

TM-VA370V
PCI/ AGP/AMR Mainboard

Version: 1.0

Warning: Never run the processor without the heatsink properly and firmly installed. Permanent Damage Will result!

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Printed in Taiwan

Overview

The **TM-VA370V** is a PPGA-Celeron based mainboard that utilizes VIA 8605+686A chipset, a high level of integrated function. This mainboard is designed for Celeron & 133 MHz CuMine FC-PGA CPU, and **Onboard Savage 4 AGPx4 VGA, ATA66/100(VIA)** Bus Master IDE, Sound On Board, SDRAM memory and expandable to a maximum 768GB.

In addition to above features, this All-In-One mainboard implements most advanced technology such as Synchronous switching regulator, CPU thermal protection, CPU fan monitoring, System voltage monitoring, Over currentt protection, Modem Wake Up, LAN Wake Up.

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Introduction

A. Specifications

System Chipset	VIA 8605+686A chipset.
CPU	Intel PPGA-Celeron processors, support 300-800 (Ex. Clk 66 MHz); CuMine FC-PGA 450-800 (Ex. Clk 100 MHz); CuMine FC-PGA 533-1GHz (Ex. Clk 133 MHz) CPU.
Memory	Expandable to 1.5GB (3 banks) with three 168-pin DIMM socket {support 3.3 V EDO (66MHz only) / SDRAM (66/100 & 133 MHz for VIA chipset)}.
Graphic On Board	Savage 4 VGA On board, 32 Shared Memory
Sound On Board	AC 97 Codec Complaint PC97 2.1 specification, Supports 18-bit ADC and DAC as well as 18-bit Stereo full duplex codec.
I/O	One high speed 16550 compatible serial ports, one Multi-Mode. Parallel Port support SPP/EPP/ECP standard mode. Two onboard PCI IDE Ports (32-bit data transfer). LS-120/ ZIP FDD, IrDA/ ASK IR/ Consumer IR. Dual USB ports Support two 360/720KB/1.2/1.44/2.88MB floppy disk devices. One PS/2 Mouse port.
BIOS	Award System BIOS installed in socket (Flash and PnP).
Expansion slots	1x AGP(x4) slot, 4xPCI Master Slots and 1x AMR.
Voltage	Auto
Dimension	4-layer PCB, size (300mm x 180mm).

User's Manual

Bundled Software

- ***Super VB** : Provides anti-virus protection.
- ***Super Voice** : For data, FAX and voice communication.
- ***Gamut 2000**: Provides professional audio features.
- ***Media Ring Talk** : Provides PC to PC, or PC to phone internet communication.
- ***Corel WordPerfect Suite 8** : A office application suite under Windows.
- ***3 DEEP** : Provides for adjust color, contrast and brightness of monitor.

Package Content

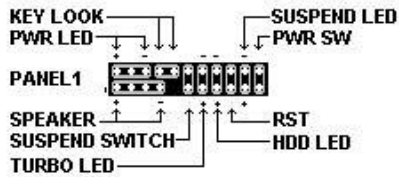
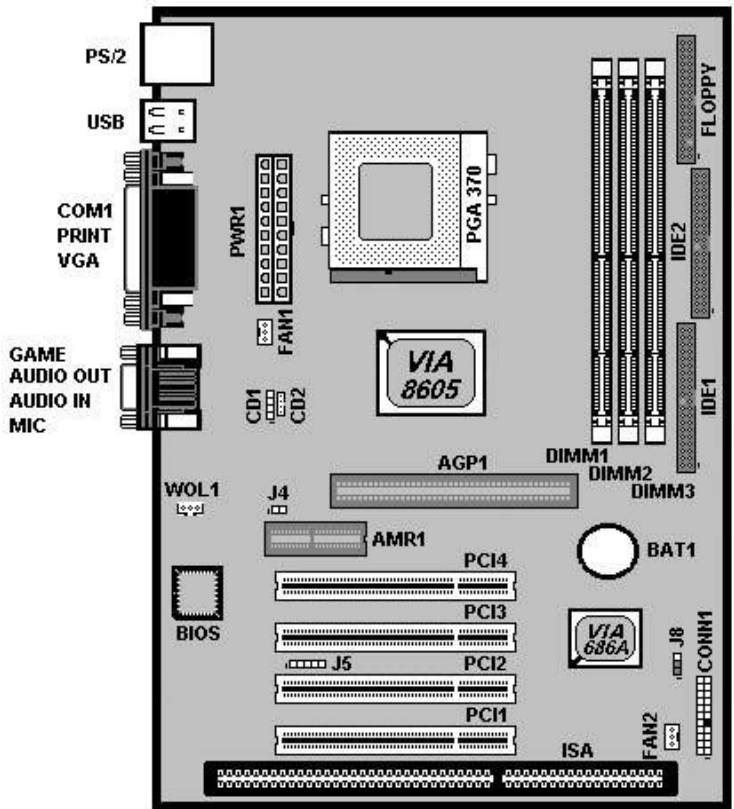
- * Mainboard
- * Manual & CD Diskette
- * 1x FDD, 1xDMA66/100 Cables
- * AMR Fax/Modem Card

Others

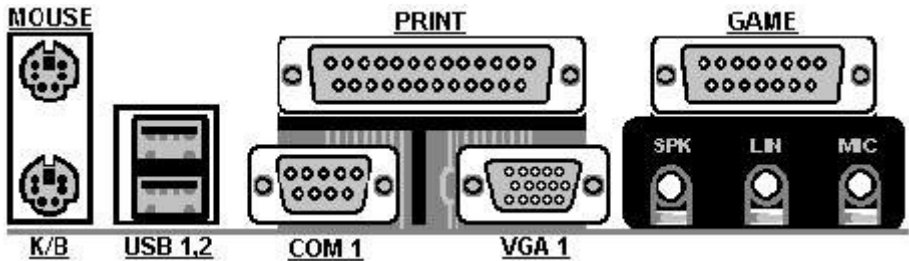
Hardware Monitor, **ATA66/100**,
Modem Ring On, LAN Wake Up.

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Setup Guide Layout Diagram



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- **SIR1 : Infrared Port (IrDA)**
 - 1 – VCC
 - 2 – NC
 - 3 – IRRx
 - 4 – GND
 - 5 – IRTx

Jumper Setting

- **CPU Setting :**

This mainboard provides Auto Detect in CPU Multiplier and Frequency.

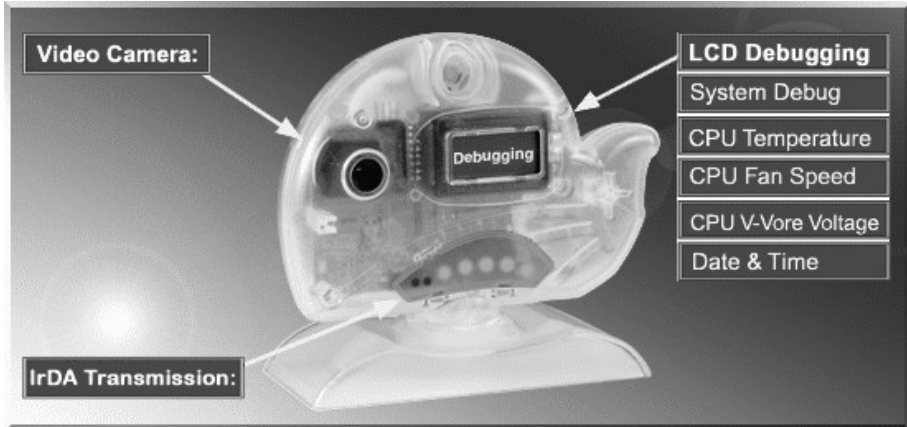
- **J8 :** Clear CMOS

J8	
1-2 On	Normal Operation (Default)
2-3 On	Clearing CMOS Data

- **J4 : Onboard Sound**

J4	
1-2 Off	Enable
1-2 On	Disable

EscoCAM – An Integrated Module



It's so valuable that you don't have to pay thrice to buy three fashionable devices of PC Camera, Debugging and IrDA ware now because we have integrated them into our **EscoCAM** in the shape of a lovely whale to escort your system. The whale is the king of the sea and the symbol of all-mighty power. With PC camera, Debug, CPU heat monitor and IrDA device built into the **EscoCAM**, we offers you the unbeatable solution to upgrade the value of your PC system.

