

TM-VAK7P
PCI/ AGP Mainboard
Onboard Debug

Version: 1.0

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Overview

The TM-VAK7P is a AMD Athlon based mainboard that utilizes VIA KT133 + 686A chipset, a high level of integrated function. The AMD Athlon is a seventh-generation micro architecture with an integrated L2 Cache, which is powerful enough to support bandwidth requirements of a large range of applications, hardware, graphics and memory technologies.

Socket A is the name for AMD's new socketed interace designed to support both AMD Duron and AMD Athlon processors. This innovation is made possible by integrating the L2 cache memory on chip with the processor. Socket A will help enable smaller enclosures and ultimately result in a wider variety of solutions in the market.

The AMD Duron processor is driven from the AMD Athlon processor core. It features full-speed, on-chip cache memory, a 200 MHz front side system bus, and enhanced 3Dnow! Technology. Although both processors are related, there are key differences. The AMD Athlon processor is targeted at the performance segment, and as such will have more cache memory and higher clock speeds.

The most unique feature of the board is its capability to debug onboard or externally via the connection of 3-in-1 module (Referring to page).

XXXXXXXXXXXXXXXXXX

When the CPU, DRAM, FDD, or VGA cards have not been properly installed, a DIY user can isolate problems through reading the Debug display and instructions in the manual. To professional system test engineers or maintenance engineers, the Debug display can work as an 80 Port Debug Card. In other words, they can use this debug sensor function to do testing and maintenance in lieu of the 80 Port Debug card.

CONTENTS

COPYRIGHT	2
DISCLAIMER	2
OVERVIEW	3
CONTENTS	4
INTRODUCTION	6
A.SPECIFICATIONS.....	5
SETUP GUIDE	7
A.LAYOUT DIAGRA.....	7
B.JUMPER SETTINGS.....	8
C.SMART DEBUG ON BORAD.....	9
D.CPU VOLTAGE AND FREQUENCIES.....	13
E.EDO/ SDRAM INSTALLATION PROCEDURES:.....	13
F.CHECK LIST TO BIOS UPDATE.....	12
G. KEYBOARD PS/2 MOUSE POWER ON AND MODEM RING ON..	13
H. SYSTEM HEALTH MONITOR.....	15
AWARD BIOS SETUP	17
A.GETTING HELP.....	18
B.THE MAIN MENU.....	18

User's Manual

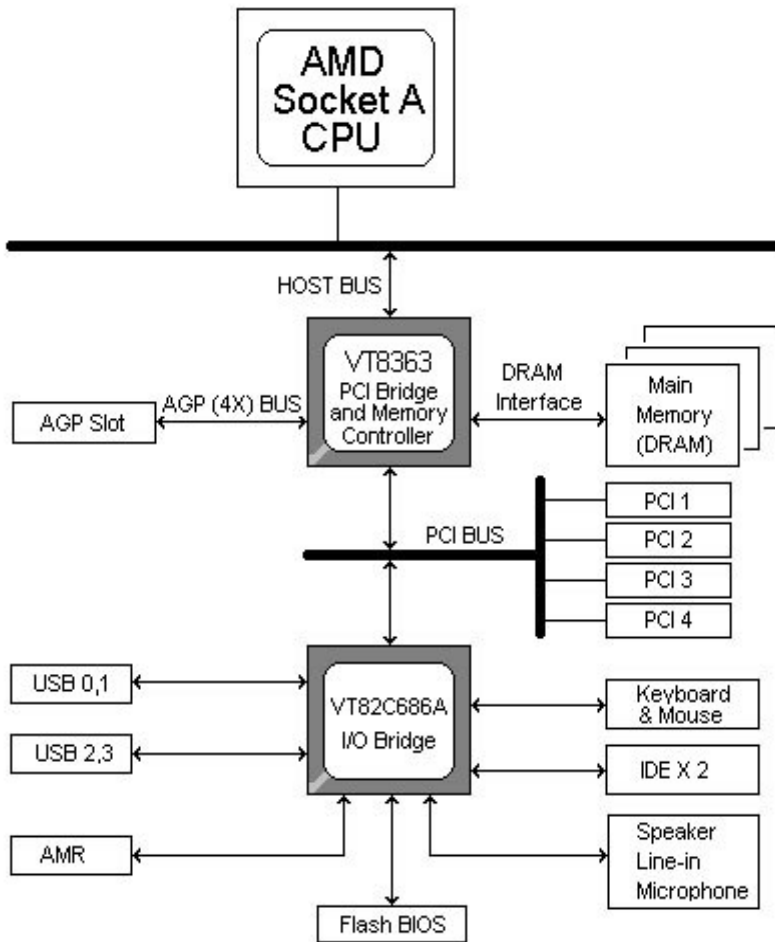
1. <i>Standard CMOS Setup</i>	19
2. <i>BIOS Features Setup</i>	20
3. <i>Chipset Features Setup</i>	24
4. <i>Power Management</i>	27
5. <i>PNP/PCI Configuration Setup</i>	31
6. <i>Load BIOS Default</i>	34
7. <i>Load Setup Default</i>	34
8. <i>Integrated Peripherals Setup</i>	32
9. <i>Supervisor Password</i>	37
10. <i>IDE HDD Auto Detection</i>	38
11. <i>Hard Disk Lw Level Format Utility</i>	38
12. <i>Exiting the Setup Program</i>	40
TECHNICAL INFORMATION	41
A. POST CODE	48
PROBLEM SHEET	52
UTILITY GUIDE	53

