PCI5433

The World's First

Pipeline Burst Synchronous Cache

PCI-ISA 5x86/486 System Board

User's Manual

Introduction

ALD Technology is leading the world in applying the latest Pentium class technology - Pipeline Burst Synchronous SRAM Cache in PCI 5x86/486 system board. This latest caching technology offers significantly higher level 2 cache efficiency over the previous generation of Asynchronous caching. Adding to that, the support of on-board 256 MB or board DRAM, 4 Mode 4 IDE devices, Plug and Play Flash BIOS (optional) and PCI 2.1 compliance enable PCI5433 to perform like Pentium system boards yet at a much more affordable price.

Features

- AMD/Intel/Cyrix/IBM/SGS 5x86, 486 DX4, DX2 CPUs running up to 133 MHz
- 128 KB - 512 KB Pipeline Burst Synchronous Cache
- PCI 2.1 compliant (5 V)
- supports 4 ATA PIO Mode 4 Enhanced IDE devices
- 4 to 256 MB Fast Page or EDO DRAM (auto detection of DRAM type and size)
- 2 16550 compatible Fast UARTs and ECP/EPP parallel port
- 4 PCI (3 Master/ Slave) + 4 ISA 16-bit expansion slots
- floppy interface for 2 360/720/1.44/2.88 drives
- Energy Star Green features
- optional Plug & Play Flash BIOS from AMI or Award
- lithium battery backup for CMOS set-up
- *ALD9107M8* single chip core logic

SIMM Installation

ATX SIMM sockets (M1-M4) can accept either Single Bank or Double Bank memory modules of Fast Page, EDO or a mixed type of DRAM from 4 MB to a maximum of 256 MB. A maximum of 4 Single Bank SIMM(S) or 2 Double Bank SIMM(D) can be supported :

M1 & M2	M3 & M4
D	D
D	S
S	D
S	S

The minimum memory to start with is a 4 MB Single Bank SIMM, which can be inserted in any one of the 4 SIMM sockets.

Lithium Battery

- Industry standard coin type CR2032
- remove the battery insulator card before power up
- the on-board lithium battery is for the backup of the CMOS holding the Setup information when the system board power is turned off
- Depending on the usage pattern, the battery can last for about a year. It should be replaced with a new battery when error message such as CMOS Options not set, **Battery is dead**, Battery status low appears
- how to replace the battery: turn off the system power, remove the original battery and replace it with a new CR2032 battery

BIOS Setup

Your system board uses either the AMI WinBIOS or Award BIOS (Basic Input/Output System). For optimization purpose, most of the BIOS parameters have been pre-determined by the manufacturer. The following steps to do the BIOS setup are the minimum that is required to get started. Advanced users might want to manipulate the various options to fine tune their hardware to make the most out of their systems. In case there is problem as a result of modifying the BIOS, it is always possible to return to the safe options (Fail-Safe in AMI BIOS & BIOS Default in Award BIOS) to start all over again.

AMI BIOS Setup

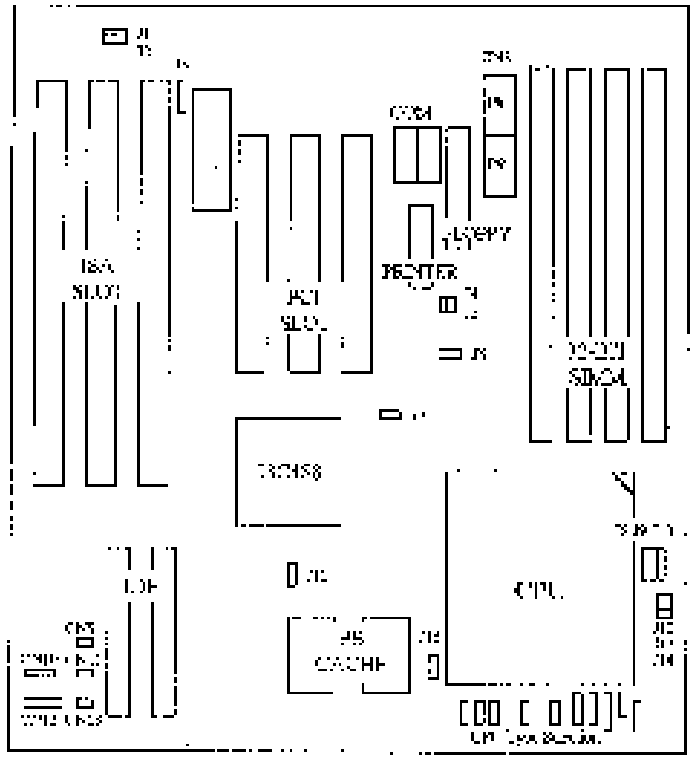
1. Turn BIOS Setup when prompted during System Power-up (press Del during RAM sizing)
2. Choose *Standard Setup* in the main setup window
   - 2.1. Set the *Date/Time*.
   - 2.2. Set the *Floppy A and Floppy B* (if any).
   - 2.3. Set the *Master Disk and Slave Disk* drive for Primary IDE drives only when the *Detect Master* and *Detect Slave* utility fails (see 3 below)
   - 2.4. Setup the *Game Port* and the *IDE* parameters under *Peripherals* (make sure *None* is chosen when there is no *Secondary IDE* drive attached to CN7: *Secondary IDE* drives can only be set by the BIOS automatically)
3. Auto-detect the Master disk and the Slave disk for the disk drives attached to the Primary IDE Connector (CN8) (the Primary IDE drives can be set by either the auto-detect utility under *Utility* or manually under the *Master Disk* and *Slave Disk* in the *Standard* setup while the Secondary IDE drives can only be set by the BIOS automatically.

