8
Jumper setting	JP1	1-2	2-3	1-2
	JP2	1-2	2-3	1-2
	JP44	1-2	2-3	2-3
	JP42	1-2	1-2	2-3

JP7 - VL-Bus Jumper (VESA mode only)

Set jumper JP7 to configure the mainboard's VESA Local Bus. See Figure 1-1 for jumper locations.

Set jumper JP7 to match the mainboard's CPU speed.

CPU Frequency	JP7
≤ 33 MHz (Default)	 3 2 1
> 33 MHz	 3 2 1

Chapter 3

Award BIOS Setup

All personal computer use a BIOS, or Basic Input/Output system, to provide control for the hardware functions. When system is powered on or reset, the CPU is reset and BIOS will do the following:

- Self-test on CPU.
- Verify ROM BIOS checksum.
- Verify CMOS configuration chip.
- Initialize timer.
- Initialize DMA controller.
- Verify RAM memory.
- Install all BIOS function call utilities.
- Verify/initialize all system configurations, like keyboard, floppy drive, hard disk, initialize EGA or VGA if there is any.
- Hook to the add-in BIOS or expansion BIOS to perform initialization and driver link to the system.

Award's BIOS ROM has a built-in setup program that allow users to modify the basic system configuration. This type of information is stored in battery-backed RAM so that the setup information is retained when the power is turned off. When the system is power on or reset, the Award BIOS will display a copyright message on the screen, then the BIOS will perform the system diagnostics test and initialization. When all of the above tests have been passed, the message:

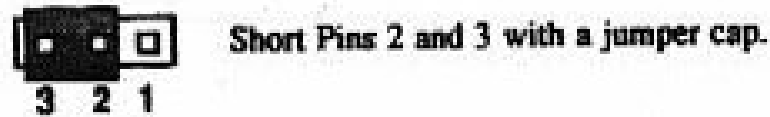
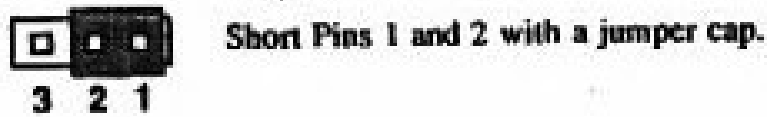
"TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC OR DEL KEY

2.3 Jumper Switches

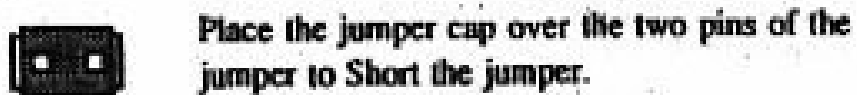
You set jumper switches on the mainboard to configure various hardware options. See Figure 1-1 for jumper locations.

Throughout this section the following symbols are used to indicate jumper settings.

For 3-pin jumpers, the symbols below are used:



For 2-pin jumpers, the following symbols are used:



Note: To avoid losing jumper caps, attach the removed jumper cap to one of the jumper pins.

3.1 Standard CMOS Setup Menu

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes none, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Date (mm/dd/yy) : Wed, Apr 21 1993					
Time (hh:mm:ss) : 14:03:21					
Drive C: None (DMA)	CYL	HEADS	PRECOMP	LANDZONE	SECTORS
Drive D: None (DMA)	0	0	0	0	0
Drive A: 1.44, 5.25 in.	0	0	0	0	0
Drive B: None					
Video : MCGA	Basic Memory: 640K			Extended Memory: 320K	
Hard On : All Errors	Expanded Memory: OK			Other Memory: 128K	
	Total Memory: 4096K				
Esc : Quit	↓ ↑ → ← : Select Item		F1/F2 +/- : Modify		
F1 : Help	(Shift)F2 : Change Color		F8 : Toggle Calendar		

Figure 3-2 Standard CMOS Setup Menu

The setup program is completely menu-driven:

1. Use arrow keys to select entry of **Date, Time, Hard Disk(C/D), Floppy, Display and Keyboard.**
2. Use **PgUp/PgDn** key to modify the option of each entry.
3. Use **Esc** to exit.