1. PC Camera:

As video and audio email is gaining popularity, PC cameras are making inroads into PC systems and it will increasingly become a standard PC peripheral. In view of this strong market demand, we has timely launched its state-of-the-art PC cameras. Besides, our PC Camera is allowed to adjust the Focus of Camera via Keyboard or mouse instead of wheel. It's a patent design in PC Camera. Hope you enjoy this new technology.

2. External Debug :

When initializing system, LCD will check the peripherals of CPU, Chipset, DRAM, BIOS, Keyboard, CMOS, VGA card, Devices, FDD, HDD and Cache...Once peripherals were not been properly installed or defective, the LCD display will show out the detective place. After system successfully booted up, Time & Date, CPU

User's Manual

Temperature, CPU V-Core Voltage, CPU Fan Speed will take turn to show out on the LCD display.

Advantages of Debug Device For User:

In comply with fast development of IT and e-Commerce, the time of people to stay together with PC will be beyond what we can image. Eventually, the high density use of PC is unavoidable to cause high defect rate. Especially, when warranty is over, user will not be in a position to bargain the upraising repair cost. The worse is that users are always overcharged when they don't have any sense about defect status. However, once PC system is equipped with basic debugging devices, user is able to easily understand how far the hardware problem going; thereby drastically minimize the time and cost from RMA.

3. Monitor CPU Temp. And FAN Working Status:

Audio, video and multi-tasking functions call for faster and faster CPUs to improve system efficiency. However, faster CPUs will generate more heat which must be dissipated in a timely manner. Therefore, a more efficient fans to dissipate heat is as important as watch-out of fan working situation. In this Internet era, people are using their computers for longer and longer time which can easily cause overheat and damage to the CPU. Prolonged use of the computer will increase CPU temperature. It is therefore necessary to have a device to constantly monitor the CPU temperature, CPU fan speed and V-Core voltage and timely remind user.

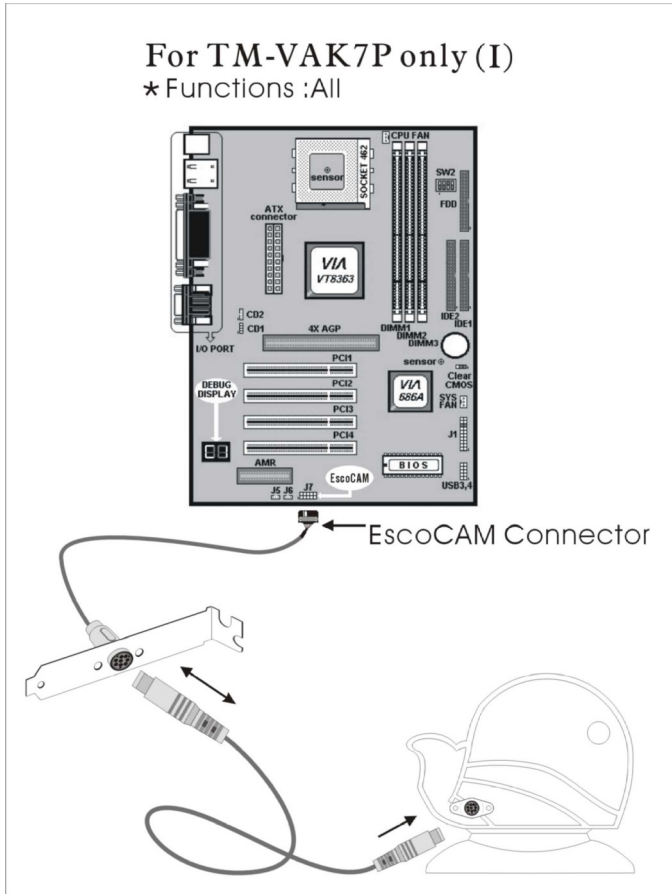
4. IrDA For Data Transmission :

As more and more computers, notebook, mobile phone and PDA are installed with the IrDA device for wireless transmission, we also developed its own IrDA device for this purpose.

The Connection of EscoCAM

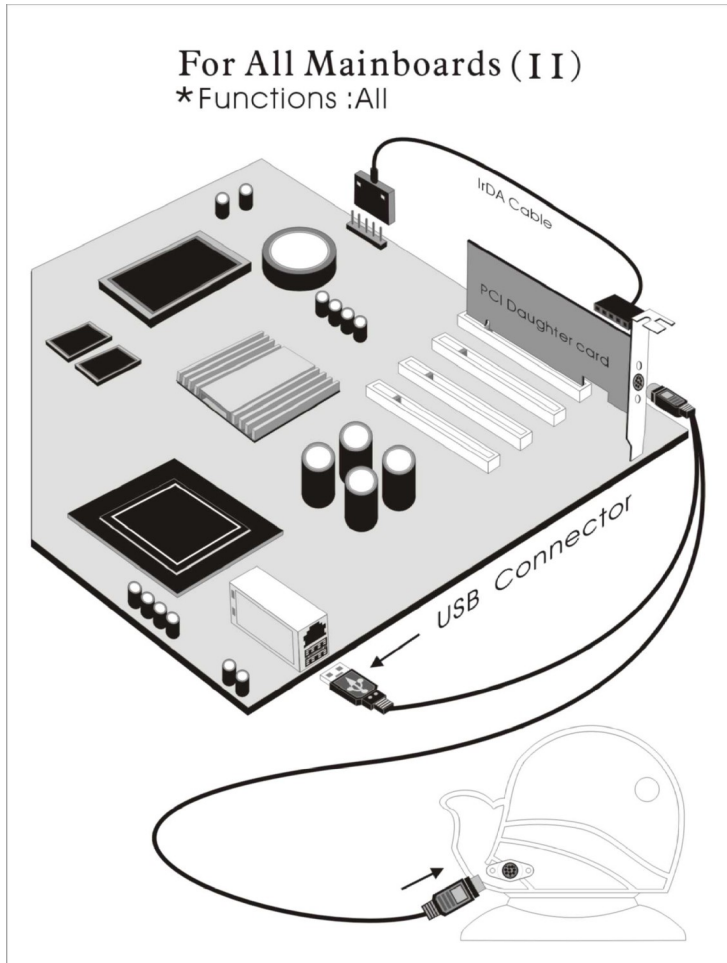
I. For TM-VAK7 Mainboard :

If you use TM-VAK7P, the most updated mainboard, it's already built-in all the circuit of EscoCAM so that user don't need a extra daughter card to connect it. The connection drawing as follows:

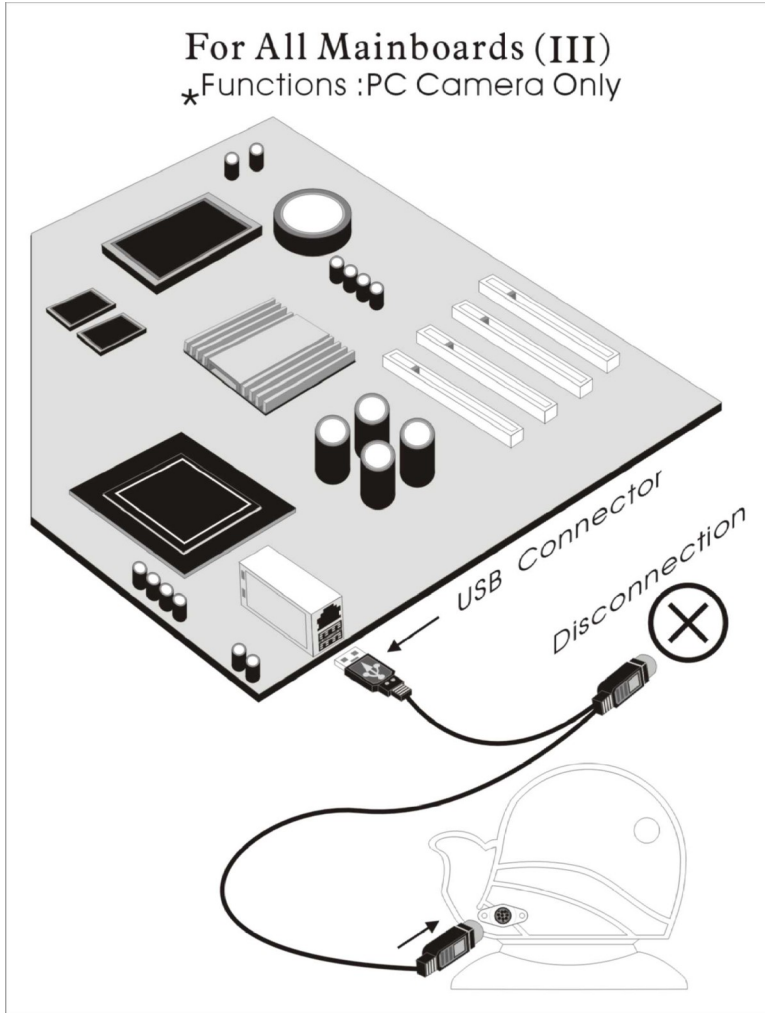


II. For All Others Mainboards:

If the mainboard you used is not TM-VAK7, you need A PCI daughter card to be inserted and make connection as follows:



III. Or, if you just want use the function of PC Camera, the connection drawing as follows:

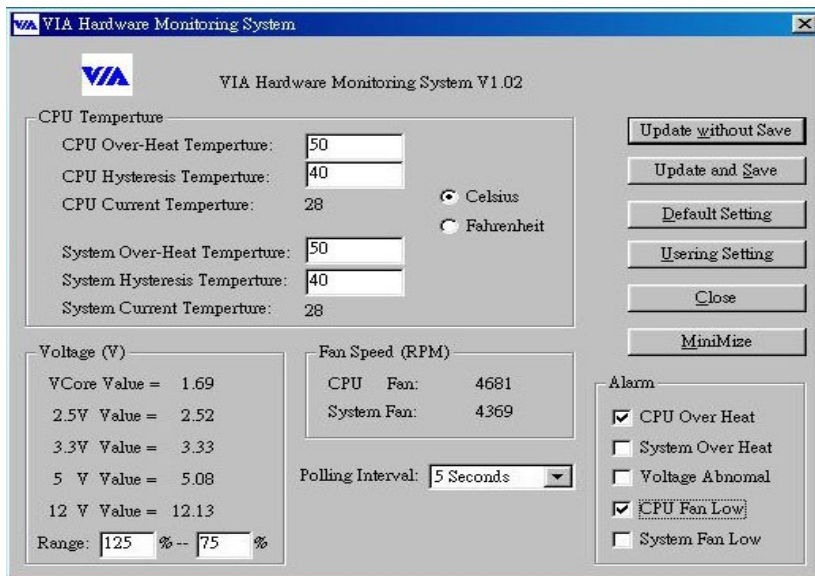


BIOS Update Note

Do not update the BIOS if no abnormalities occur. However, if BIOS update is needed, consult your dealer first. Prior to updating your BIOS, you are recommended to save the original BIOS values.

1. Download the AWARD BIOS Flash Utility file (**Awdflash.exe**)
2. Download the BIOS file used by your mainboard(e.g., **XXXXXXXX.BIN**)
3. **Reboot** your system (but do not run **Himem.sys** and **Emm386.exe**) to execute the new BIOS program.
4. Execute these commands: **Awdflash XXXXXXXX.BIN**
5. When this message displays: "**Do you want to save BIOS (Y/N)?**"
Type "**N**"
6. When this message displays: "**Are you sure to program (Y/N)?**"
Type "**Y**"

Hardware Monitor



- **Hardware Monitoring:** Installed **VIAhm.exe** in the start of system to enable this function.
 1. **CPU Temperature** : Display Current CPU temperature and will alarm when CPU temperature is higher than the set point.
 2. **System Temperature** : Display Current System temperature and will alarm when System temperature is higher than the set point.
 3. **CPU Fan Speed** : Display Current CPU Fan speed and will alarm when Fan speed is lower than the set point
 4. **Chassis Fan Speed** : Display Current Chassis Fan speed and will alarm when Chassis Fan speed is lower than the set point.

User's Manual

5. **CPU voltage level of the CPU V-Core** : Display 3.3V, 5V, 12V.

BIOS Setup

BIOS Setup

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

Getting Help

The online description of the highlighted setup function is displayed at the bottom of the screen.

The Main Menu

Once you enter BIOS CMOS Setup Utility, the Main Menu will appear on the Screen.. Use arrow keys to select the desired items, press <Enter> to select or enter a submenu.

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software	
<ul style="list-style-type: none">▶ Standard CMOS Features▶ Advanced BIOS Features▶ Advanced Chipset Features▶ Integrated Peripherals▶ Power Management Setup▶ PnP/PCI Configurations▶ Hardware Monitor	<ul style="list-style-type: none">▶ Frequency/Voltage Control<ul style="list-style-type: none">Load Best Performance DefaultsLoad Optimized DefaultsSet PasswordSave & Exit SetupExit Without Saving
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

BIOS Setup

Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into several categories. Each category includes no, 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.

CMOS Setup Utility – Copyright © 1984 – 2000 Award Software Standard CMOS Features	
Date (mm: dd: yy) :	Tue, May 15, 2000
Time (hh: mm: ss) :	14 : 01 : 42
IDE Primary Master :	Enter
IDE Primary Slave	Enter
IDE Secondary Master	Enter
IDE Secondary Slave	Enter
Drive A	1.44MB, 3.5"
Drive B	None
Video	EGA/VGA
Halt On	All, But Keyboard
Base Memory	640K
Extended Memory	48128K
Total Memory	49152K

↑↓←→ : Move Enter : Select +/-/PU/PD:Value : F10: Save ESC: Exit F1: General
Help F5: Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults

Date & Time	Use these items to set the system date and time
Pri Master	If the hard disk Promary Master/Slave and Secondary Master/Slave are set to Auto, then the hard disk size and model will be auto-detected. If the <i>Auto</i> setting fails to find a hard disk drive, set it to <i>User</i> , and then type in the hard disk .
Pri Slave	
Sec Master	
Sec Slave	
Floppy Drive A	Use these items to set the size and capacity of the floppy diskette drive(s).
Floppy Drive B	
Halt On	This field is used to determine when to halt the system by the BIOS if an error occurs.

BIOS Setup

Advanced BIOS Features Setup

Use this page to set more advanced information about your system. Take some care with this page. Making changes can affect the operation of your computer.

CMOS Setup Utility – Copyright © 1984-2000 Award Software Advanced BIOS Features	
Trend ChipAwayVirus	Enabled
CPU Internal Cache	Enabled
External Cache	Enabled
CPU L2 Cache ECC Checking	Enabled
Quick Power On Self Test	Enabled
First Boot Device	HDD0
Second Boot Device	Floppy
Third Boot Device	CD-ROM
Boot Other Device	Enabled
Swap Floppy Drive	Disabled
Boot Up Floppy Seek	Disabled
Boot Up NumLock Status	On
Gate A20 Option	Fast
Typematic Rate Setting	Disabled
Typematic Rate (Chars/Sec)	6
Typematic Delay (Msec)	250
Security Option	Setup
OS Select For DRMA > 64MB	Non-OS2
Video BIOS Shadow	Enabled

↑↓←→ : Move Enter : Select +/-/PU/PD:Value : F10: Save ESC: Exit F1: General
 Help F5: Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults

Trend ChipAway Virus

During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and an error message will appear. Keep in mind that this feature protects only the boot sector, not the entire hard drive. to Enable or Disable the built-in virus protection.

CPU Internal Cache

Use this item to control the status of CPU's internal Cache. When this item is Enabled, the CPU performance will be increased.

CPU External Cache

Use this item to control the status of CPU's external Cache. When this item is Enabled, the CPU performance will be increased.

ECC Checking

This item control if the CPU's L2 Cache will support Error Checking and Correcting (ECC).