Award BIOS Setup

1. Enter *CMOS Setup Utility* page when prompted during System Boot up (press Del during RAM sizing)
2. Choose *Standard Setup*
   - 2.1. Set the *Date/Time*.
   - 2.2. Set the *Floppy A and Floppy B* (if any)
   - 2.3. Set the *Master Disk* and *Slave Disk* drive for Primary IDE drives only when the *Detect Master* and *Detect Slave* utility fails (see 3 below)
3. Choose ***IDE HDD Autodetection*** to detect the Primary Master, Primary Slave, Secondary Master and Secondary Slave accordingly

* You can always enter setup during Warm Boot (pressing *Ctrl, Alt* and *Del* together) by hitting *Del* when prompted

If you forget the *Password* as set in the *Security* window, reset the CMOS by momentarily touching CN12 with a metal object (the settings have to be entered again)



Board Layout

Connectors

CN1 Keyboard connector
CN2 Power connector (P9, P8)

P9		P8	
1	- Ground	1	- Power Good
2	- Ground	2	- + 5V
3	- - 5 V	3	- - 12 V
4	- + 5 V	4	- - 12 V
5	- + 5 V	5	- Ground
6	- + 5 V	6	- Ground

CN3 Serial Port connector (COM 1)
CN4 Serial Port connector (COM 2)
CN5 Parallel Port connector
CN6 Floppy drive connector
CN7 Secondary IDE connector
CN8 Primary IDE connector
CN9 Hard disk Drive LED
CN10 Speaker connector
CN11 Keylock connector
1 - LED (+) 2 - NC
3 - LED Gnd 4 - Keylock input
5 - Gnd
CN12 CMOS Reset (default OPEN)

Notes:

1. The black wires of P9 & P8 should be next to each other when they are plugged into power connector (CN2).
2. Master / Slave Selection of the three PCI slots:

PCI1 & PCI2	Only ONE of them is MASTER at a time
PCI3	MASTER / SLAVE

Jumper Setting

A. ECP Function Selection

	DMA 1	DMA 3
J1 & J2	2-3	1-2

B. Flash EPROM Read/Write Selection

	Operation Mode	Programming Mode
J3	1-2	2-3

C. Clock Speed Selection

CLK Gen (Factory Default)	CMA8815	CMA8819	
	PCLK = ECLK	PCLK = ECLK	PCLK = ECLK / 2
J6	2-3	2-3	1-2

ECLK	25 MHz	33 MHz	40 MHz
CPU	486_DX2-50	DX-133, 5x86-100, 486DX4-100, 4x5DX2-66	5x86-120, 486DX4-120 -486DX2-80, 5x86-133
J4 , J5			

D. CPU Power Selection

CPU Voltage	3.30V	3.45V	4.00V	3.60V
J8 J9 J10				
J12 J13 J14				

E. Cache Memory Setting (Factory Default)

Cache Type	1-3	1-2 2-3	Flow Through Pipeline

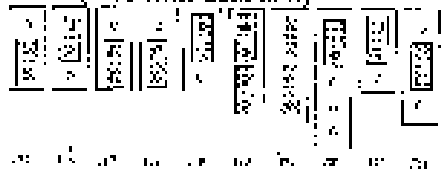
Cache Size	TAG RAM	DATA RAM			
	CJ9	U22	U23	J7	J11
128 KB	8K8	--	32Kx32Bits	1-2	OPEN
256 KB	32K8	32Kx32Bits	32Kx32Bits	1-2	1-2
256 KB	32K8	--	64Kx32Bits	1-2	OPEN
512 KB	32K8	64Kx32Bits	64Kx32Bits	2-3	2-3

Notes

1. When there is only 1 piece of Data RAM, it must be placed at U23

F. CPU Type Selection

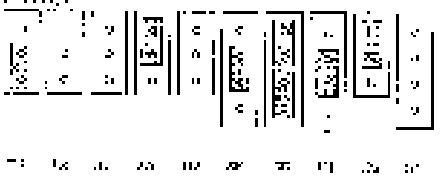
1. AMD DX5 (Nx86 Write-Back CPU)



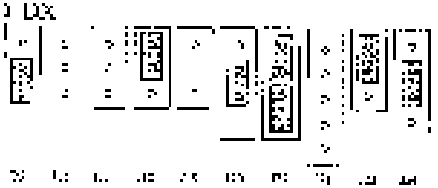
2. AMD DX4 (Write-Back CPU)

3. AMD 5X4 (Write-Through CPU)

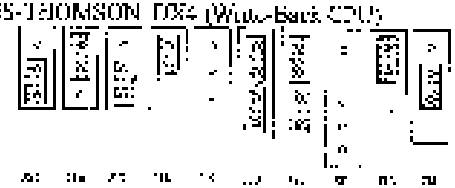
4. AMD DX5



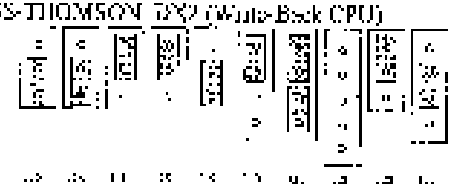
5. AMD DX



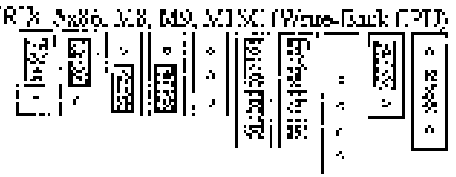
6. SGS-THOMSON DX4 (Write-Back CPU)



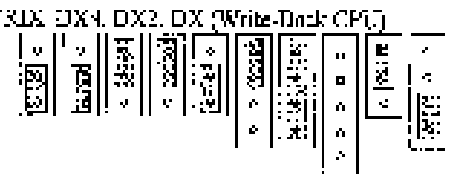
7. SGS-THOMSON DX2 (Write-Back CPU)



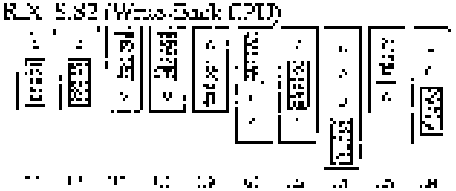
8. CYRIX 5x86, 5X8, MX, MXC (Write-Back CPU)



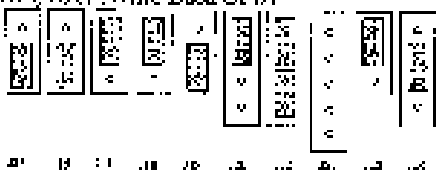
9. CYRIX DX4, DX2, DX (Write-Back CPU)



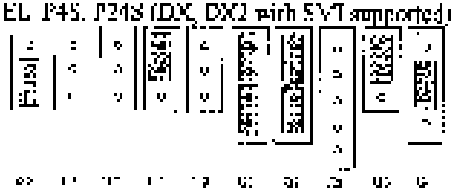
10. CYRIX 5x86 (Write-Back CPU)



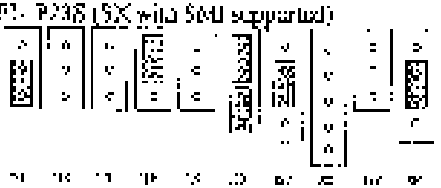
11. TI DX5, DX4 (Write-Back CPU)



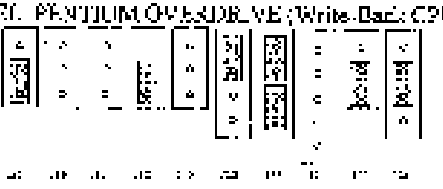
12. INTEL P45, P24S (DX, DX2 with SMI supported)



13. INTEL P24S (SX with SMI supported)



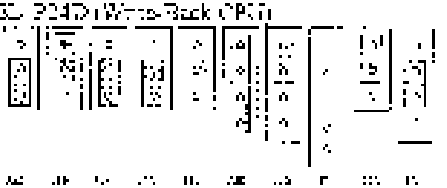
14. INTEL PENTIUM OVERDRIVE (Write-Back CPU)



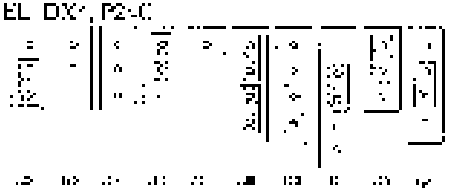
15. INTEL OVERDRIVE

16. INTEL P24T (Write-Back CPU)

17. INTEL P24T (Write-Back CPU)



18. INTEL DX4, P24C



19. INTEL DX2, DX

20. INTEL SX