Introduction

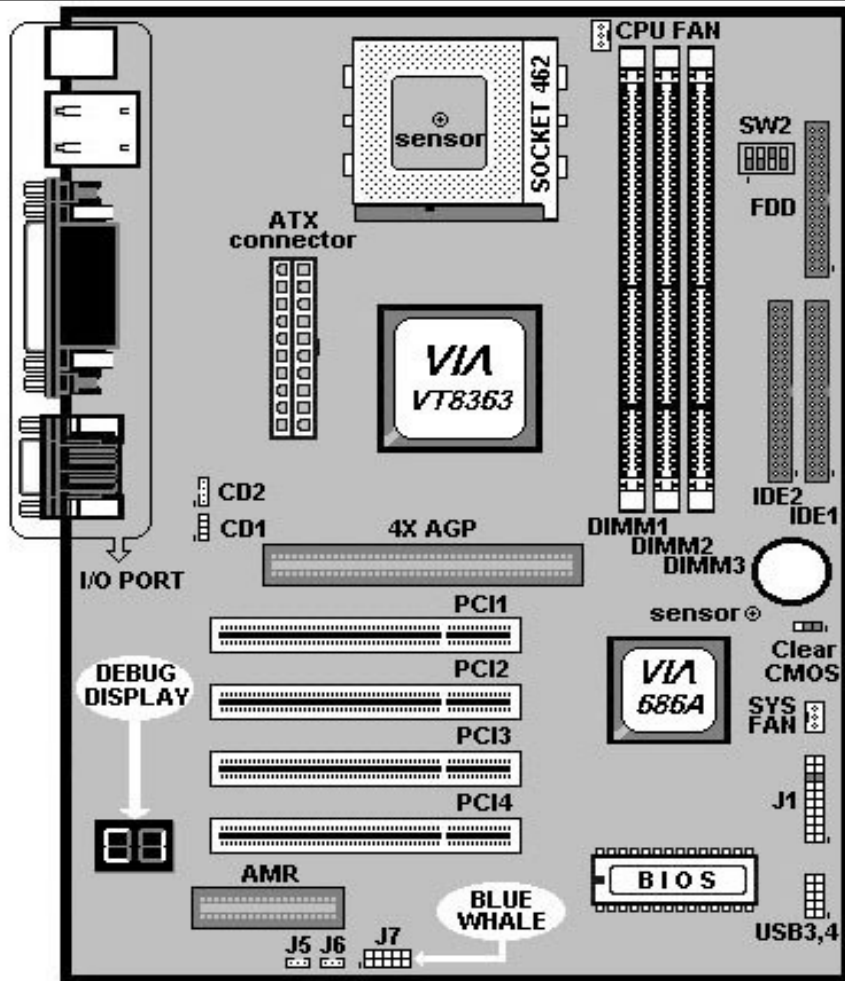
A. Specifications

System Chipset	VIA KT133 +686A chipset.
CPU	Supports Socket A AMD Duron and Athlon processors at 500 MHz to 1GHz.
Memory	Supports up to 1.5GB of PC133/VC133 memory (minimum 32MB) on board.
I/O	<ul style="list-style-type: none">*Two 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.2 x USB ports, 2 x USB as optional.*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	1 x AGP slot, 4x PCI Master Slots and 1x AMR
Voltage	Auto
Dimension	4-layer PCB, size (300mm x 240mm).
Others	CPU Auto Temperature Sensor & Music Alarm, voltage monitor and CPU Fan monitor, Bus Master/ Ultra ATA33/66, ACPI, Modem Ring On, LAN Wake Up, Sound on board, Debug on board.