BIOS Setup

	When Enabled, the CPU performance will decrease 2%-4%. Enabled is recommended.
Quick Power On Self Test	When Enabled this item, system will shorten or skip of the items checked during POST and to speeds up the Power On Self Test. When you are sure that your system hardware is smooth and stable enough, we recommend to enable this item for speeding up POST.
1st /2nd /3rd/ and Other Boot Device	The BIOS tries to load the operating system from the devices in the sequence of 1 st , 2 nd , 3 rd and other devices. The choice : HDD, FDD, CD-ROM, LS120, SCSI.
Swap Floppy Drive	This will swap your physical drive letters A & B when you are using two floppy disks. The default is Disabled.
Boot Up Floppy Seek	During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. Only 360K type is 40 tracks while 760K, 1.2MB and 1.44MB are all 80 tracks. The default is Disabled.
BootUp Num-Lock	This item control the NumLock key is active or inactive when system boots. On: The keypad Acts as a 10-key pad. Off: The keypad acts like the cursor keys.
Gate 20 Option	This refers to the way the system address memory above 1MB(extended memory). Default is Normal. Normal: The A20 signal is controlled by the keyboard controller or chipset hardware. Fast : The A20 signal is controller by Port 92 or chipset specific method.
Typematic Rate Setting	Use this item to determine to keystrokes repate rate. Default is Disabled. Enabled: Allows typematic rate and typematic

BIOS Setup

Delay programming.

Disabled: The typematic rate and delay will be
Controlled by the keyboard controller.

Typematic Rate (Chars/Sec.)

The number of characters will be repeated by a
keyboard press. The default is 6.

6: 10 characters per second.

24: 24 characters per second.

Typematic Delay (msec)

Setting controls the time between the first and
the second character displayed by typematic
auto-repeat. The default is 250.

250: 250 msec.

750: 750 msec.

Security Option

This allows you to limit access to the System
and Setup, or just to Setup. The default is
Setup.

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

Setup: The system will boot; but the access to
Setup will be denied if entered password is
incorrect.

OS Select for DRAM > 64MB

Use this option only if system has greater than
64MB. Default is Non-OS2.

OS2: Select this if you are running the OS/2
operating system with greater than 64MB.

Video BIOS Shadow

This allows video BIOS to be copied into RAM.
Video Shadowing will increase the video
performance of system. **Enabled** is defaulted.

C8000 - CBFFF
CC000 - CFFFF
D0000 - 3DFFF
D4000 - D7FFF
D8000 - DBFFF
DC000 - DFFFF
Shadow:

When enabled this Optional Shadow, the ROM
with the specified address is copied into system
DRAM. It will also reduce the size of memory
about 16K or 32K byte in the system. The size
depends on the chipset of the optional card.

BIOS Setup

Advanced Chipset Features Setup

This page sets some of the parameters of the mainboard components including memory and the system logic.

CMOS Setup Utility – Copyright © 1984-2000 Award Software Advanced Chipset Features	
Bank 0/1 DRAM Timing	SDRAM 8/10 ns
Bank 2/3 DRAM Timing	SDRAM 8/10ns
SDRAM 4/5 DRAM Timing	SDRAM 8/10ns
SDRAM Cycle Length	3
DRAM Clock	Host CLK
P2C/C2P Concurrency	Enabled

BIOS Setup

Fast R-W Turn Around	Disabled
System BIOS Cacheable	Enabled
Video RAM Cache able	Enabled
Frame Buffer Size	16MB
AGP Aperture Size	64MB
AGP-4X Mode	Enabled
AGP Driving Control	Auto
AGP Driving Value	DA
OnChip USB	Enabled
USB Keyboard Support	Disabled
OnChip Sound	Auto
OnChip Modem	Auto
CPU to PCI Write Buffer	Enabled
PCI Dynamic Bursting	Enabled
PCI Master 0 WS Write	Enabled
PCI Delay Transaction	Disabled
PCI #2 Access PCI #1 Retry	Enabled
AGP Master 1 WS Write	Disabled
AGP Master 1 WS Read	Disabled

↑↓←→ : Move Enter : Select +/-/PU/PD: Value : F10: Save ESC: Exit F1: General
 Help F5: Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults

Bank 0/1 2/3 4/5 DRAM Timing	The value in this field is set by the system board manufacturer, depending on whether the board has pagged DRAMs or EDO DRAMs.
SDRAM Cycle Length	This setting defines the CAS timing parameter of the SDRAM in terms of clocks. Default is 3. 2: Provides faster memory performance. 3: Provides better memory compatibility.
DRAM Clock	Enables the user to select the DRAM Clock.
P2C/C2P Cncurrency	When this item is disabled, the CPU bus is occupied during the entire PCI operation. en powered down. Default is Enabled.
Fast R-W Turn Around	When this item is enabled, the chipset will insert one extra clock to the turn-around of back-back DRAM cycles.
System BIOS Cacheable	This allows to copy BIOS code from slow ROM to fast RAM. Default is Enabled.???? Enabled : This option will improve system performance. However, if any program writes to this memory area, a system error may result.
Video RAM Cacheable	This allows to copy the video ROM BIOS to fast RAM (C000h to C7FFFh).

BIOS Setup

	Enabled : Enabled the Video BIOS Cacheable to speed up the VGA performance.
AGP Aperture Size	The amount of system memory that the AGP card is allowed to share. Default is 64MB.
AGP 4X Mode	Options : x1, x2, x4 Enable this item can greatly improve the display speed. However, if your graphic card does not support this feature, you need to disable.
AGP Driving Control	This item allows you to adjust the AGP driving force. If you select Manual, you can key in a AGP Driving Value in next item. However, we recommend to set in Auto for avoiding any error in your system.
AGP Driving Value	This item allows to set the AGP current driving value.
OnChip USB/USB2	USB Connector (Port 0-1)/(Port 2-3)
USB Keyboard Support	Enables this item, when USB keyboard is being Used. Disabled it, when AT keyboard is used.
OnChip Sound	Turn on/off onchip sound device.
CPU to PCI Write Buffer	When Enabled, up to four D words of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals that it is ready to receive the data.
PCI Dynamic Bursting	When Enabled, data transfers on the PCI bus will make use of the high performance PCI bus protocol, in which greater amounts of data are transferred at a single command.
PCI Master 0 WS Write	When Enabled, writes the PCI bus are command with 0 wait states.
PCI Delay Transaction	The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specifications version 2.1.
PCI#2 Access#1 Retry	This item allows you enable/disable the PCI#2 Access #1 Retry.

BIOS Setup

Integrated Peripherals Setup

This page sets some of the parameters for peripheral devices connected to the system.

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software			
Integrated Peripherals			
OnChip IDE Channel 0			: Enabled
OnChip IDE Channel 1			: Enabled
IDE Prefetch Mode			: Enabled
Primary Master	PIO		: AUTO
Primary Slave	PIO		: AUTO
Secondary Master	PIO		: AUTO
Secondary Slave	PIO		: AUTO
Primary Master	UDMA		: AUTO
Primary Slave	UDMA		: AUTO

BIOS Setup

Secondary Master	UDMA	: AUTO
Secondary Slave	UDMA	: AUTO
Init Display First		: PCI Slot
OnBoard FDD controller		: Enabled
OnBoard Seriral Port 1		: 3F8 / IRQ4
OnBoard IR Port		: Disabled
UART 2 Mode		: Standard
▸ IR Function Duplex		: Half
▸ TX,RX inverting enable		: No, Yes
Onboard Parallel Port		: 378/IRQ7
Onboard Parallel Mode		: Normal
▸ ECP Mode Use DMA		: 3
▸ Parallel Port EPP Type		: EPP1.9
OnBoard Legacy Audio		: Enabled
Sound Blaster		: Disabled
SB I/O Base Address		: 220H
SB IRQ Select		: IRQ5
SB DMA Select		: DMA1
MPU-401		: Enabled
MPU-401 I/O Address		: 330-333H
Game Port (200-207H)		: Enabled

↑↓←→ : Move Enter : Select +/-/PU/PD:Value : F10: Save ESC: Exit F1: General
 Help F5: Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults

On-Chip IDE Channel 0, 1

Channel 0 is to enable On Chip IDE Primary port. Channel 1 is to enable On Chip IDE Secondary Port.

IDE Prefetch Mode

Enable prefetching for IDE drive interfaces that support its faster access. If you are getting disk drive errors, change the setting to remove the drive interface where the error occur. The error will be appear when the Internal PCI/IDE fiel is Disabled.

Primary/ Secondary Master/Slave PIO

The Default is Auto.
 Auto: BIOS will automatically detect the Onboard PCI IDE accessing mode.
 Mode 0-4: Manually set the IDE programmed interrupt mode.

Primary/ Secondary Master/ Slave UDMA

This allows you to select the mode of operation for the hard drive. The default is Auto.
 Auto: The computer will select the optimal setting.
 Disabled: The hard drive will run in normal

BIOS Setup

mode.

Init Display First

If two graphic devices used (1xAGP, 1x PCI), this specifies which one will be the primary display. The default is PCI Slot.

PCI Slots : PCI graphic will be Primary.

AGP : AGP graphic will be Primary.

Onboard FDD Controller

This item controls the state of Onboard floppy controller. Default is Enabled.

Enabled: Enable Onboard VIA686A Chip's FDD interface controller.

OnBoard Serial Port 1

This items allow user to configure the 1 Default is Auto.

Atuo: Enable Onboard Serial Port 1 and address is auto adjusted.

COM1: Enable Onboard Serial Port 1 and address is 3F8H/IRQ4.

COM2: Enable Onboard Serial Port 1 and address is 2F8H/IRQ3.

COM3: Enable Onboard Serial Port 1 and address is 3E8H/IRQ4.

COM4: Enable Onboard Serial Port 1 and address si 2E8H/IRQ3.

OnBoard IR Port

Enable or Disable Port 2 for IR.

UATR2 Mode

This field is available only if Onboard Serial Port 2 is Disabled. UART mode enables you to select the Infrared protocol – **Standard (default)**, HPSIR or ASKIR. HPSIR is HP's IR protocol with a maximum baud rate up to 115.2Kbps. ASKIR is Sharp's IR protocol with a maximum baud rate up to 57.6Kbps.

IR Function Duplex

This field is only available when UART2 is set to ASKIR or HPSIR. Full-Duplex means that you can transmit and receive data simultaneously. Half Duplex transmitting data in both direction but only works one direction at a time.

BIOS Setup

TX, RX Inverting enable	Defines the voltage level in accordance to the IR module RxD(receive) and TxD(transmit) mode.
OnBoard Parallel Port	<p>This item allows user to configure the LPT port. Default is 378H/IRQ7.</p> <p>378H: Enable Onboard LPT and address is 378H/IRQ7.</p> <p>278H: Enable Onboard LPT and address 278H/IRQ5.</p> <p>3BCH: Enable Onboard LPT and address is 3BCH/IRQ7.</p> <p>Disabled: Disable Onboard I/O chip's LPT port.</p>
Onboard Parallel Port Mode	<p>Use this item to set the parallel port mode. You can select SPP (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or ECP + EPP.</p> <p>Default is Normal.</p> <p>Normal: Standard mode. IBM PC/AT Compatible bidirectional parallel port.</p>
ECP Mode Use DMA	This allows the user to select DAM1 or DMA3 for the ECP mode. Default is DMA3.
Parallel Port EPP Type	<p>This allows you to determine the IR transfer mode of onboard I/O chip.</p> <p>The Choice is : EPP 1.9, EPP 1.7.</p>
OnBoard Legacy Audio	When Enabled legacy audio, following setup items for SB become available.
Sound Blaster	Enable Sound Blaster compatible device is usually for DOS environment.
SB I/O Base Address	Sound Blaster I/O selection.
SB IRQ Select	Legacy audio device IRQ selection
SB DMA Select	Sound Blaster DMA channel selection.
MPU-401, MPU-401 I/O address	Use this two items to enable MPU-401 function and set the I/O address for the game port.
Game Port (200-	Built-in joystick port . Default is Enabled.

BIOS Setup

207H)

Power Management Setup

This page sets some of the parameters for system power management operation.

CMOS Setup Utility – Copyright © 1984-2000 Award Software	
Power Management Setup	
Power Management	Press Enter
ACPI Suspend Type	S1(POS)
PM Control by APM	Yes
Video Off Option	Suspend → Off
Video Off Method	DPMS Support
MODEM use IRQ	3
Soft-Off by PWRBTN	Delay 4 Sec
State After Power Failure	Off
Wake Up Events	Press Enter

↑↓←→ : Move Enter : Select +/-/PU/PD:Value : F10: Save ESC: Exit F1: General
Help F5: Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults

Power Management/APM

This field allows you to select your Power Management selection. **Default is User Define. Disabled** : The system operates in

BIOS Setup

NORMAL conditions.

Min. saving : Minimum power savings.

Inactivity period is 1 minute in each mode.

Max. saving : Maximum power savings.

Inactivity period is 1 hour in each mode.

ACPI Function

This field allows you to select ACPI function.

Enabled : Support ACPI function for new O.S.

Disabled: No support ACPI function.

You can only change the content of Doze, Standby and Suspend Mode when the PM is set to "User Define".

User Define : Allows user to define PM Timers parameters to control power saving mode.

ACPI Suspend Type

This item allows to select S1(POS), S3(STR).nutes. If the setup time passes without any system activity, the computer will enter into power-saving.Suspend mode.

PM controlled by APM

This option shows weather or not you want the Power Management to be controlled by APM (Advanced Power Management). Default is Yes.

Video Off Option

This tells you what time frame that the video will be disabled under current PM setting. The default is Standby.

Standby: Video off after time shown in standby mode setting.

Doze : Video off after time shown in doze mode setting.

Suspend : Video off after time shown in suspend mode setting.

N/A: Video off not controlled by PM.

BIOS Setup

Video Off Method	<p>This item shows how the video will be disabled by PM. The default is V/H Sync + Blank.</p> <p>V/H Sync + Blank : System turns off vertical and horizontal synchronization ports and writes blanks to the video buffer.</p> <p>DPMS :</p> <p>Select this option if your monitor supports the Display Power Management Signaling (DPMS). Use the software supplied for your video subsystem to select video PM value.</p> <p>Blank Screen : System only writes blanks to the video buffer.</p>
MODEM Use IRQ	<p>Use this item to specify the IRQ used by the Modem to awaken the system upon the incoming call on a Modem. Default is IRQ3.</p>
Soft-Off By PWRBTN	<p>Use this item to select soft-off function. Default is Delay 4 sec.</p> <p>Instant Off : Turns off the system instantly.</p> <p>Delay 4 Second : Turns off the system after 4 seconds delay (by holding the power button down for 4 seconds). If momentary press of button, the system will go into Suspend Mode. Press the power button again to take system out of Suspend Mode.</p>
State After Power Failure	<p>This item allows you to determine the state that system returns after a power failure. If set to Off, the system won't boot after a power failure, if set to On, the system will restart after a power failure.</p>
Wake Up Events	<p>This item opens a submenu enables you to set events that will resume the system from a power saving mode. Press Enter for the availability of the following items:</p> <p>VGA : When set to On (default), any event occurring at a VGA port will awaken a system which has been powered down.</p> <p>LPT & COM, HDD & FDD, PCI Card, Modem</p>

BIOS Setup

Ring Resume & Primary INTR are the same in operation.

RTC Alarm Resume: When enable RTC Alarm, you could set the date (of month) and time (hh:mm:ss), and event occurring at will awaken a system which has been powered down.

PCI / Plug and Play Setup

This page sets some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.