Connector Name	Pin Assignments	Description
External Battery Connector: JP25 (4 Pins)	Pin 1: 6V battery input Pin 2: NC. Pin 3: Ground. Pin 4: Ground.	In case the on-board battery is out of work, the user can remove it from the mainboard and connect a 6V external battery to the 4 pin J1
Turbo Connector: JW4 (3 Pins)	Pin 1: +5VDC. Pin 2: Turbo signal. Pin 3: Ground.	1-2: Low speed mode. 2-3: Turbo mode. Connect the pin2, pin3 to the cable of the chassis' turbo button.
Turbo LED Connector JW5 (2 Pins)	Pin 1: Cathode terminal of LED. Pin 2: Anode terminal of LED.	If the connection is correct, the turbo LED will light up when the system is in turbo speed mode. Otherwise the turbo LED will be off.
Hardware Reset Connector: JW3 (2 Pins)	Pin 1: Reset input Pin 2: Ground	Connect this switch to the cable of the chassis' reset button. Press and hold the reset button for at least one second to reset the system.
Keylock and Power LED connector: JW1 (5 Pins)	Pin 1: +5VDC. Pin 2: No connection. Pin 3: Ground. Pin 4: Keyboard inhibit Signal. Pin 5: Ground.	Connect this switch to the cable of the chassis' keylock button.
Speaker connector: JW2 (4 Pins)	Pin 1: Sound signal. Pin 2: Ground. Pin 3: Ground. Pin 4: +5VDC.	Connect to the speaker connector in the front panel of the chassis.
Keyboard connector: CN1 (5 Pins)	Pin 1: Keyboard clock. Pin 2: Keyboard data. Pin 3: No connection. Pin 4: Ground. Pin 5: +5VDC.	Connect to the Keyboard connector.

Quick Power On Self Test

Enabled provides a fast POST at boot-up

Memory Parity Check

Enable this option for a Normal memory parity check. Disabled ignores memory parity check.

IDE HDD Block Mode

This option enables/disables the IDE HDD Block Mode function. Older HDDs do not support this function. (The Default setting is Disabled.)

Boot Up Num Lock Status

Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.

Boot Up Floppy Seek

Enable this item and the BIOS searches for installed floppy disk drives to determine if they are 40 tracks (360K drive) or 80 tracks (760K, 1.2M, or 1.44M drives). Disable this item and the BIOS does not search for floppy drive type by track number.

Swap Floppy Drive

Enabled changes the sequence of the A: and B: drives. (The Default setting is Disabled.)

Boot Sequence

The default setting attempts to first boot from drive A: and then from hard disk C:. You can reverse this sequence with "C: A:", but then drive A: cannot boot directly.

Boot Up System Speed

Choose High or Low. This item selects the speed the system runs immediately after power up.

Security Option

Choose Setup or System. Use this feature to prevent unauthorized system boot-up or use of BIOS Setup.

"System" - Each time the system is booted the password prompt appears.

"Setup" - If a password is set, the password prompt only appears if you attempt to enter the Setup program.

3.3 Chipset Features Setup Menu

The Chipset Features Setup option changes the values of the chipset registers. These registers control system options in the computer.

Caution: Do not change the default values shown below unless you are familiar with the mainboard's chipset.

Run the Chipset Features Setup as follows.