A. System Block Diagram



B.Layout Diagram



C. Jumper Settings

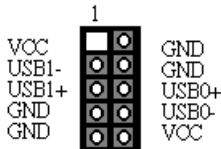
User's Manual

- **Power ON/OFF (For ATX Power Supply) :**
The button should be a momentary switch that is normally open. Pushing the ATX Power Switch will immediately change the system Status. Before or during "POST", it takes 4 seconds to turn off the system.
- **J5: LAN Wake Up**
Pin1 : 5VSB
Pin 2 : GND
Pin 3: LAN WAKE UP
- **J6: Internal & External MODEM Wake Up**
Pin 1: MODEM WAKE UP
Pin 2 : GND
Pin 3 : 5VSB

J6 is to support Internal Modem card and two Serial ports are able to support the External Modem Ring-In. Once users connect the external Modem to COM1 or COM2, the TM-VAK7P allows users to turn their system through the remote and host's dial-up control.

- **J7 : 3-in-1 Killer Kits Connector.**

- **J8 : USB External Connector**



- **J9 : CD1**

L G R G



1

- **J10 : CD2**

L G G R



1

- **SW1 : CPU Clock Ratio Table**

Ratio	1	2	3	4
5.0x	On	Off	On	On
5.5x	On	Off	On	Off
6.0x	On	Off	Off	On
6.5x	On	Off	Off	Off
7.0x	Off	On	On	On
7.5x	Off	On	On	Off
8.0x	Off	On	Off	On
8.5x	Off	On	Off	Off
9.0x	Off	Off	On	On
9.5x	Off	On	Off	Off
10.0x	Off	Off	Off	On
10.5x	Off	Off	Off	Off
11.0x	On	On	On	On
11.5x	On	On	Off	On
12.0x	On	On	Off	Off

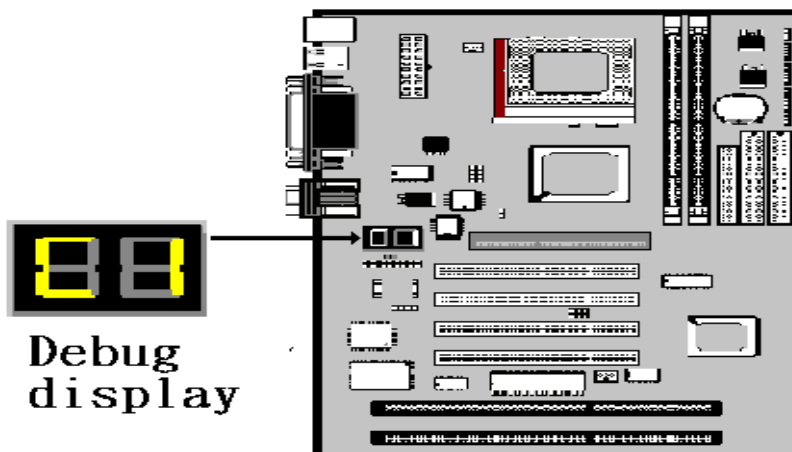
- **SW2 : CPU Frequency**

Ratio	1	2	3	4
66	On/Off	Off	On	On
75	Off	Off	Off	On
79	Off	On	Off	Off
83	On	Off	Off	On
100	On/Off	Off	On	Off
110	Off	On	Off	On
115	Off	On	On	Off
120	Off	On	On	On
124	On	On	Off	Off
129	On	On	Off	On
133	On/Off	Off	Off	Off
138	On	On	On	Off
143	On	On	On	On

- **CLR_CMOS**

JP	
1-2	Normal Operation (Default)
2-3	For Clearing CMOS Data

C.LED Debug & Voice Debug On Board



Error Message	LED Error code	Voice Debug
DRAM defect or improper connection	C1\C6	Please check memory.
CPU defect or improper connection	FF	Please check CPU.
Display card defect or improper connection	OD	Please check display card or memory.
Cache RAM Defect	61	Please check Cache RAM
Keyboard defect	05	Please check keyboard.
Floppy defect or improper connection	4E	Please check Floppy Disk Drive connector or BIOS.
When CPU temperature over the set point.		Your CPU temperature is too high.