CMOS Setup Utility – Copyright © 1984-2000 Award Software
PnP/PCI Configurations

PNP OS Installed	Yes
Reset Configuration Data	Disabled
Resources Controlled by	Auto (ESCD)

BIOS Setup

IRQ Resources	Press Enter
DMA Resources	Press Enter
PCI/VGA Palette Snoop	Disabled

↑↓←→ : Move Enter : Select +/-/PU/PD:Value : F10: Save ESC: Exit F1: General
 Help F5: Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults

PnP OS Installed	Do you have a PnP OS installed on your system. The default is Yes and this will allows the PnP OS(instead of BIOS) to assign the system resources such as IRQ and I/O address to the ISA PnP device.
Reset Configuration Data	This item allows you to clear ESCD (Extended System Configuration Data). Default is Disabled. If you have plugged in some Legacy cards to the system and they were recorded into ESCD, you can set here Enabled in order to clear ESCD.
Resources Controlled By	Who Controlled the system PNP/PCI resources. The default is Auto. Manual : PnP card's resources will be controlled manually. You can set which IRQ-X and DMA-X are assigned to PCI/ISA or Legacy ISA cards. Auto: If you ISA card and PCI card are all PnP cards, BIOS will assign the interrupt resource automatically.
PCI/VGA Palette Snoop:	This item is set for some non-standard VGA cards. However most of cards include this built-in VGA system do not require palette Snoop so that leave it disabled.
Assign IRQ for VGA/USB	This allows BIOS to assign whether IRQ is with VGA/USB or not. If don't need to connect VGA/USB device, can leave the IRQ for other device.
INT Pin 1,2,3,4	This field allows user to specify what IRQ will be

BIOS Setup

Assignment

assigned to PCI devices in the chosen slot.
Options available : Auto 3, 4,5,7,9,10,11,12,14 &
15. The default is Auto.

Hardware Monitor

This page sets some of the parameters for the monitoring function of this mainboard.

SMOS Setup Utility – Copyright © 1984-2000 Award Software
Hardware Monitor

Current CPU Temp

32°C / 89°F

BIOS Setup

Current System Temp.	38°C/100°F
Current CPUFAN1 Speed	4615 RPM
Current CPUFAN2 Speed	0 RPM
Vcore	2.08 V
2.5V	2.60 V
3.3V	3.41 V
5V	5.10 V
12V	12.36 V

↑↓←→ : Move Enter : Select +/-/PU/PD:Value : F10: Save ESC: Exit F1: General
 Help F5: Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults

Shutdown Temperature	This allows you to set the acceptable temperature point.
Current CPU Temp.	This is the current temperature of CPU.
Current System Temp.	This is the current temperature of system.
Current CPU FAN1 Speed	The current CPU fan speed in RPMs.
Current CPU FAN2 Speed	The current chassis fan speed in RPMs.
Vcore	The voltage of the CPU (Vcore)
3.3V	Onboard voltage
5V	Power Supply 5 V
12V	Power Supply 12 V

CPU Frequency/Voltage Control

CMOS setup Utility – Copyright © 1984 – 2000 Award Software
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	Enabled
Spread Spectrum	Disabled
CPU Type	

BIOS Setup

CPU Speed	Manual
CPU Ratio	x 3
CPU Frequency	Default
CPU Core Voltage	2.08 V

↑↓←→ : Move Enter : Select +/-/PU/PD:Value : F10: Save ESC: Exit F1: General
Help F5: Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults

Auto Detct DIMM/PCI Clk

When Enabled, the mainboard will automatically disable the clock source for a DIMM socket which does not have a module in it. The default is Enabled.

CPU Spread Spectrum

This allows the external clock to be modified depending upon what FSB has been selected. Should not be used to clock processor faster than it was designed for. Default is Disable.

CPU Ratio, Frequency.

Use this item to set a multiplier for the CPU external frequency. The multiplier times the external CPU frequency sets the internal clock speed of the CPU, e.g. 100 MHz (external clock or "FSB") x 65 (multiplier) = 60 MHz (internal clock speed of the installed CPU). This show the PU speed

Load Best Performance Settings

When you press <Enter> on this item, a dialog box appears as below:

Load Best Performance (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal-

BIOS Setup

performance system operations.

Load Optimized Defaults

When you press **<Enter>** on this item you get a confirmation dialog box with a message likely to :

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory settings for optimal performance system operation.

Change Password

Type the password, up to 8 characters in length, and press **<Enter>**. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password once again. Now, type the password again and press **<Enter>**. You may also press **<ESC>** to abort the password set up. Once the password is disabled, the system will boot and you can enter **Setup** freely. If you highlight this item and press **Enter**, a dialog box appears which lets you enter a **Supervisor**

BIOS Setup

password. You can enter no more than 8 letters or numbers. Press <Enter> after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press <Enter> after you have retyped it correctly. The password is then required to access the Setup Utility or for that and at start-up, depending on the setting of the Password Check item in Advanced Setup.

Change or Remove the Password

For Changing password, you need to press <Enter> and enter the current password. At the next dialog box, type in the new password. To disable a password, just press <Enter> when you are requested to entered the password . A message to confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter setup freely.

Exit Selecting

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

BIOS Setup

Pressing 'Y' stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selection stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit Setup without storing in CMOS any change. The previous selection remain in effect. This exits the Setup utility and restarts your computer

Driver & Software

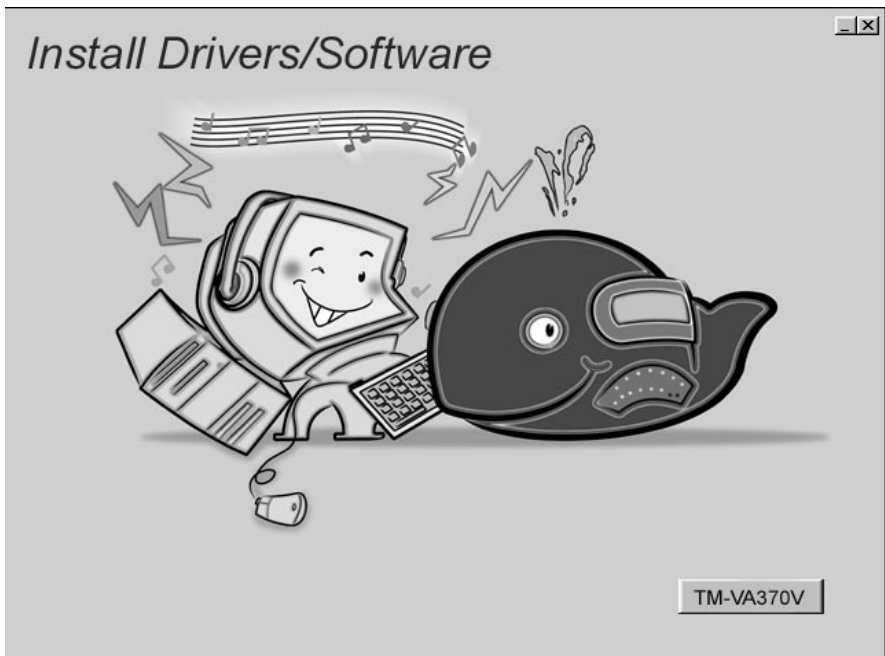
Driver & Software

Installation Guide

This driver is for Windows 95/NT/2000 and Win. 98. Aside from the installation procedure differs from the Operating System used, **the automatic installation is only available for Windows 98.**

Quick Installation under Windows 98

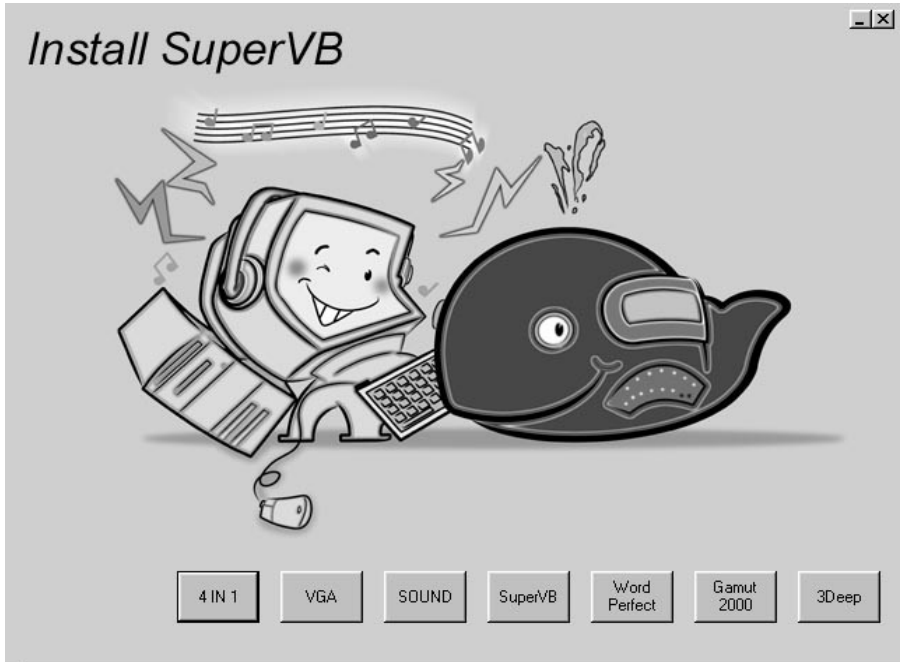
When insert the CD-ROM disc in the system CD-ROM drive, the set up feature will automatically come up the screen with buttons for selecting mainboard models' name **as follows:**



Driver & Software

Browse All The Drivers in CD

After selecting mainboard model name, all the available drivers will appears on the screen as follows:



Driver & Software

How to install Windows 95/NT/2000 ?

The procedure :

1. Insert the support CD-ROM disc in the CD-ROM drive.
(Just bypass the error message from the PnP function.)
2. Since **quick installation** is not supported by Windows 95/NT/2000, you have to select correct drivers and **EXE** given file names as follows:

VIA 4 IN 1 Driver V4.24

✓ Win9x - \4IN1V424\SETUP.EXE

USB Driver

Win95 - \OTHERS\USB\EUSBSUPP\USBSUPP.EXE

Win95(Chinese) - \OTHERS\USB\CUSBSUPP\CUSBSUPP.EXE

Audio Driver

✓ DOS & Windows 3.x - \SOUND\VIA\DOS\

✓ Linux - \SOUND\VIA\LINUX\

✓ Windows 9x - \SOUND\VIA\WIN9X\

✓ Windows 98SE - \SOUND\VIA\WIN98SE\

✓ Windows NT - \SOUND\VIA\WINNT40\DRV\

✓ Windows 2000 - \SOUND\VIA\WIN2000\

Audio Applications

✓ Windows 9x - \GAMUT\SETUP.EXE

Display Drivers and Software

✓ Linux - \VGA\VA370V\LINUX\

✓ Windows 9x - \VGA\VA370V\WIN9X\SETUP.EXE

✓ Windows NT - \VGA\VA370V\WINNT40\

✓ Windows 2000 - \VGA\VA370V\WIN2K\

✓ Windows ME - \VGA\VA370V\WINME\

Driver & Software

3Deep

\3DEEP\3DEEP 3.3\SETUP\SETUP.EXE

Corel WordPerfect Suite 8

\CD1\COREL\SUITE8\APPMAN\SETUP\SETUP.EXE

BIOS Update

\UTILITY\AWDFL763.EXE

Super VB Software

This software provides anti-virus protection PC.

\SUPERVB\AUTO.EXE

Further Guide to Audio Software :

Driver & Software

1. Making sure the Operating System has been properly installed prior to the installation of the PCI Sound Drivers. Otherwise, the Onboard PCI Audio might be recognized as an “**Other Device**”.
2. For featuring Wave-Table drivers as a MIDI output device, just select **MULTIMEDIA** from the Control Panel. Select the **MIDI tab** → Click “**C-media SoftMidi Synthesis (Win 98) / Driver (Win 95)**” → Click **OK** to complete.
3. **Audio Rack**, a Windows application, is provided to control all the Audio functions for simply working as a high quality home stereo system.
4. For featuring MIDI port as the control interface, just select **MULTIMEDIA** from the Control Panel. Select the **MIDI tab** → Click “**C-M8738 MPU-401**” (**Win 98**) or “**DM8738/C3DX PCI Audio External MIDI Port**” (**Win 95**) → Click **OK** to complete.

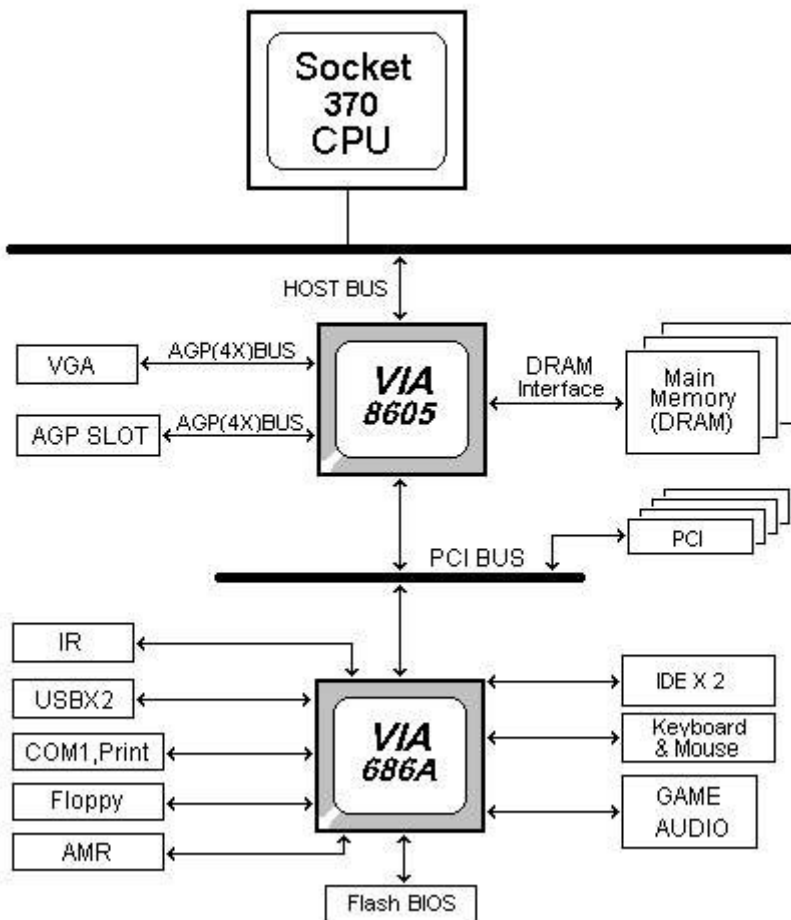
The Four Speakers System

This onboard Audio System supports 2 wave channels (Front/rear) known as the 4 speakers system. For achieving simulation of realistic 3D sound effect through a 4 speakers, just to run applications which is featured with **DirectSound 3D** or **A3D Audio** interface.

Mixer Setup

After setting up the **PCI Audio Application**, a 4-speakers option appears in the Mixer. Just click on the **4 Speakers** icon to achieve this option. The rear speakers will output only via Line-in/Rear jack now. So, when Line-in/Rear jack is occupied by a Line-in device, **Do Not** enable this option to avoid hardware conflict.

System Block Diagram



Technical Information

Award BIOS 6.0 POST Code :

POST (HEX)	Description
CFh	Test CMOS R/W functionality.
C0h	Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers
C1h	Detect memory -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below)
C3h	Expand compressed BIOS code to DRAM
C5h	Call chipset hook to copy BIOS back to E000 & F000 shadow RAM.
01h	Expand the Xgroup codes locating in physical address 1000:0
02h	Reserved
03h	Initial Superio Early Init switch.
04h	Reserved
05h	1. Blank out screen 2. Clear CMOS error flag
06h	Reserved
07h	1. Clear 8042 interface 2. Initialize 8042 self-test
08h	1. Test special keyboard controller for Winbond 977 series Super I/O chips. 2. Enable keyboard interface.
09h	Reserved
0Ah	1. Disable PS/2 mouse interface (optional). 2. Auto detect ports for keyboard & mouse followed by a port & interface swap (optional). 3. Reset keyboard for Winbond 977 series Super I/O chips.
0Bh	Reserved

Technical Information

POST (HEX)	Description
0Ch	Reserved
0Dh	Reserved
0Eh	Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.
0Fh	Reserved
10h	Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support.
11h	Reserved
12h	Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.
13h	Reserved
14h	Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.
15h	Reserved
16h	Initial onboard clock generator if Early_Init_Onboard_Generator is defined. See also POST 26h.
17h	Reserved
18h	Detect CPU information including brand, SMI type (Cyrix or Intel) and CPU level (586 or 686).
19h	Reserved
1Ah	Reserved
1Bh	Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS soft HDLR.
1Ch	Reserved
1Dh	Initial EARLY PM INIT switch.
1Eh	Reserved
1Fh	Load keyboard matrix (notebook platform)
20h	Reserved
21h	HPM initialization (notebook platform)
22h	Reserved
23h	Check validity of RTC value:

Technical Information

	<p>e.g. a value of 5Ah is an invalid value for RTC minute.</p> <p>2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead.</p>
24h	<p>Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information.</p>
25h	<p>Early PCI Initialization:</p> <ul style="list-style-type: none"> -Enumerate PCI bus number. -Assign memory & I/O resource -Search for a valid VGA device & VGA BIOS, and put it into C000:0
26h	<p>1. If Early_Init_Onboard_Generator is not defined Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots.</p> <ol style="list-style-type: none"> 1. Init onboard PWM 2. Init onboard H/W monitor devices
27h	<p>Initialize INT 09 buffer</p>
28h	<p>Reserved</p>
29h	<ol style="list-style-type: none"> 1. Program CPU internal MTRR (P6 & PII) for 0-640K memory address. 2. Initialize the APIC for Pentium class CPU. 3. Program early chipset according to CMOS setup. Example: onboard IDE controller. 4. Measure CPU speed.
2Ah	<p>Reserved</p>
2Bh	<p>Invoke Video BIOS</p>
2Ch	<p>Reserved</p>
2Dh	<ol style="list-style-type: none"> 1. Initialize double-byte language font (Optional) 2. Put information on screen display, including Award title, CPU type, CPU speed, full screen logo.
2Eh	<p>Reserved</p>
2Fh	<p>Reserved</p>
30h	<p>Reserved</p>
31h	<p>Reserved</p>
32h	<p>Reserved</p>
33h	<p>Reset keyboard if Early_Reset_KB is defined e.g. Winbond 977 series Super I/O chips. See also POST 63h.</p>

Technical Information

34h	Reserved
35h	Test DMA Channel 0
36h	Reserved
37h	Test DMA Channel 1.
38h	Reserved
39h	Test DMA page registers.
3Ah	Reserved
3Bh	Reserved
3Ch	Test 8254
3Dh	Reserved
3Eh	Test 8259 interrupt mask bits for channel 1.
3Fh	Reserved
40h	Test 8259 interrupt mask bits for channel 2.
41h	Reserved
42h	Reserved
43h	Test 8259 functionality.
44h	Reserved
45h	Reserved
46h	Reserved
47h	Initialize EISA slot
48h	Reserved
49h	<ol style="list-style-type: none"> 1. Calculate total memory by testing the last double word of each 64K page. 2. Program write allocation for AMD K5 CPU.
4Ah	Reserved
4Bh	Reserved
4Ch	Reserved
4Dh	Reserved
4Eh	<ol style="list-style-type: none"> 1. Program MTRR of M1 CPU 2. Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range. 3. Initialize the APIC for P6 class CPU. 4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.
4Fh	Reserved
50h	Initialize USB Keyboard & Mouse.

Technical Information

51h	Reserved
52h	Test all memory (clear all extended memory to 0)
53h	Clear password according to H/W jumper (Optional)
54h	Reserved
55h	Display number of processors (multi-processor platform)
56h	Reserved
57h	<ol style="list-style-type: none"> 1. Display PnP logo 2. Early ISA PnP initialization -Assign CSN to every ISA PnP device.
58h	Reserved
59h	Initialize the combined Trend Anti-Virus code.
5Ah	Reserved
5Bh	(Optional Feature) Show message for entering AWDFLASH.EXE from FDD (optional)
5Ch	Reserved
5Dh	<ol style="list-style-type: none"> 1. Initialize Init_Onboard_Super_IO 2. Initialize Init Onbaord AUDIO.
5Eh	Reserved
5Fh	Reserved
60h	Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility.
61h	Reserved
62h	Reserved
63h	Reset keyboard if Early_Reset_KB is not defined.
64h	Reserved
65h	Initialize PS/2 Mouse
66h	Reserved
67h	Prepare memory size information for function call: INT 15h ax=E820h
68h	Reserved
69h	Turn on L2 cache
6Ah	Reserved

Technical Information

6Bh	Program chipset registers according to items described in Setup & Auto-configuration table.
6Ch	Reserved
6Dh	<ol style="list-style-type: none"> 1. Assign resources to all ISA PnP devices. 2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO".
6Eh	Reserved
6Fh	<ol style="list-style-type: none"> 1. Initialize floppy controller 2. Set up floppy related fields in 40:hardware.
70h	Reserved
71h	Reserved
72h	Reserved
73h	(Reserved)
74h	Reserved
75h	Detect & install all IDE devices: HDD, LS120, ZIP, CDROM.....
76h	(Optional Feature) Enter AWDFLASH.EXE if: -AWDFLASH.EXE is found in floppy drive. -ALT+F2 is pressed.
77h	Detect serial ports & parallel ports.
78h	Reserved
79h	Reserved
7Ah	Detect & install co-processor
7Bh	Reserved
7Ch	Init HDD write protect.
7Dh	Reserved
7Eh	Reserved
7Fh	Switch back to text mode if full screen logo is supported. -If errors occur, report errors & wait for keys -If no errors occur or F1 key is pressed to continue: ♦Clear EPA or customization logo.
80h	Reserved
81h	Reserved
E8POST.ASM starts	
82h	<ol style="list-style-type: none"> 1. Call chipset power management hook. 2. Recover the text fond used by EPA logo (not for full screen

Technical Information

	logo) 3. If password is set, ask for password.
83h	Save all data in stack back to CMOS
84h	Initialize ISA PnP boot devices
85h	1. USB final Initialization 2. Switch screen back to text mode
86h	Reserved
87h	NET PC: Build SYSID Structure.
88h	Reserved
89h	1. Assign IRQs to PCI devices 2. Set up ACPI table at top of the memory.
8Ah	Reserved
8Bh	1. Invoke all ISA adapter ROMs 2. Invoke all PCI ROMs (except VGA)
8Ch	Reserved
8Dh	1. Enable/Disable Parity Check according to CMOS setup 2. APM Initialization
8Eh	Reserved
8Fh	Clear noise of IRQs
90h	Reserved
91h	Reserved
92h	Reserved
93h	Read HDD boot sector information for Trend Anti-Virus code
94h	1. Enable L2 cache 2. Program Daylight Saving 3. Program boot up speed 4. Chipset final initialization. 5. Power management final initialization 6. Clear screen & display summary table 7. Program K6 write allocation 8. Program P6 class write combining
95h	Update keyboard LED & typematic rate
96h	1. Build MP table 2. Build & update ESCD 3. Set CMOS century to 20h or 19h 4. Load CMOS time into DOS timer tick

Technical Information

	5. Build MSIRQ routing table.
FFh	Boot attempt (INT 19h)

Technical Information

A. Problem Sheet

Customer			
Name		Tel	
address		Fax	

Mainboard			
Mode		Mainboard Rev	
Serial No.		BIOS version	

Configuration					
CPU	Brand		RAM	Brand	
	Type			Type & Size	
	Voltage			Speed	
Floppy disk	Brand		VGA card	Brand	
	Mode			Chipset	
	Size			RAM Type	
Hard disk	Brand		CD-ROM	Brand	
	Mode			Mode	
	Size			Speed	
Sound card	Brand		Lan card	Brand	
	Mode			Mode	
	Remark			PCI/ISA Bus	
Mouse	Brand		O.S	Brand	
	Mode			Name	
	PS/2 or Serial			Version	
Autoexec.bat			Config.sys		

Problem Description	

MEMO