1. Choose "CHIPSET FEATURES SETUP" from the Main Menu and the following screen appears.

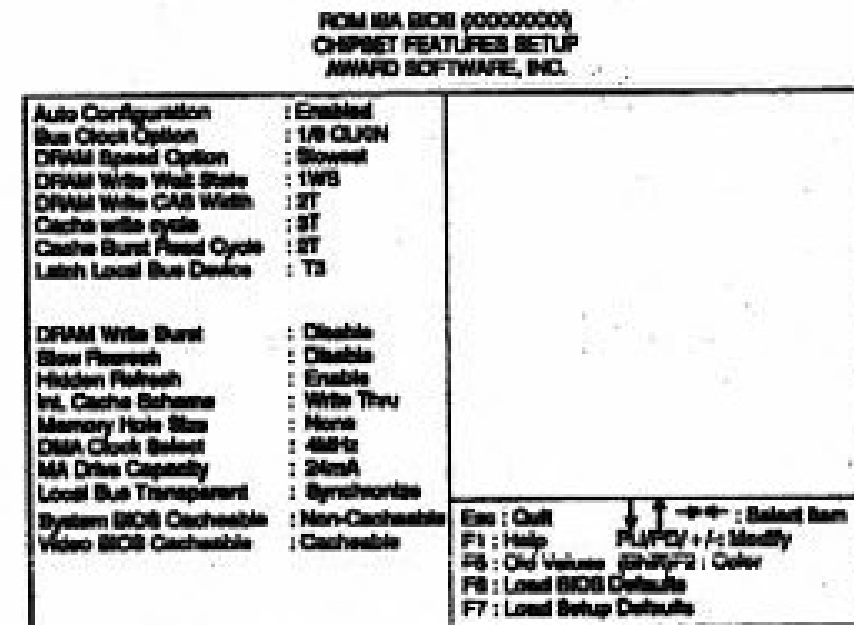


Figure 2-4 Chipset Feature Setup Menu

2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/ +/- keys.
3. After you have finished with the Chipset Features Setup, press the <ESC> key and follow the screen instructions to save or disregard your settings.

11.4 Quick reference for installation

Step 1. Please verify the following jumpers:

- A. JP21 : A jumper at pin "1-2" for CMOS RAM normal operation.
- B. JP9, JP12, JP30-JP39, JP43, JP47, JP48 :
Make sure the jumper setting is consistent with the installed CPU.
(refer section 2.4)

Step 2. Connect CN1 to the keyboard.

Step 3. Plug at least 1 DRAM modules into the SIMM sockets SIM1-SIM4(BANK0).

Step 4. Verify the cache size selection jumpers JP1, JP2, JP42, JP44 (refer section 2.6).

Step 5. Connect the following connectors to your case :

- A. JW3 to H/W reset button.
- B. JW2 to speaker.
- C. JW4 to turbo switch.
- D. JW5 to turbo LED, the LED will light up.
- E. JW1 to keylock.

Step 6. Plug in the display card and HDD/FDD driver card into slots.

Step 7. Connect CN2 to P8 and P9 of power supply.

Step 8. Power on.

Step 9. Enter the "Setup Menu" screen. Select the display type and driver type.

Step 10. Quit the "Setup Menu" screen and then select "SAVE & EXIT SETUP" from BIOS Main Menu.

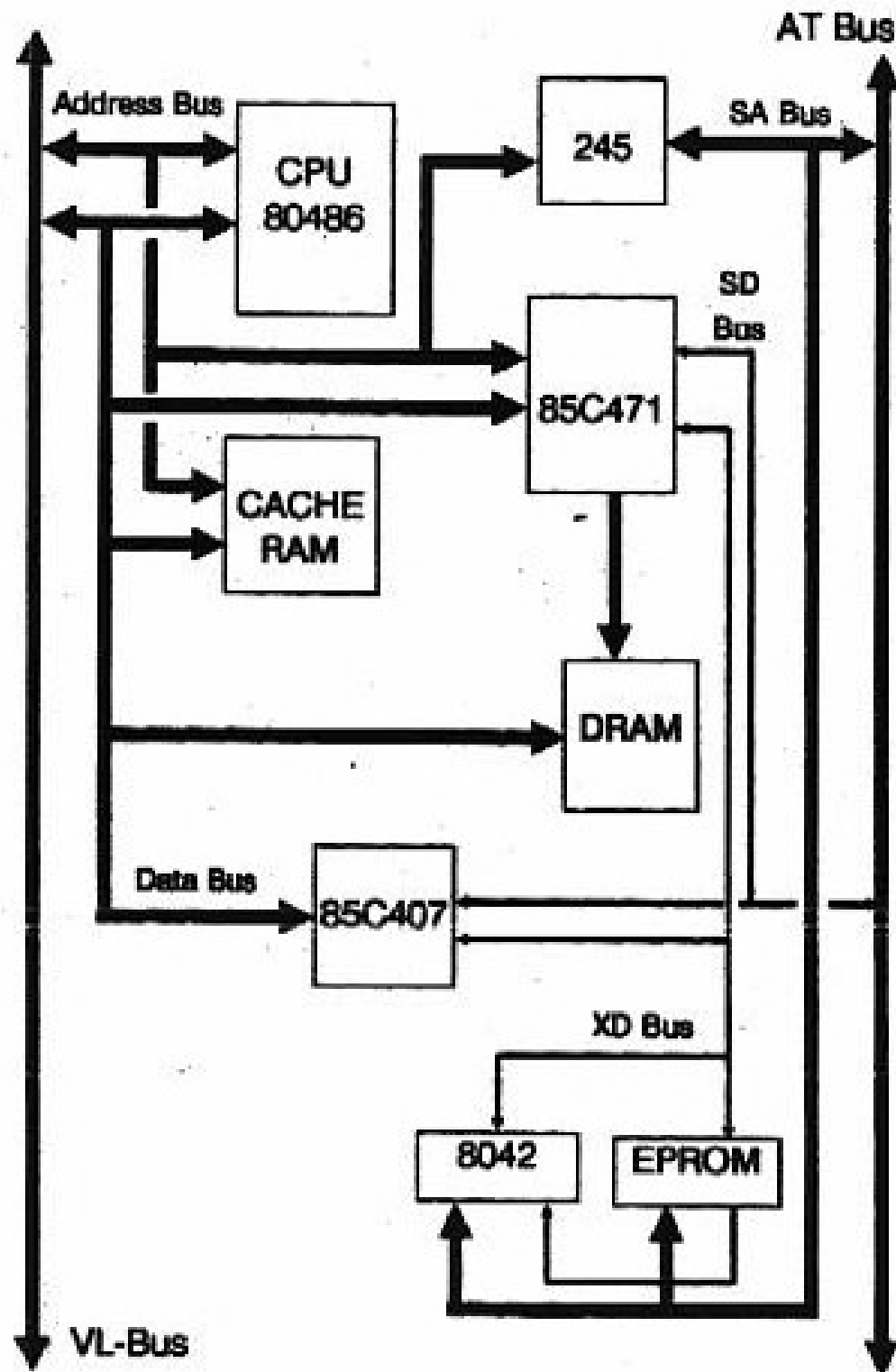
Step 11. The system will re-boot.