User's Manual

When Mainboard was seriously damaged in some of components.

Refer to page 52-56 for other Error Codes.

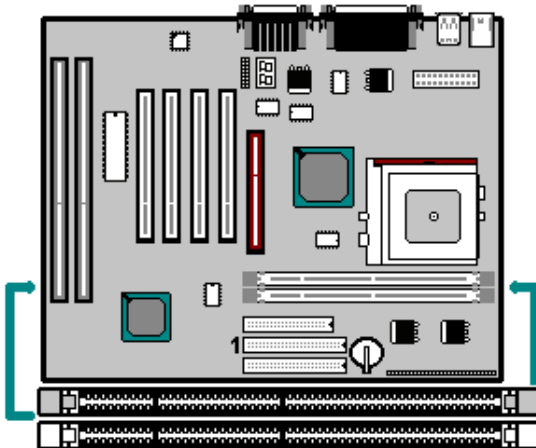
The Mainboard components may be demaged, please sent it bck to your supplier for repairing.

***Voice Debug Operation : After connecting 4 pin PC speaker, it works .**

CPU Voltage and Frequencies

Celeron-370 CPU is a frequency fixed CPU. The CPU type and working voltage for the CPU shall be automatically detected.

E. EDO/ SDRAM Installation Procedures:



- A 168-pin DIMM can support up to 512MB 3.3V EDO/ SDRAM .
- To avoid compatibility and reliability problems, you are recommended to test the 168-pin SDRAMs before buying them since the PCB specifications differ.
- First, verify the working voltage of the EDO/ SDRAM module in either DIMM socket.
- BV370M only supports 3.3V EDO/ SDRAM module. The following illustration shows you the difference between 3.3V and 5V to ensure

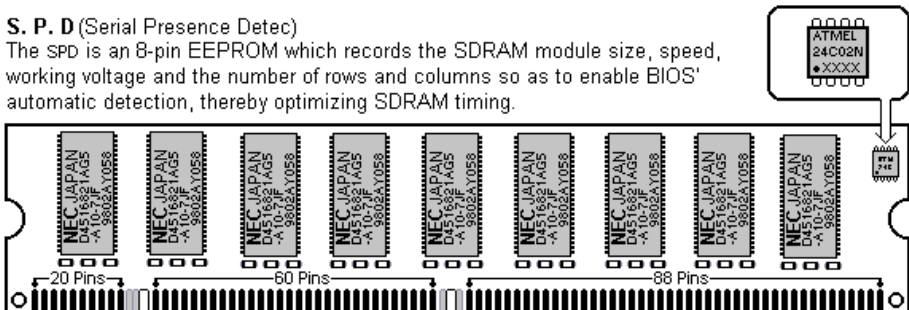
User's Manual

your correct selection of 3.3V DIMM module for using.

- You can set up the BIOS “**Chipset Feature Setup**” to the best working condition basing on the type of EDO/ SDRAM you are using.
- The BIOS DRAM default setting is 60 ns. Change the BIOS “**Chipset Feature Setup**” default setting to 50ns for better performance, if the chipset is marked 50ns.
- Change nothing if EDO RAM is used. BIOS automatically detect the RAM type.
- MEMO for Installing System:
 - ⊕ Concerning memory setup, you can find how to from “**Chipset Feature Setup**” under BIOS setup. However, to avoid system unstable or system hang, user without engineering background is not suggested to change BIOS set up.
 - ⊕ If system boot failure, please clean DIMM socket (**with clean oil**) or polish **Gold-Finger** of DRAM with **soft eraser**, and try again.
- The Dual Inline Memory Module (DIMM) must be 3.3 Volt and Unbuffered Synchronous DRAM (SDRAM) 8MB, 16MB, 32MB, 64MB, 128MB or 256MB. The following illustration shows the type of DIMM Module.

S. P. D (Serial Presence Detec)

The SPD is an 8-pin EEPROM which records the SDRAM module size, speed, working voltage and the number of rows and columns so as to enable BIOS' automatic detection, thereby optimizing SDRAM timing.



168-PIN PC-100 SDRAM DIMM Notch Key Definitions

PS/2 MOUSE



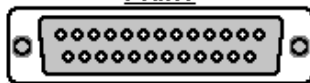
K/B

USB 2



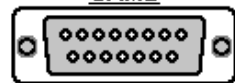
USB 1

PRINT



COM 1

GAME



COM 2