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys.

A short description of selected screen items follows:

Power Management	Options are as follows:
User Define	You define HDD and system power down times.
Disabled	Disables the Green PC Features. (Default)
Min Saving	Doze = 3 Hr Suspend = 3 Hr
Max Saving	Doze = 10 Sec Suspend = 10 Sec
PM Control by APM	Choose Yes (Default) or No. APM stands for Advanced Power Management. "Yes" makes your power management more flexible.
Video Off Method	Choose V/H Sync + Blank (Default) or Blank screen. With this item V/H SYNC is controlled by software. If you have a VGA card that is not compatible with this option, switch to "Blank screen", even though it consumes more power than "V/H SYNC + Blank".
Video Off Option	Choose Always On (Default), Suspend - Off, or Doze - Off. This item shuts the video off when entering Suspend mode or Doze mode.
HDD Power Down	Choose a time interval from 1 to 15 minutes or Disabled (Default). When the set time has elapsed, the BIOS sends a command to the HDD to enter standby (sleep) mode, turning off the motor. This function is only valid for IDE HDDs that support power saving function.

1.2 The system block diagram



IRQn

Enabled is the default setting for IRQ 8, the other IRQ defaults are Disabled.

3. After you have finished with the Power Management Setup, press the <ESC> key to return to the Main Menu.

3.5 Load BIOS Default

This Main Menu item loads the BIOS default system values. Choose this item and the following message appears:

"Load BIOS Defaults (Y/N)? N"

To use the BIOS defaults, change the prompt to "Y" and press <Enter>.

3.6 Load Setup Defaults

This item loads the system values you have previously saved. Choose this item and the following message appears:

"Load SETUP Defaults (Y/N)? N"

To use the SETUP defaults, change the prompt to "Y" and press <Enter>.

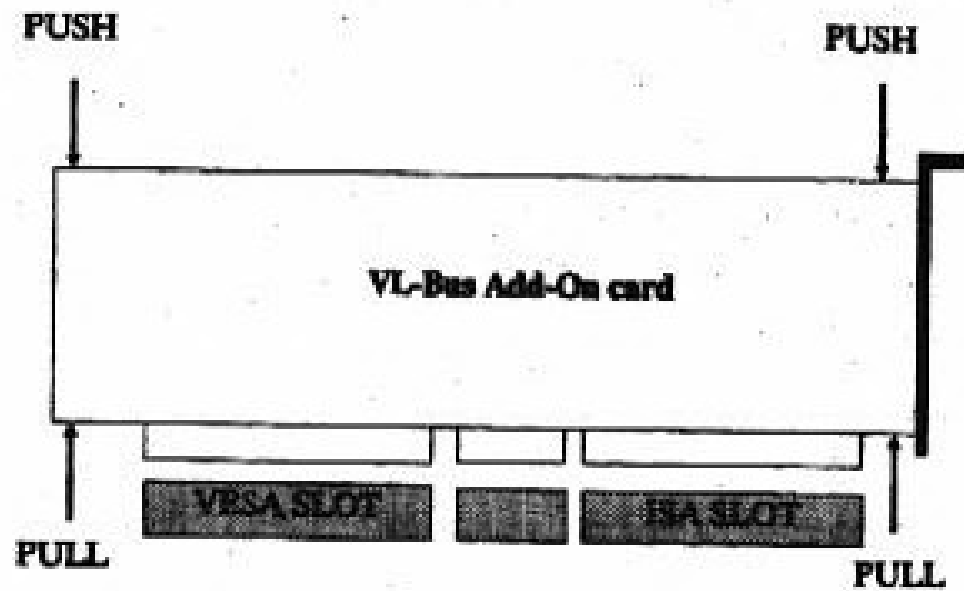
3.5	Load BIOS Default.....	3-11
3.6	Load Setup Defaults.....	3-11
3.7	Password Setting.....	3-12
3.8	IDE HDD Auto Detection.....	3-12
3.9	Standard type of hard disk.....	3-13

3.9 Standard type of hard disk

Type	Size	Cylinders	Heads	W- Pcomp	L- Zone	Sect
1	10MB	308	4	128	308	17
2	20MB	615	4	300	615	17
3	30MB	615	6	300	615	17
4	62MB	940	8	512	940	17
5	46MB	940	6	512	940	17
6	20MB	615	4	66335	615	17
7	30MB	462	8	256	611	17
8	30MB	733	5	66335	733	17
9	112MB	900	15	66335	901	17
10	20MB	620	3	66335	620	17
11	35MB	855	5	66335	855	17
12	46MB	855	7	66335	855	17
13	20MB	308	8	128	319	17
14	42MB	733	7	66335	733	17
16	20MB	612	4	0000	663	17
17	40MB	977	6	300	977	17
18	66MB	977	7	66335	977	17
19	66MB	1024	7	612	1023	17
20	30MB	733	5	300	732	17
21	42MB	733	7	300	732	17
22	30MB	733	5	300	733	17
23	10MB	308	4	0000	308	17
24	52MB	925	7	0000	925	17
25	66MB	925	9	66335	925	17
26	43MB	754	7	754	754	17
27	66MB	754	11	66335	754	17
28	40MB	699	7	256	699	17
29	66MB	823	10	66335	823	17
30	52MB	918	7	918	918	17
31	92MB	1024	11	66335	1024	17
32	127MB	1024	15	66335	1024	17
33	42MB	1024	5	1024	1024	17
34	10MB	612	2	128	612	17
35	76MB	1024	9	66335	1024	17
36	66MB	1024	8	512	1024	17
37	40MB	615	6	128	615	17
38	24MB	967	3	967	967	17
39	57MB	967	7	967	967	17
40	40MB	620	6	620	620	17
41	40MB	977	5	977	977	17
42	40MB	961	5	961	961	17
43	46MB	630	7	512	630	17
44	66MB	630	10	66335	630	17
45	114MB	917	15	66335	918	17
46	152MB	1224	16	66335	1223	17

3. Installing VL-BUS ADD-ON Card

To avoid the damage of the VL-Bus slots, please be careful when you insert/remove the VL-Bus Add-on cards. To insert/remove the card, you should PUSH/PULL the both edges of the card in uniform force.



PROBLEM REPORT FORM

DATE: / /

COMPANY NAME :

TEL:

CONTACT PERSON:

FAX:

MODEL NO : _____
CPU : _____
COPROCESSOR : _____
MEMORY : _____
BIOS : _____
HDC : _____
HDD : _____
VGA CARD : _____
SOFTWARE : _____
OTHERS : _____

PROBLEM DESCRIPTION:
