



YM430TX
Pentium® Processor-Based
Motherboard User's Manual

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

Copyright © 1997, Intel Corporation. Third-party brands and trademarks are the property of their respective owners.

Product Name:	Intel YM430TX
Manual Revision:	1.00
Release Date:	May 1997

Getting Help

World Wide Web

<http://www.intel.com>

Telephone

Talk to a Customer Support Technician* (Intel reserves the right to change pricing for telephone support at any time without notice)

In U.S.: 1-900-555-5800 (M–F, 7:00 *am*–5:00 *pm*, Th 7:00 *am*–3:00 *pm*, PST)
Calls billed at U.S. \$2.50 per minute

In U.S. and Canada: 1-800-404-2284 (M–F, 7:00 *am*–5:00 *pm*, Th 7:00 *am*–3:00 *pm*, PST) Credit card calls billed at U.S. \$25 per incident

In Europe: contact Intel at <http://www.intel.com/intel/contact> for up-to-date technical support phone numbers

In Asia-Pacific region (Singapore local time, Oct–April: M–F, 6:00 *am*–4:00 *pm*; April–Oct: M–F, 5:00 *am*–4:00 *pm*) Credit card calls billed at U.S. \$25 per incident

Australia (Sydney):	+1-800-649-931
Hong Kong:	+852-2-844-4456
Korea:	+822-767-2595
PRC:	+852-2-844-4456
Singapore:	+65-831-1311
Taiwan:	+886-2-718-9915

Rest of the world: Call the North American Service Center at +1-916-377-7000 (M–F, 7:00 *am*–5:00 *pm*, U.S. pacific standard time)

* Or contact your local dealer or distributor.

Technical Training & Support

If you are registered in the Intel Processor Dealer Program (North America), the Genuine Intel Dealer Program (Asia-Pacific Region), or the Intel Processor Integrator Program (Europe), you are eligible for technical training and support.

In U.S. and Canada: 1-800-538-3373, ext. 442 (M–F, 5:00 *am*–5:00 *pm*, PST)

In Europe: contact your distributor or fax your details to European Literature on +44 (0) 1793 513142

In Asia: +65-831-1379 (M–F, 8:30 *am*–5:30 *pm*, Singapore local time) or via e-mail: APAC_gid@ccm.isin.intel.com

Contents

1. Introduction	7
How this Manual is Organized	7
Item Checklist	7
2. Features	8
Features of the Intel YM430TX Motherboard	8
The Intel YM430TX Motherboard	11
3. Installation	12
Intel YM430TX Motherboard Layout	12
Installation Steps	14
1. Set Jumpers on the Motherboard.	14
Jumper Settings	15
2. Install Memory Modules	18
SIMM Memory Installation	19
DIMM Memory Installation	20
3. Install the Processor.	21
4. Install Expansion Cards	22
Expansion Card Installation Procedure	22
Assigning IRQs for Expansion Cards	22
Assigning DMA Channels for ISA Cards	23
5. Connect Cables, Wires, and Power Supply	24
Power Connection Procedures	30
4. BIOS Software	31
Support Software	31
Flash Memory Writer Utility	31
Main Menu	32
Advanced Features	32
Managing & Updating your Motherboard's BIOS	33
BIOS Setup	34
Setup Utility	34
Load Defaults	35
Standard CMOS Setup	35
Details of Standard CMOS Setup	36
BIOS Features Setup	38
Details of BIOS Features Setup	38
Chipset Features Setup	40
Details of Chipset Features Setup	41

Power Management Setup	44
Details of Power Management Setup	44
PNP and PCI Setup	46
Details of PNP and PCI Setup	46
Load BIOS Defaults	48
Load Setup Defaults	48
Supervisor Password and User Password	49
IDE HDD Auto Detection	50
Save & Exit Setup	51
Exit Without Saving	51
5. Support Software	52
Intel YM430TX Software and Manual CD	52

FCC & DOC Compliance

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

1. Introduction

How this Manual is Organized

This manual contains the following sections:

- 1. Introduction** — document organization and product checklist
- 2. Features** — product information and specifications
- 3. Installation** — instructions for setting up the motherboard
- 4. BIOS Setup** — instructions for setting up the BIOS software
- 5. Support Software** — description of software drivers and utilities

Item Checklist

Please check that your package is complete. If you discover damaged or missing items, please contact your retailer.

- Intel YM430TX motherboard
- 2 serial port ribbon cables attached to a mounting bracket
- 1 parallel ribbon cable with a mounting bracket
- 1 IDE ribbon cable
- 1 floppy ribbon cable
- 1 CD-ROM containing the following items
 - Windows 95 update utility for the 430TX PCIset
 - ISA configuration utility
 - flash memory writer utility to update the flash BIOS
 - warranty
 - user's manual
 - readme files for descriptions and use of the files
- Intel PS/2 mouse/USB connector card

2. Features

Features of the Intel YM430TX Motherboard

The Intel YM430TX motherboard is designed for the demanding PC user who wants many intelligent features in a small package. This motherboard has the following features:

- **Intel Chipset:** Intel's 430TX PCIsset with I/O subsystems.
- **Multi-Processor/Multi-Speed Support:** Supports 90- to 200-MHz Intel Pentium® processors and 166- to 233-MHz Intel Pentium® processors with MMX technology.
- **Versatile Memory Support:** Two DIMM sockets support up to 256 MB of 8 to 128MB, 168-pin, 3.3-volt SDRAM/EDO memory modules. Four SIMM sockets support up to 256 MB of 4 to 64MB, 72-pin fast page mode (FPM) or extended data out (EDO) memory modules. SIMMs and DIMMs *cannot* be used at the same time.
- **Easy Installation:** The BIOS supports auto detection of hard drives, PS/2 mouse, and Plug and Play devices to simplify setup.
- **Dual Power Supply:** Two onboard power connectors support either AT or ATX power supplies with soft-on/off features.
- **ISA and PCI Expansion Slots:** Two 16-bit ISA slots, three 32-bit PCI slots, and one shared PCI/ISA slot.
- **Super Multi-I/O:** Provides two high-speed, UART-compatible serial ports; one parallel port with EPP and ECP capabilities; and an integrated keyboard controller. Supports two floppy drives of either 5.25" or 3.5" (1.44 MB or 2.88 MB) without an external card. Supports Japanese Floppy 3 mode (3.5" disks: 1.2MB) and LS-120 floppy drives (3.5" disks: 120MB, 1.44MB, 720K).
- **Desktop Management Interface (DMI):** BIOS supports DMI, allowing hardware to communicate within a standard protocol. (Requires DMI-enabled components.)
- **PCI Bus Master IDE Controller:** The onboard Ultra DMA/33 Bus Master IDE controller with two connectors supports four IDE devices in two channels, allowing IDE transfer rates up to 33MB per second, and also supports enhanced IDE devices. This controller supports PIO Modes 3 and 4 and Bus Master IDE DMA Mode 2. BIOS supports IDE CD-ROM or SCSI bootup.
- **Level 2 Cache:** 512KB pipelined burst SRAM onboard.
- **PS/2 Mouse, USB Connector:** Includes a cable and bracket set to mount the connectors to an unused expansion slot on the system chassis.

Performance:

- **SDRAM Optimized Performance** – Synchronous dynamic random access memory (SDRAM) increases the data transfer rate from a maximum of 264 MB per second using EDO memory to a maximum of 528 MB per second using SDRAMs.
- **Double the IDE Transfer Speed** – Intel's 430TX PCIset improves the IDE transfer rate by using Bus Master UltraDMA/33 IDE, which can transfer data at rates up to 33MB per second. This new technology is compatible with existing ATA-2 IDE specs, so there is no need to upgrade current hard drives or cables.
- **Concurrent PCI** – Concurrent PCI allows multiple PCI transfers from PCI master buses to memory to CPU.
- **ACPI Ready** – The advanced configuration and power interface (ACPI) provides more energy-saving features for future operating systems (OS) by supporting OS-direct power management (OSPM). With these features implemented in the OS, PCs can be ready around the clock every day, yet satisfy energy-saving standards. To fully utilize the benefits of ACPI, systems must use an ACPI-supported OS — such as the successor to Windows 95.

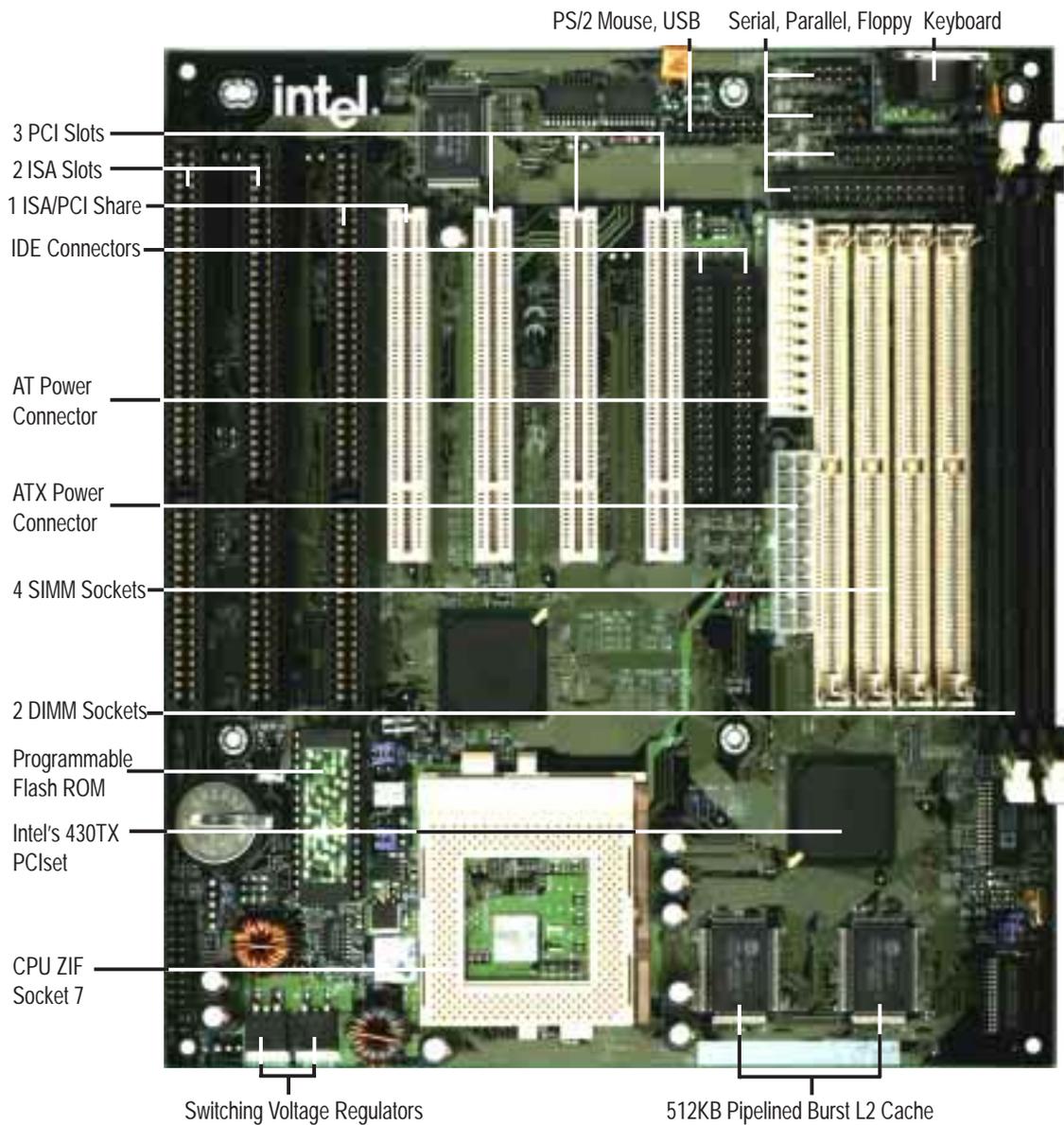
Intelligence:

- **Virus Write Protection** – Normally, viruses can destroy data on storage media. Some new-generation viruses can also clear BIOS data, which is usually unprotected. The Intel YM430TX motherboard was designed to cooperate with BIOS, chipset, and flash memory to disable write permission when the system's initialization stage is completed upon boot-up.
- **Auto Fan Off** – The CPU fan will power off automatically even in sleep mode. This feature reduces both energy consumption and system noise, and is an important feature for silent PC systems.
- **Dual-function Power Button (requires ATX power supply)** – The system can be in one of two states, sleep or soft-off. Pressing the power button for *less* than 4 seconds places the system into sleep mode. Pressing the power button for *more* than 4 seconds places the system into soft-off mode.
- **Remote Ring On (requires ATX power supply)** – This feature allows a computer to be turned on remotely through a modem. With this feature enabled, any user can access vital information from their computer from anywhere in the world.
- **Message LED** – By illuminating in different ways, chassis LEDs can provide meaningful information. For example, an LED might blink to indicate that the fax/modem is transferring data or light steadily to indicate that the fax/modem is idle.

(This page was intentionally left blank)



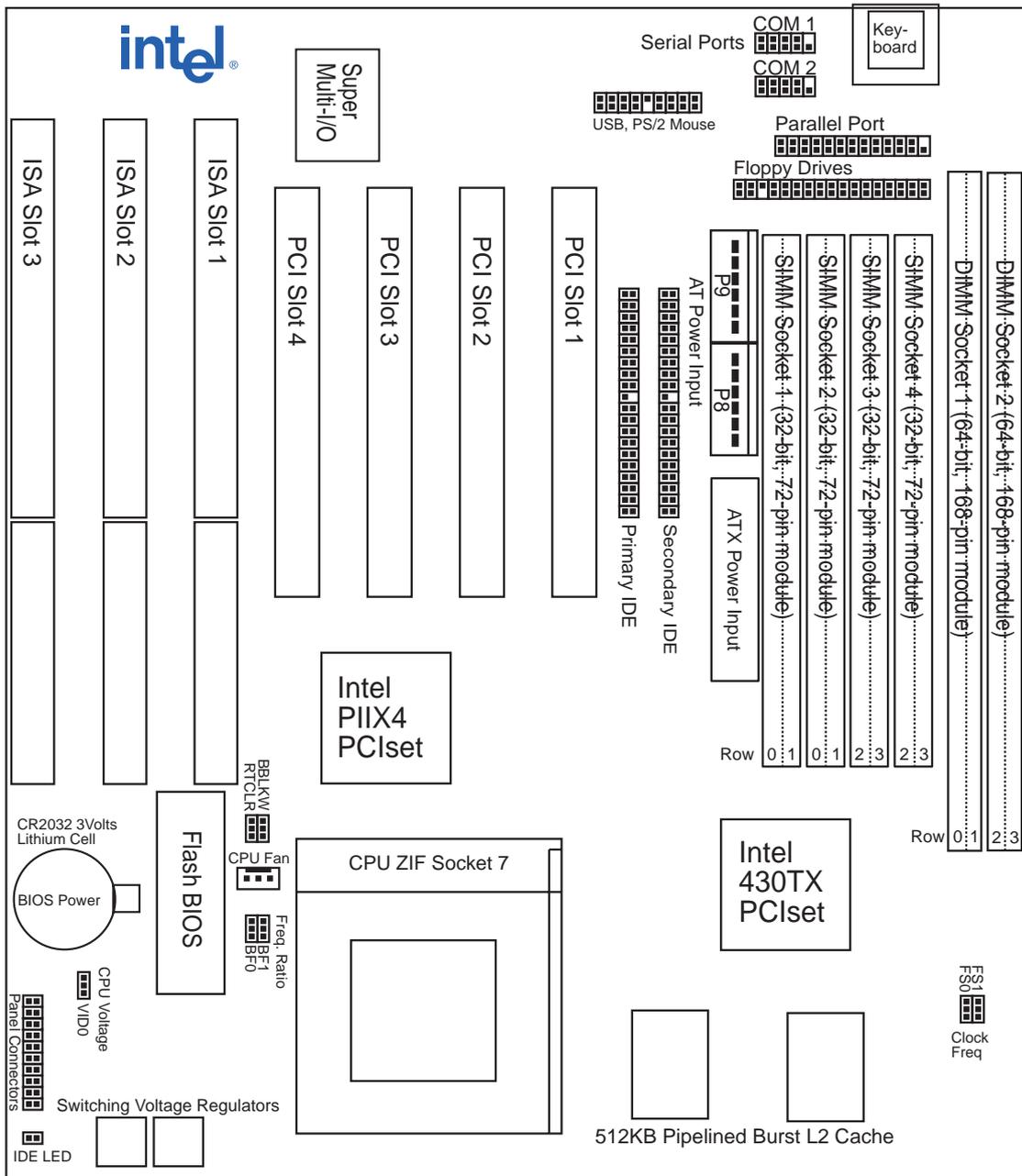
The Intel YM430TX Motherboard



2. Features (Intel YM430TX)

3. Installation

Intel YM430TX Motherboard Layout



3. Installation (Motherboard Layout)

Jumpers

BBLKW	p. 15	Flash Memory Boot Block Program (Boot Block Write-Protect/Boot Block Write Enable)
RTCLR	p. 15	Real Time Clock RAM (Keep CMOS/Clear CMOS)
VID0, VID1, VID2	p. 16	Voltage Regulator Output Selection
FS0, FS1, FS2	p. 16	CPU External Clock (Bus) Frequency Selection
BF0, BF1	p. 16	CPU-to-Bus Frequency Ratio

Expansion Slots

SIMM Sockets	p. 19	SIMM Installation
DIMM Sockets	p. 20	DIMM Installation
ZIF Socket 7	p. 21	CPU Installation
PCI and ISA Slots	p. 22	Expansion Cards

Connectors

KBCON	p. 24	Keyboard Connector (5-pin Female)
FLOPPY	p. 24	Floppy Drive Connector (34-pin Block)
PRINTER	p. 25	Parallel Printer Connector (26-pin Block)
COM1, COM2	p. 25	Serial Port COM1 & COM2 Connectors (10-pin Blocks)
FAN	p. 26	CPU Cooling Fan Connector
Primary / Secondary IDE	p. 26	Primary / Secondary IDE Connectors (40-pin Blocks)
IDELED	p. 27	IDE Activity LED
USB / PS/2	p. 27	PS/2 Mouse, USB (18-pin Block)
MSG LED (PANEL)	p. 28	Message LED Lead (2 pins)
SMI (PANEL)	p. 28	SMI Suspend Switch Lead (2 pins)
PWR SW (PANEL)	p. 28	ATX Power Switch/Soft Power Switch Lead (2 pins)
RESET (PANEL)	p. 28	Reset Switch Lead (2 pins)
KEYLOCK / PWR LED (PANEL)	p. 28	Keyboard Lock Switch and System Power Lead (5 pins)
SPEAKER (PANEL)	p. 28	Speaker Connector (4 pins)
AT POWER	p. 29	AT Motherboard Power Connector (12-pin Block)
ATXPWR	p. 29	ATX Motherboard Power Connector (20-pin Block)

Installation Steps

Before using your computer, you must complete the following steps:

1. Set jumpers on the motherboard.
2. Install memory modules.
3. Install the processor.
4. Install expansion cards.
5. Connect ribbon cables, cabinet wires, and power supply.
6. Set up the BIOS software.

1. Set Jumpers on the Motherboard.

Several hardware settings are made by using jumper caps to connect jumper pins (JP) on the motherboard. See the motherboard layout on page 12 for locations of jumpers. The jumper settings are described numerically, such as [----], [1-2], [2-3]. For no connection, connect pins 1 and 2 **and** connect pins 2 and 3. Pin 1 is always on top  or on the left  when holding the motherboard with the keyboard connector away from you. A “1” is written beside pin 1 on jumpers with three pins. The jumpers are also shown graphically such as  to connect pins 1&2 and  to connect pins 2&3. Jumpers with two pins are shown as  for short (on) and  for open (off). For manufacturing simplicity, the jumpers may be sharing pins from other groups. Use the diagrams in this manual instead of following the pin layout on the board. Settings with two jumper numbers require that both jumpers be moved together. To connect the pins, simply place a plastic jumper cap over the two pins as diagrammed.

WARNING! Computer motherboards and components contain very delicate integrated circuit (IC) chips. To protect the motherboard and other components against damage from static electricity, you should follow some precautions whenever you work on your computer.

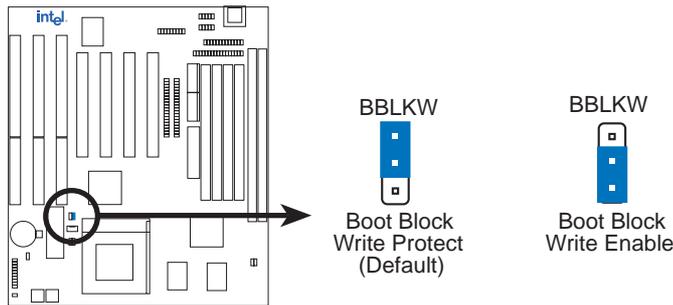
1. Unplug your computer before working on the inside.
2. Use a grounded wrist strap when handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
4. Place components on a grounded antistatic pad or on the bag that came with the component whenever the components are separated from the system.

Jumper Settings

1. Flash Memory Boot Block Programming (BBLKW)

This sets the operation mode of the boot block area of the programmable flash memory to allow programming in the *Boot Block Write Enable* position. This is required only if prompted by the Flash Memory Writer Utility (see BIOS Software).

<u>Programming</u>	<u>BBLKW</u>
Boot Block Write-Protect	[1-2] (Default)
Boot BLock Write Enable	[2-3]



Boot Block Programming

2. Real Time Clock (RTC) RAM (RTCLR)

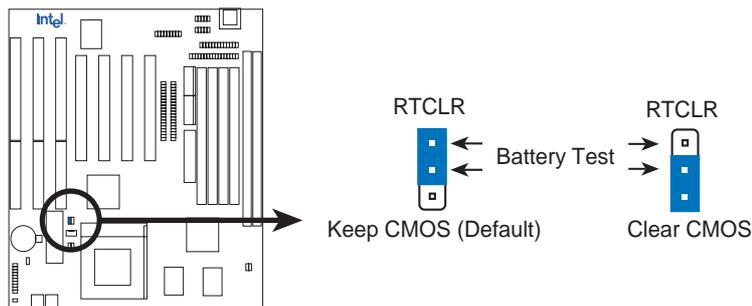
The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1) Turn off your computer and unplug the AC power, (2) Move this jumper to “Clear CMOS,” (3) Move the jumper back to “Keep CMOS,” (4) Turn on your computer, (5) Hold down <Delete> during bootup and enter BIOS setup to re-enter user preferences.

Battery Test Jumper (RTCLR)

You can test the battery’s current by removing this jumper and attaching a current meter to pins 1 & 2.

WARNING! Before testing, ensure that there is no power to your motherboard. Testing can clear the CMOS RAM containing BIOS setup information. Use the BIOS setup to re-enter user information after removing and reapplying this jumper.

<u>RTC RAM</u>	<u>RTCLR</u>
Keep CMOS	[1-2] (Default)
Clear CMOS	[2-3] (momentarily)

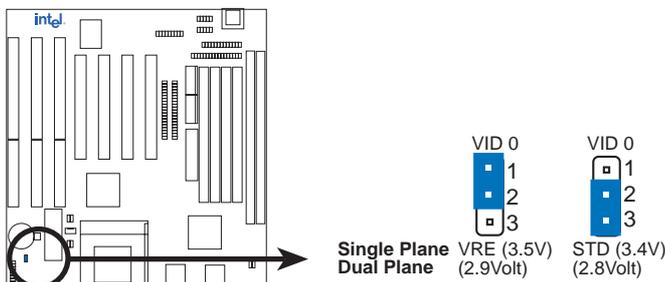


RTC RAM

3. Voltage Regulator Output Selection (VID0)

These jumpers set the voltage supplied to the CPU. The onboard voltage regulators will automatically detect and switch between single power plane & dual power plane CPUs. A CPU is usually referred to by its Vcore voltage.

Type	<u>(Single Plane)</u>		<u>(Dual Plane)</u>		VID0
	Vcore	Vio	Vcore	Vio	
VRE	3.5V	3.5V	2.9V	3.3V	[1-2]
STD	3.4V	3.4V	2.8V	3.3V	[2-3]



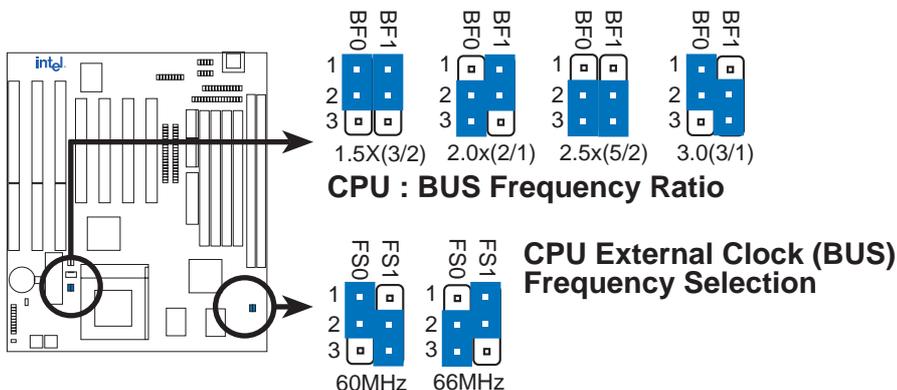
CPU Vcore Voltage Selection

4. CPU External (Bus) Frequency Selection (FS0, FS1, FS2)

These jumpers tell the clock generator what frequency to send to the CPU. These allow the selection of the CPU's *external* frequency (or *bus clock*). The bus clock times the bus ratio equals the CPU's *internal* frequency (the advertised CPU speed).

5. CPU to Bus Frequency Ratio (BF0, BF1)

These jumpers set the frequency ratio between the *internal* frequency of the CPU and the *external* frequency (called the *bus clock*) within the CPU. These must be set together with the jumpers for *CPU External (Bus) Frequency Selection*.



Set the jumpers for the internal speed of the Intel Pentium processor as follows:

<u>Freq.</u>	<u>Ratio</u>	<u>Bus Freq.</u>	<u>(BUS Freq.)</u>		<u>(Freq. Ratio)</u>	
			<u>FS0</u>	<u>FS1</u>	<u>BF0</u>	<u>BF1</u>
233 MHz	3.5x	66 MHz	[2-3]	[1-2]	[1-2]	[1-2]
200 MHz	3.0x	66 MHz	[2-3]	[1-2]	[1-2]	[2-3]
166 MHz	2.5x	66 MHz	[2-3]	[1-2]	[2-3]	[2-3]
150 MHz	2.5x	60 MHz	[1-2]	[2-3]	[2-3]	[2-3]
133 MHz	2.0x	66 MHz	[2-3]	[1-2]	[2-3]	[1-2]
120 MHz	2.0x	60 MHz	[1-2]	[2-3]	[2-3]	[1-2]
100 MHz	1.5x	66 MHz	[2-3]	[1-2]	[1-2]	[1-2]
90 MHz	1.5x	60 MHz	[1-2]	[2-3]	[1-2]	[1-2]

2. Install Memory Modules

This motherboard supports four 72-pin, 32-bit single inline memory modules (SIMMs) of 4, 8, 16, 32, or 64 MB each, to form a memory size between 8 and 256 MB. The SIMMs can be either 60ns or 70ns, asymmetric or symmetric, fast page mode (FPM) or enhanced data out (EDO) memory. (BEDO & parity are *not* supported). SIMMs must be installed in pairs so that each row contains 64 bits of the same size and type of chips. One side of the SIMM module (with chips) takes up half a row on the motherboard. (Refer to the motherboard layout on page 6 .)

Dual inline memory modules (DIMMs) can be used when SIMMs are *not* used. Two sockets are available for 3.3-volt power level, unbuffered synchronous DRAMs (SDRAMs) or EDO DRAMs of either 8, 16, 32, 64, or 128 MB each to form a memory size between 8 and 256 MB. One side of the DIMM module (with chips) takes up one row on the motherboard.

IMPORTANT: *You must set up memory speed through “Auto Configuration” in the BIOS Chipset Setup of the BIOS software. If both 60ns and 70ns memory are used, set “Auto Configuration” to 70ns. Do not use memory modules with more than 24 chips per module. Modules with more than 24 chips exceed the design specifications of the memory subsystem and will be unstable.*

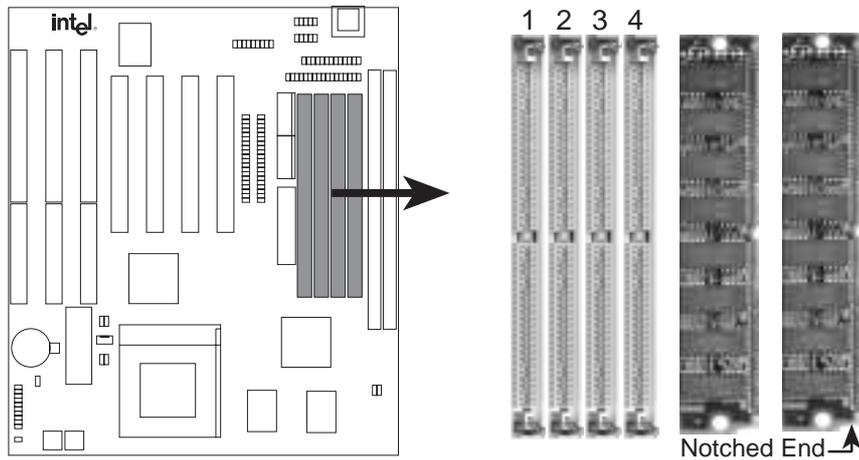
Memory Socket	SIMM Memory Module		Total Memory
SIMM Sockets 1&2 (Rows 0 & 1)	4MB, 8MB, 16MB, 32MB, 64MB 72-pin FPM or EDO SIMM (DIMM Sockets must be empty)	x2	
SIMM Sockets 3&4 (Rows 2 & 3)	4MB, 8MB, 16MB, 32MB, 64MB 72-pin FPM or EDO SIMM (DIMM Sockets must be empty)	x2	
	Total System Memory (Max 256 MB)	=	

WARNING! *Do not install both SIMMs and DIMMs at the same time or you will burn your memory. To mix SIMMs and DIMMs, you must use 5.0-volt-tolerant (signal level) memory chips, which are currently unavailable.*

Memory Socket	DIMM Memory Module		Total Memory
DIMM Socket 1 (Rows 0 & 1)	8MB, 16MB, 32MB, 64MB, 128MB 168-pin SDRAM or EDO DIMM (SIMM Sockets must be empty)	x1	
DIMM Socket 2 (Rows 2 & 3)	8MB, 16MB, 32MB, 64MB, 128MB 168-pin SDRAM or EDO DIMM (SIMM Sockets must be empty)	x1	
	Total System Memory (Max 256MB)	=	

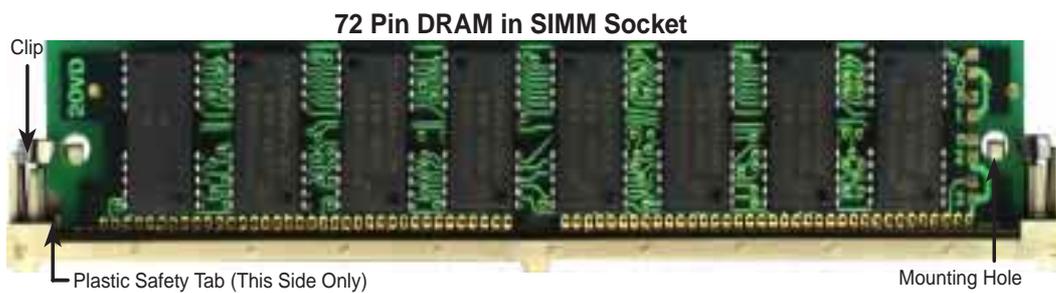
SIMM Memory Installation

1. The SIMM memory modules will fit in only one orientation as shown because a plastic safety tab on one end of the SIMM sockets fits the notched end of the SIMM memory modules.



72 Pin SIMM Sockets

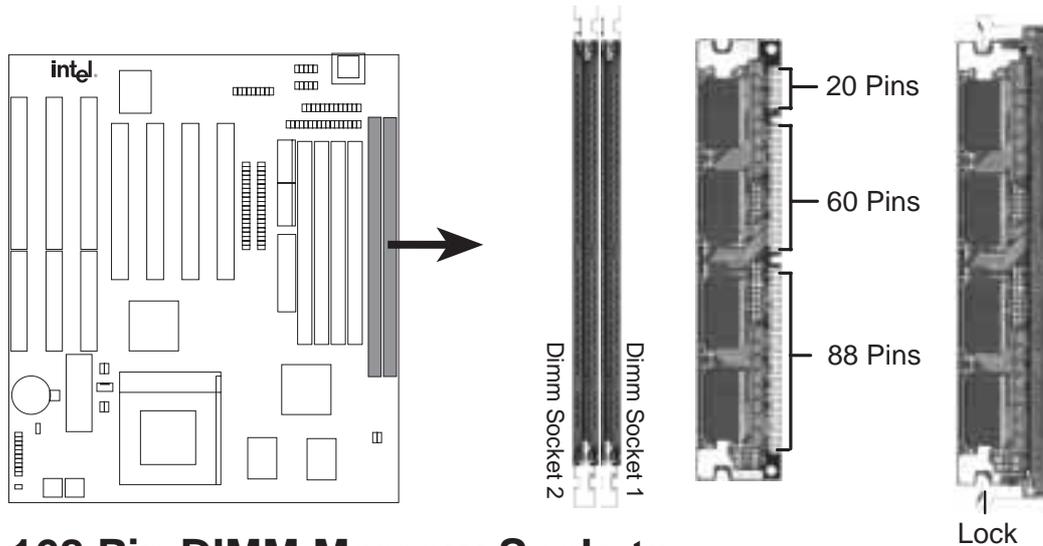
2. Press the memory module firmly into place starting from a 45-degree angle and making sure that all the contacts are aligned with the socket.
3. With your fingertips, rock the memory module into a vertical position so that it clicks into place. The plastic guides go through the two mounting holes on one side, and the metal clips snap on the other side.



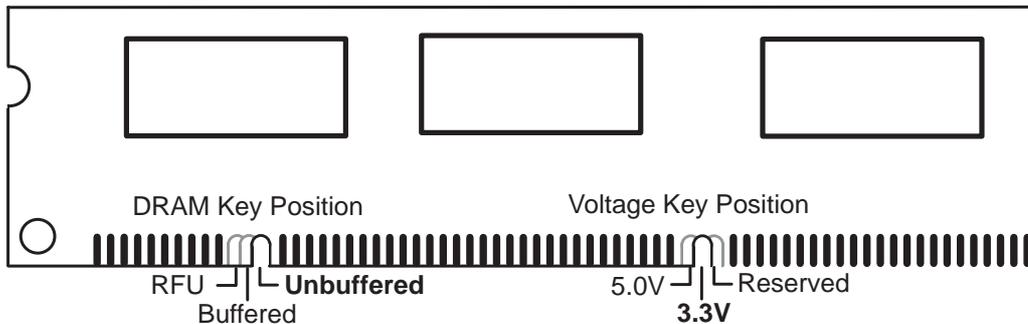
To release the memory module, squeeze both metal clips outward and rock the module out of the metal clips.

DIMM Memory Installation

Use 3.3-volt unbuffered DIMMs, and insert the modules as shown. The modules will fit in only one orientation as shown because different numbers of pins are located between notches. The notches in the DIMM modules (shown in the figure below) identify the type and also prevent the wrong type of DIMM from being inserted into the DIMM socket.



168 Pin DIMM Memory Sockets



168-Pin DIMM Notch Key Definitions

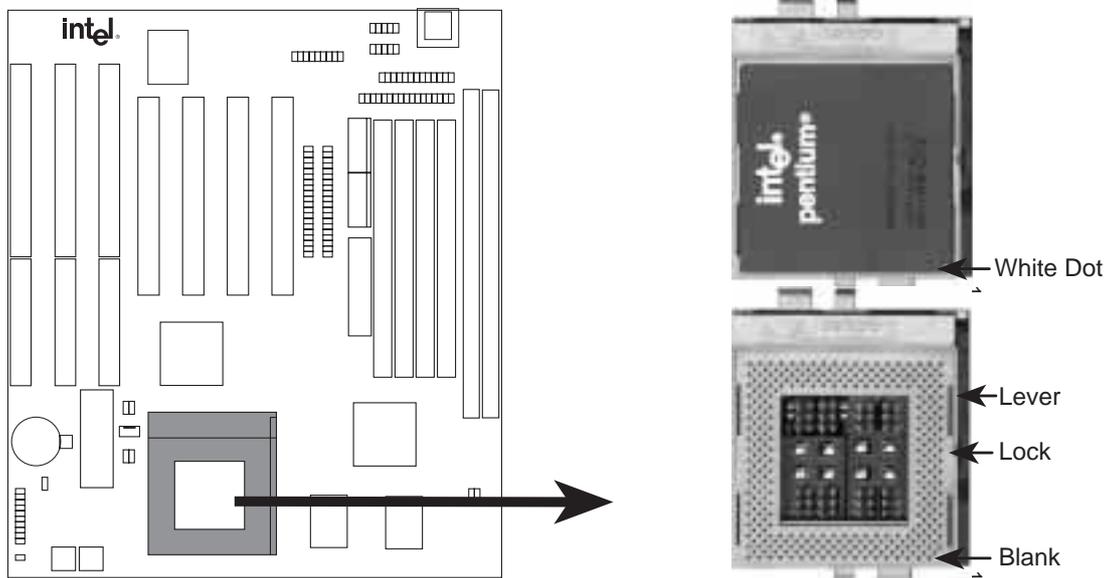
Four clock signals are supported on this motherboard. Check with your vendor for the specifications before purchasing memory modules.

3. Install the Processor.

The motherboard provides a 321-pin ZIF Socket 7 that is backward compatible with ZIF Socket 5 processors. The processor that came with the motherboard should have a fan attached to it to prevent overheating. If this is not the case, then purchase and install a fan before you turn on your system.

To install a processor, first turn off your system and remove its cover. Locate the ZIF socket and open it by first pulling the lever sideways away from the socket then upward to a 90-degree right angle. Insert the CPU with the correct orientation as shown. Use the notched corner of the CPU with the white dot as your guide. The white dot should point toward the end of the lever. Notice that there is a blank area where one hole is missing from that corner of the square array of pin holes, and a “1” is printed on the motherboard next to that corner. Because the CPU has a corner pin for three of the four corners, the CPU will fit in only one orientation as shown. The picture is for reference only; the processor fan covers the face of the processor. With the added weight of the fan, no force is required to insert the processor. Once the processor is completely inserted, hold down on the fan and close the socket’s lever.

IMPORTANT: You must set jumpers for “CPU to Bus Frequency Ratio” and jumpers for “Bus Frequency Selection” depending on the processor that you install.



ZIF Socket 7 with Pentium Processor

4. Install Expansion Cards

WARNING! *Unplug your power supply before adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.*

First read your expansion card documentation for hardware and software settings that may be required to set up your specific card.

Expansion Card Installation Procedure

1. Read the documentation for your expansion card.
2. Set any necessary jumpers on your expansion card.
3. Remove your computer system's cover.
4. Remove the bracket on the slot you intend to use. Keep the bracket for possible future use.
5. Carefully align the card's connectors and press firmly.
6. Secure the card on the slot with the screw you removed in step 4.
7. Replace the computer system's cover.
8. Setup the BIOS if necessary (such as "IRQ xx Used By ISA: Yes" in "PnP and PCI Setup")
9. Install the necessary software drivers for your expansion card.

Assigning IRQs for Expansion Cards

Some expansion cards need to use an IRQ to operate. Generally an IRQ must be exclusively assigned to one use. In a standard design, 16 IRQs are available, but most of them are already in use, leaving 6 free for expansion cards.

Both ISA and PCI expansion cards might require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Two types of ISA cards currently exist: the original (legacy) cards, and Plug and Play (PnP) cards.

Legacy ISA card designs require you to configure the card's jumpers manually and then install the card in any available slot on the ISA bus. Microsoft's Diagnostic utility (MSD.EXE, located in the \windows directory) can display a map of available and used IRQs.

In Windows 95, the Device Manager (accessed from the System selection on the Control Panel) can display the IRQ number being used by that device. Ensure that no two devices use the same IRQ, or your computer will experience problems when those two devices are in use at the same time.

To simplify configuration, the YM430TX motherboard complies with the Plug and Play (PnP) specification, which allows automatic system configuration whenever a PnP-compliant card is added to the system. For PnP cards, IRQs are assigned automatically from those available.

If the system has both legacy and PnP ISA cards installed, IRQs are assigned to PnP cards from those not used by legacy cards. The PCI and PnP configuration section of the BIOS setup utility indicates which IRQs are used by legacy cards. For older legacy cards that do not work with the BIOS, you can contact your vendor for an ISA Configuration Utility.

An IRQ number is automatically assigned to PCI expansion cards after those used by legacy and PnP ISA cards. In the PCI bus design, the BIOS automatically assigns an IRQ to a PCI slot that contains a card requiring an IRQ. To install a PCI card, you need to set the INT (interrupt) assignment. Since all the PCI slots on this motherboard use INTA#, set the jumpers on your PCI cards to INT A.

Assigning DMA Channels for ISA Cards

Some ISA cards (both legacy and PnP) might also require a direct memory access (DMA) channel. DMA assignments for this motherboard are handled the same way as the IRQ assignment process described above. You can select a DMA channel in PCI and PnP configuration section of the BIOS Setup utility.

IMPORTANT: *To avoid conflicts, reserve the necessary IRQs and DMAs for legacy ISA cards. (In the PnP and PCI Setup section of the BIOS software, select "Yes" in "IRQxx Used by ISA" and "DMAx Used by ISA" for those IRQs and DMAs you wish to reserve.)*

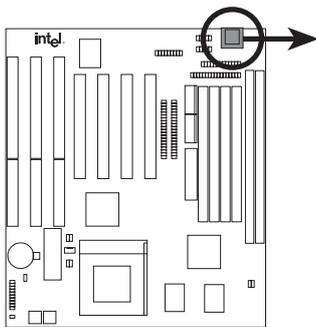
5. Connect Cables, Wires, and Power Supply

WARNING! Some pins are used for connectors or power sources. These pins are clearly separated from jumpers as shown in the motherboard layout (page 6). Placing jumper caps over these pins will damage your motherboard.

IMPORTANT: Connect ribbon cables so that the red stripe is on the Pin 1 side of the connector. The four corners of the connectors are labeled on the motherboard. Pin 1 is the side closest to the power connector on hard drives and floppy drives. IDE ribbon cable must be less than 18 in. (46cm) long, with the second drive connector no more than 6 in. (15cm) from the first connector.

1. Keyboard Connector (5-pin female)

This connector supports a standard IBM-compatible (or “101 enhanced”) keyboard.



Keyboard Connector (5-pin female)

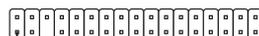
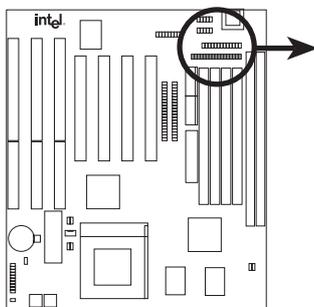


This motherboard accepts an AT Keyboard Connector Plug as shown here.

Keyboard Connector

2. Floppy drive connector (34-pin block)

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives. (Pin 5 is removed to prevent inserting the cable in the wrong orientation when using ribbon cables with pin 5 plugged).



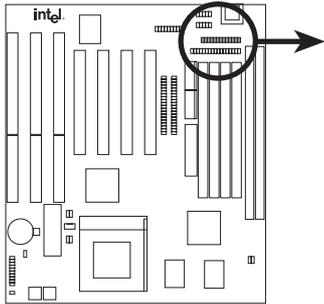
Pin 1

Connect the Red stripe to Pin 1

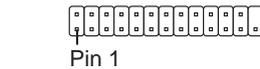
Floppy Drive Connector

3. Parallel Printer Connector (26-pin block)

This connector supports the included parallel port ribbon cable and mounting bracket. Connect the ribbon cable to this connection, and mount the bracket to the case on an open slot. Enable the parallel port and choose the IRQ through Onboard Parallel Port in Chipset Features of the BIOS software. (Pin 26 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 26 plugged).



Parallel (Printer) Connector



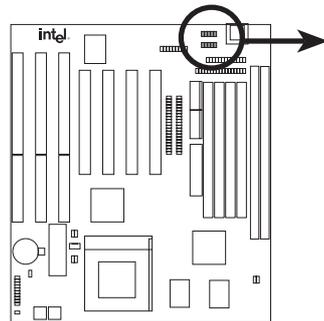
Connect the Red stripe to Pin 1

For this connector to be available, you must connect the included Parallel (25-Pin female) cable set to a free expansion slot opening.

TIP: You may also remove the bracket connectors and mount them directly to the case to save expansion slot space.

4. Serial Port COM1 and COM2 Connectors (two 10-pin blocks)

These connectors support the provided serial port ribbon cables and mounting bracket. Connect the ribbon cables to these connectors, and mount the bracket to the case on an open slot. Enable the serial port and choose the IRQ through Onboard Serial Port in Chipset Features of the BIOS software. (Pin 10 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 10 plugged).



Onboard Serial Port Connectors



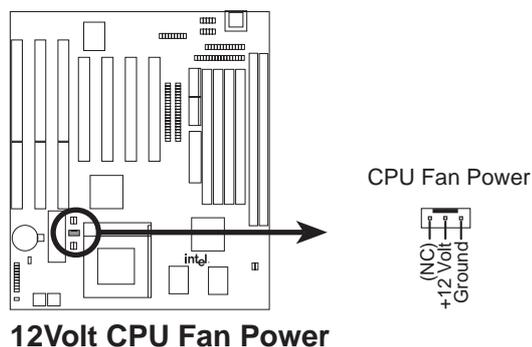
For these connectors to be available, you must connect the included serial cable set from COM1 (using the 9-Pin male) & COM2 (using the 25-Pin male) to a free expansion slot opening.

TIP: You may also remove the bracket connectors and mount them directly to the case to save expansion slot space.

5. CPU Cooling Fan Connector (FAN)

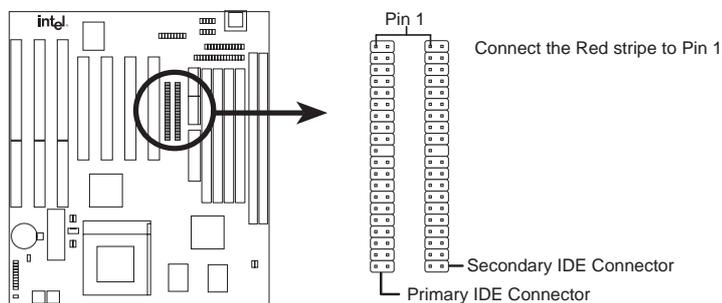
This connector supports a three-pin CPU cooling fan of 500 mA (6 watts) or less with a minimum of 3,500 RPM. Depending on the fan manufacturer, the wiring and plug may be different. The red wire should be positive and the black wire should be ground.

WARNING! Using these pins incorrectly can damage the motherboard and the CPU fan. These are not jumpers. Do not place jumper caps over these pins.



6. Primary / Secondary IDE connectors (two 40-pin blocks)

These connectors support the provided IDE hard disk ribbon cable. Connect the single end to the board, then connect the two plugs at the other end to your hard disk(s). If you install two hard disks, you must set the second drive to Slave mode. Refer to the documentation of your hard disk for the jumper settings. BIOS now supports SCSI device or IDE CD-ROM bootup (see “HDD Sequence SCSI/IDE First” & “Boot Sequence” in the BIOS Features Setup of the BIOS software). (Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged).

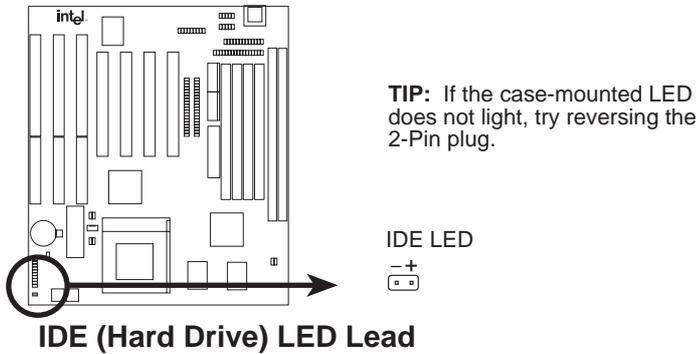


IDE (Hard Drive) Connectors

TIP: You can configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector. You can install one operating system on an IDE drive and another on a SCSI drive, then select the boot disk through BIOS Features Setup.

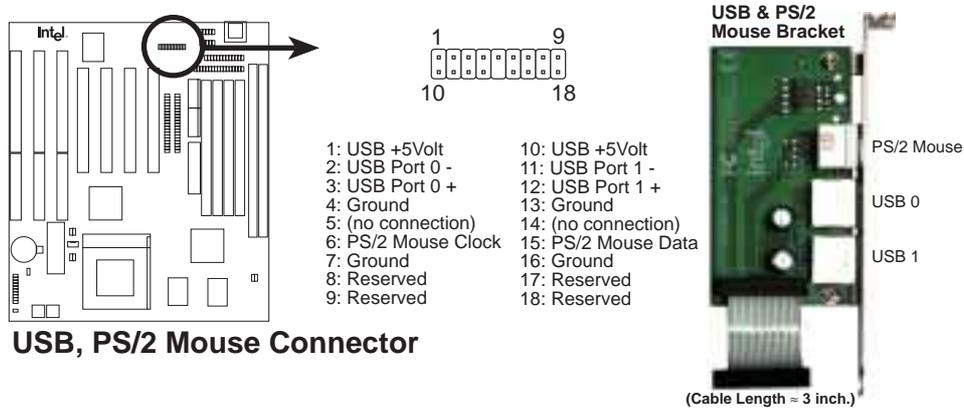
7. IDE activity LED (IDE LED)

This connector supplies power to the cabinet's IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE connectors will cause the LED to light up.



8. USB, PS/2 Mouse (18-pin block)

The external connector set connects to the 18 pin block and mounts to an open slot on your computer's chassis. The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, expansion cards can use IRQ12. See "PS/2 Mouse Control" in **BIOS Features Setup** and "USB Function" in **PnP and PCI Setup** of the BIOS SOFTWARE.



9. Message LED Lead (MSG LED)

This indicates whether a message has been received from a fax/modem. The LED will remain lit when there is no signal and blink when there is data transfer or waiting in the inbox).

10. SMI Suspend Switch Lead (SMI)

This allows the user to manually place the system into a suspend mode or “Green” mode where system activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector (see the figure below) connects to the case-mounted suspend switch. If you do not have a switch for the connector, you may use the “Turbo Switch” since it does not have a function. SMI is activated when it detects a *short to open* moment and therefore leaving it shorted will not cause any problems. You may have to make one or two pushes depending on the position of the switch. Wake-up can be controlled by settings in the BIOS but the keyboard will always allow wake-up (the SMI lead cannot wake-up the system). If you want to use this connector, “Suspend Switch” in the **Power Management Setup** of the BIOS SOFTWARE section should be on the default setting of *Enable*.

11. ATX Power Switch / Soft Power Switch (PWR SW) (For ATX power supplies)

The system power can be controlled by a momentary switch connected to this lead when an ATX power supply is used. Pushing the button once will switch the system between ON and SLEEP. Pushing the switch while in the ON mode for more than 4 seconds will turn the system off. The system power LED shows the status of the system’s power.

12. Reset Switch Lead (RESET)

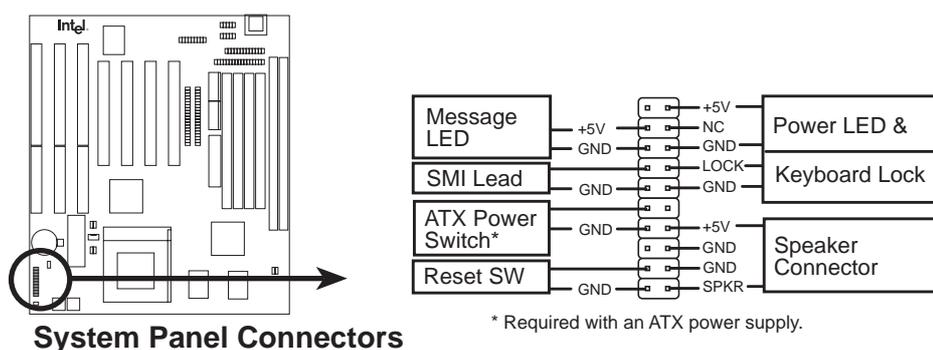
This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system’s power supply.

13. Keyboard Lock Switch Lead & System Power LED (KEYLOCK / PWR LED)

This 5-pin connector connects to the case-mounted keyboard lock switch for locking the keyboard and also to connect the system power LED. The system power LED lights when the system is powered on and blinks in sleep mode.

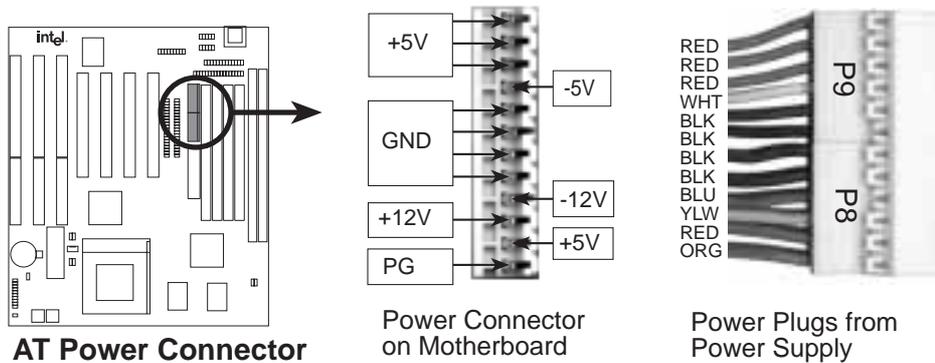
14. Speaker Connector (SPEAKER)

This 4-pin connector connects to the case-mounted speaker.



15. AT Power Connector (12-pin block)

This connector connects to a standard 5 Volt power supply. To connect the leads from the power supply, ensure first that the power supply is not plugged. Most power supplies provide two plugs (P8 and P9), each containing six wires, two of which are black. Orient the connectors so that the black wires are together.

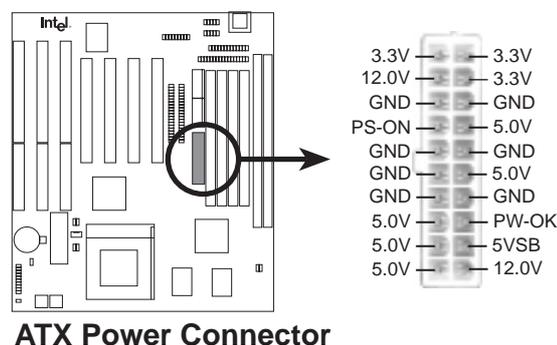


Using a slight angle, align the plastic guide pins on the lead to their receptacles on the connector. Once aligned, press the lead onto the connector until the lead locks into place.

16. ATX Power Supply Connector (20-pin block)

This connector connects to an ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.

IMPORTANT: Make sure that the ATX power supply can take at least 10mAmp load on the 5Volt standby lead (5VSB). You may experience difficulty in powering on your system without this.



Power Connection Procedures

1. After all jumpers and connections are made, close the system case cover.
 2. Make sure that all switches are in the off position as marked by \bigcirc .
 3. Connect the power supply cord into the power supply located on the back of your system case according to your system user's manual.
 4. Connect the power cord into a power outlet that is equipped with a surge protector.
 5. You may then turn on your devices in the following order:
 - a. Monitor
 - b. System power. For ATX power supplies, you need to switch on the power supply as well as press the ATX power switch on the front of the case.
 6. The power LED on the front panel of the system case will light. For ATX power supplies, the system LED will light when the ATX power switch is pressed. The monitor LED may light up after the system's if it complies with "Green" standards or if it has a power standby feature. The system will then run power-on tests. While the tests are running, additional messages will appear on the screen. If you do not see anything within 30 seconds from the time you turn on the power, the system may have failed a power-on test. Recheck your jumper settings and connections or call your retailer for assistance.
 7. During power-on, hold down the <Delete> key to enter BIOS setup. Follow the next section "BIOS SOFTWARE" for instructions.
- * **Powering Off your computer:** You must first exit or shut down your operating system before switching off the power switch. For ATX power supplies, you can press the ATX power switch after exiting or shutting down your operating system. If you use Windows 95, you can click **Shut Down** on the **Start** menu, and then click **Shut down the computer?** on the **Shut Down Windows** dialog box. The system will then give three quick beeps after about 30 seconds and power off after windows shut down. NOTE: The message **It's now safe to turn off your computer** will not be shown in Windows 95 when shutting down with ATX power supplies.

4. BIOS Software

Support Software

The support software contains the following files:

filelist.txt — A list of files included in the support software.

iflash.exe —The flash memory writer utility, which updates the BIOS by uploading a new BIOS file to the programmable flash chip on the motherboard. To determine the BIOS version, check the last three numbers of the code displayed on the upper left-hand corner of your screen during bootup. Larger numbers represent newer BIOS files.

NOTE: *The support software does **not** include a binary BIOS file. Save the motherboard’s BIOS file to a floppy diskette as soon as the system is operational. See “Save Current BIOS to File” on the next page for instructions.*

Flash Memory Writer Utility

The flash memory writer utility must be run while the system is in **real mode**. In particular, the Update BIOS Main Block from File and Update BIOS Including Boot Block and ESCD options require real mode. To run this utility, boot from a system floppy diskette without “autoexec.bat” and “config.sys” files.

```
Intel PnP BIOS
FLASH MEMORY WRITER V1.0
Copyright (C) 1997, Intel Corporation

Flash Type -- INTEL 28F001BXT
Current BIOS Revision: 1.00.01.YM0
Choose one of the following:
1. Save Current BIOS To File
2. Update BIOS Main Block From File
3. Advanced Features

Enter Choice: [ 1]

Press ESC To Exit
```

xxxx denotes the current BIOS version stored in the Flash EPROM

IMPORTANT: *If “unknown” displays, the memory chip is not programmable or is not supported with the PnP BIOS and therefore cannot be programmed by the flash memory writer utility.*

Main Menu

1. Save Current BIOS to File

(Perform as soon as system is operational)

This option allows you to copy the contents of the flash memory onto a diskette. This gives you a backup copy of the original motherboard BIOS in case you need to reinstall it.

2. Update BIOS Main Block from File

This option updates the BIOS from a file on the disk. The file can be either a new file or a backup file created by the “Save Current BIOS to File” option. If the boot block in the file is different from the current boot block, this option will not update the main block. Instead, it will display the following messages.

```
Boot Block of New BIOS is different from old one !!!  
Please Use 'Advanced Features' to flash whole BIOS !!!
```

3. Advanced Features

This option displays the Advanced Features screen for clearing the PnP configuration record and updating the motherboard BIOS.

Advanced Features

Advanced Features

```
Flash Type -- INTEL 28F001BXT  
Current BIOS Revision: 1.00.01.YM0  
Choose one of the following:  
1. Clear PNP ESCD Parameter Block  
2. Update BIOS Including Boot Block and ESCD  
  
Enter Choice: [ 2]  
  
Press ESC To Exit
```

xxxx denotes the current BIOS version stored in the flash memory

1. Clear PNP ESCD Parameter Block

This option erases the Plug-and-Play (PnP) configuration record.

2. Update BIOS Including Boot Block and ESCD

This option updates the boot block, the motherboard BIOS, and the PnP extended system configuration data (ESCD) parameter block from a new BIOS file.

Managing & Updating your Motherboard's BIOS

Upon first use of the computer system:

1. Create a bootable system floppy diskette.
2. Copy IFLASH.EXE to your new diskette.
3. Run IFLASH.EXE from your new diskette and select option 1 "Save Current BIOS to File." Enter the "Current BIOS Revision:" for the file name.

Updating BIOS (only when necessary):

1. Download an updated YM430TX BIOS file from the Intel's website, FTP site or BBS, and save it to the diskette you created above. See "Intel Contact Information" on page 3 for website locations.
2. Turn off your computer, open the system cabinet, and set the "Flash ROM Boot Block Programming" jumper to *Boot Block Write Enable*.
3. Boot from the floppy diskette you created above.
4. At the DOS prompt, type IFLASH <Enter>
5. Select option 2 "Update BIOS Main Block From File" from the Main Menu (or option 2 "Update BIOS Including Boot Block and ESCD" from the Advanced Features Menu if prompted by option 2 of the Main Menu).
6. On the next screen displayed, type the complete file name and extension of the new BIOS file, and press <Enter>. The utility then updates the BIOS file from disk.

WARNING! *If you encounter problems while updating the new BIOS, do not turn off the system because doing so might prevent your system from booting up again. Instead, repeat the process. If the problem persists, use the original BIOS file you saved to the disk above. If the utility is unable to successfully update a complete BIOS file, your system might not boot up. If this happens, your system will need service.*

7. After successfully updating the new BIOS file, exit the utility. Turn off the system, then set the "Flash ROM Boot Block Programming" jumper back to its default setting, *Write Protect*.
8. Turn on your computer and hold down the <Delete> key to enter BIOS setup. Select "Setup Default" to affect the new BIOS, then you may set other items from the Main Menu.

BIOS Setup

The motherboard supports two programmable flash chips: 5 volt and 12 volt. Either memory chip can be updated when BIOS upgrades are released. Use the Flash Memory Writer utility to download the new BIOS file into the flash chip as described in detail in this section.

All computer motherboards provide a Setup utility program for specifying the system configuration and settings. Run the Setup utility (described later) and note the configuration settings, particularly the hard disk specifications, for future reference.

When you install the motherboard, reconfigure your system, or receive a Run Setup message, you will need to enter new setup information. This section describes how to configure your system using this utility.

Setup Utility

The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the system gives you an opportunity to run Setup. During the power-on self test (POST), press the <Delete> key to invoke Setup. If you press <Delete> too late, the test routines will continue. In this case, reset the system and try again.

When you invoke Setup, the CMOS Setup Utility main screen displays with the following options:



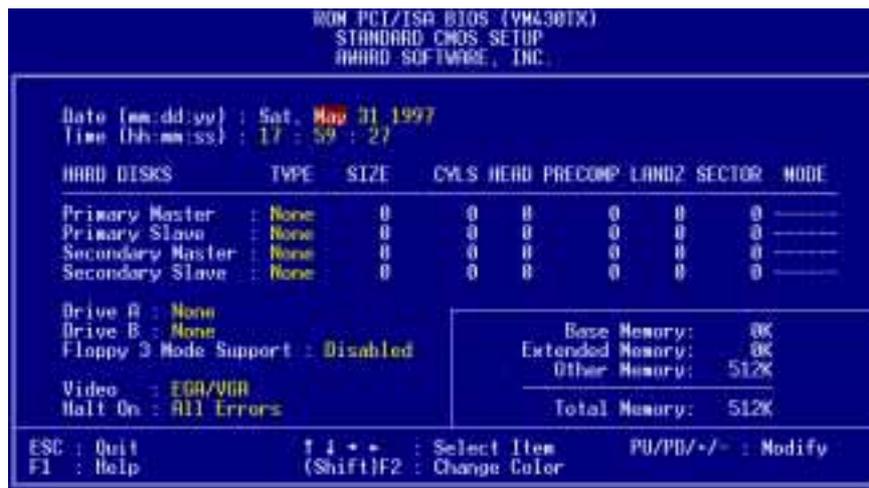
Load Defaults

The Load BIOS Defaults option loads the minimum settings for troubleshooting. The Load Setup Defaults option, on the other hand, loads optimized defaults for regular use. Choosing defaults at this level will modify all applicable settings.

A section at the bottom of the screen displays the control keys for this screen and their functions. Another section just below the control keys section displays information about the currently highlighted item in the list.

Standard CMOS Setup

The Standard CMOS Setup option allows you to record some basic system hardware configuration and set the system clock and error handling. After the motherboard is installed in a working system, you need not select this option again unless the CMOS memory is lost or damaged (such as when the CMOS battery weakens) or the hardware configuration is changed. In these cases, you need to respecify the configuration values.



User-configurable fields appear in a different color.

The boxed memory display at the lower right-hand side of the screen shows the total available memory in your system. The respective information adjusts automatically as you add memory.

The bottom of the screen displays the control keys and their functions. For example, pressing the <F1> key shows brief information about the selected field.

Details of Standard CMOS Setup

Date

To set the date, highlight the Date field. Press <Page Up>, <Page Down>, or <+>, <-> keys to set the current date or move from item to item.

Time

To set the time, highlight the Time field, then press <Page Up>, <PageDown>, or <+>, <-> keys to set the current time or move from item to item

Hard Disks

This field records the specifications for all non-SCSI hard disk drives installed in the system. (Specifications for SCSI hard disks are not entered here because they operate using device drivers and are not supported by the BIOS.)

For IDE hard disk drive setup, you can:

- Use the *Auto* setting for detection during bootup.
- Use IDE HDD Auto Detection in the main menu to automatically enter the drive specifications.
- Enter the specifications yourself manually by using the “User” option.

The entries for specifying the hard disk type include number of cylinders (CYLS), number of read/write heads (HEAD), write precompensation (PRECOMP), landing zone (LANDZ), number of sectors (SECTOR), and MODE. The SIZE field automatically adjusts according to the configuration you specify.

The MODE entry is for IDE hard disks only; it can be ignored for MFM and ESDI drives. This entry provides four options:

Normal — use this setting for 528 MB or smaller IDE drives

LBA — use this setting for 528 MB or larger IDE drives that support logical block addressing

Large — use this setting for 528-MB or larger IDE drives that do not support logical block addressing.

Auto — see the discussion on the next page.

The *Large* drive type can be used only with MS-DOS and is very uncommon. Most IDE drives over 528MB support the *LBA* mode.

Auto detection of hard disks on bootup

For each field: Primary Master, Primary Slave, Secondary Master, and Secondary Slave, you can select *Auto* under the TYPE and MODE fields. This will enable auto detection of the IDE drives during bootup. Using this option, you can change hard drives (with the power off) and then power on without having to reconfigure the drive type. (Older hard drives that do not support auto detection require you to manually configure the drive type as described on the previous page.)

NOTE: Defaults are noted in parenthesis next to each function heading.

Drive A / Drive B (None)

These fields record the types of floppy disk drives installed. The available options for drives A and B are *360K, 5.25 in.; 1.2M, 5.25 in.; 720K, 3.5 in.; 1.44M, 3.5 in.; 2.88M, 3.5 in.; None*

Floppy 3 Mode Support (Disabled)

This is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5-inch disk. This is normally disabled but you can choose *Drive A, Drive B, Both, or Disabled*.

Video (EGA/VGA)

Select the type of video card installed. The options are *EGA/VGA, CGA 40, CGA 80, and MONO* (for Hercules or MDA). For VGA or higher resolution, choose the *EGA/VGA*.

Halt On (All Errors)

This field determines which types of errors will cause the system to halt. Choose from *All Errors; No Errors; All,But Keyboard; All,But Diskette; and All,But Disk/Key*.

BIOS Features Setup

This “BIOS Features Setup” option consists of configuration entries that allow you to improve system performance or set up system features according to your preference. The motherboard’s design requires that some entries remain in their default settings.



NOTE: Defaults are noted in parenthesis next to each function heading.

Details of BIOS Features Setup

Virus Warning (Disabled)

If enabled, this feature protects the boot sector and partition table of the hard disk against accidental modifications. Any attempt to write to them causes the system to halt and display a warning message. If this occurs, you can either allow the operation to continue or reboot from a bootable, virus-free floppy disk and investigate the system. When installing new operating systems, you must disable this feature to prevent write errors.

CPU Internal Cache (Enabled)

Choose *Disable* to turn off the CPU’s built-in level 1 cache.

External Cache (Enabled)

Choose *Disable* to turn off the CPU’s external level 2 cache.

Quick Power On Self Test (Enabled)

This feature speeds up the power-on self test (POST) routine by testing once, rather than four times. The default is *Enabled*.

HDD Sequence SCSI/IDE First (IDE)

When using both SCSI and IDE hard disk drives, IDE is always the boot disk using drive letter C. When set to *SCSI*, this feature allows a SCSI hard disk drive to be the boot disk. This allows systems to have multiple operating systems on both IDE and SCSI drives or to boot the primary operating system from a SCSI hard disk drive.

Boot Sequence (C,A)

This feature determines the order in which the system looks for an operating system. Options are *C,A*; *A,CDROM,C*; *CDROM,C,A*; *D,A*; *E,A*; *F,A*; *C only*; and *A,C*.

Boot Up Floppy Seek (Disabled)

When this feature is enabled, the BIOS seeks drive A once.

Floppy Disk Access Control (R/W)

This feature enables protection of files. The *Read Only* setting allows reads from a floppy disk, but not writes. The default *R/W* allows both reads and writes.

IDE HDD Block Mode Sectors (HDD MAX)

This feature enhances hard disk performance by making multi-sector instead of single-section transfers. Most IDE drives, except older versions, support this feature. Selections are *HDD MAX*, *Disabled 2, 4, 8, 16*, and *32*.

Security Option (System)

With the default setting, *System*, the system prompts for a user password on every boot. With the other setting, *Setup*, the system prompts for a supervisor password whenever the Setup utility is started. You can specify a password by using the *Supervisor Password* or *User Password* option from the main screen (described later).

PS/2 Mouse Function Control (Auto)

This feature supports a PS/2 mouse. The default, *Auto*, allows the system to detect a PS/2 mouse on bootup. If a PS/2 mouse is detected, the system reserves IRQ12 for the mouse. Otherwise, IRQ12 will be reserved for expansion cards. The *Disabled* setting disables the PS/2 mouse and reserves IRQ12 for expansion cards.

PCI/VGA Palette Snoop (Disabled)

If a nonstandard VGA card, such as a graphics accelerator or MPEG video card, is displaying colors improperly, the *Enabled* setting should correct the problem. Otherwise, leave this feature *Disabled*.

OS/2 Onboard Memory > 64M (Disabled)

When using OS/2 operating systems with installed DRAM of greater than 64MB, *Enable* this feature. Otherwise, leave this setting *Disabled*.

Video ROM BIOS Shadow (Enabled)

This feature changes the video BIOS location from ROM to RAM. Enabling it enhances system performance, as RAM access is faster than ROM.

C8000-CBFFF to DC000-DFFFF (Disabled)

These fields are used for shadowing other expansion card ROMs. You need to enter the specific addresses to be shadowed. Shadowing a ROM reduces the memory available between 640KB and 1024KB by the amount used for this purpose.

Boot Up NumLock Status (On)

This feature activates the Num Lock function upon system boot.

Boot Up System Speed (High)

This feature has no function and should be left at the setup default.

Typematic Rate Setting (Disabled)

When enabled, this feature enables the typematic rate and typematic delay.

Typematic Rate (Chars/Sec) (6)

This feature controls the speed at which the system registers repeated keystrokes. Options range from 6 to 30 characters per second. Setup default setting is 6; other settings are 8, 10, 12, 15, 20, 24, and 30.

Typematic Delay (Msec) (250)

This field sets the time interval for displaying the first and second characters. Four delay rate options are available: 250, 500, 750, and 1000.

Chipset Features Setup

The Chipset Features Setup option controls the configuration of the board's chipset. Control keys are the same as for the previous screen.



NOTE: Defaults are noted in parenthesis next to each function heading.

Details of Chipset Features Setup

Auto Configuration (60ns DRAM)

The default setting of *60ns DRAM* sets the optimal timings for items 2 through 9 for 60ns DRAM modules. If you are using 70ns DRAM modules, you must change this item to *70ns DRAM*. The *Disabled* setting enables you to set the timings for items 2 through 9.

SDRAM CAS# Latency (3T)

The YM430TX motherboard and chipset support CAS# latency of either 2 or 3 clocks. Check the CAS# latency specification in the datasheet for the DIMMs you are using. If the DIMMs support a 2-clock CAS# latency, you can set this to 2T for better performance. Otherwise, leave this setting at the default (3T).

SDRAM Speculative Read (Disabled)

If this feature is *Enabled*, the CPU will issue predict commands to access the DRAM. If a miss occurs, the CPU will cancel the command. Some operating systems under certain situations have a problem utilizing this feature so it is normally *Disabled*.

Passive Release (Enabled)

This feature allows concurrency of ISA/EISA cycles and CPU-to-PCI cycles. When this feature is enabled, the TXC will be possible to re-arbitrate PCI bus and allow the CPU to access PCI even when the PCEB has been granted the bus.

Delayed Transaction (Disabled)

If *Enabled*, this feature frees the PCI Bus during CPU accessing of 8-bit ISA cards, which normally consume about 50-60 PCI Clocks without PCI delayed transaction. If PCI Bus Masters cannot use the PCI Bus, leave this on the default setting of *Disabled* for some ISA cards that are not PCI 2.1 compliant.

16-bit I/O Recovery Time (1 BUSCLK)

Timing for 16-bit ISA cards

8-bit I/O Recovery Time (1 BUSCLK)

Timing for 8-bit ISA cards

Video BIOS Cacheable (Enabled)

Allows the Video BIOS to be cached to allow faster execution.

Memory Hole at Address (None)

This feature reserves either *15MB-16MB* or *14MB-16MB* memory address space to ISA expansion cards that specifically require this setting. Memory from 14MB and up or 15MB and up will be unavailable to the system because expansion cards can only access memory up to 16MB.

Onboard FDC Controller (Enabled)

When enabled, this feature allows you to connect your floppy disk drives to the onboard floppy drive connector instead of a separate controller card. If you want to use a different controller card to connect the floppy drives, set this field to *Disabled*.

Onboard FDC Swap A & B (No Swap)

This field allows you to reverse the hardware drive letter assignments of your floppy disk drives. Two options are available: *No Swap* and *Swap AB*. If you want to switch drive letter assignments, set this field to *Swap AB*, and the swap will be controlled by the onboard chipset.

Onboard Serial Port 1 (3F8H/IRQ4)

Settings are either *3F8H/IRQ4*, *2F8H/IRQ3*, *3E8H/IRQ4*, *2E8H/IRQ10*, or *Disabled*, for the onboard serial connector.

Onboard Serial Port 2 (2F8H/IRQ3)

Settings are either *2F8H/IRQ3*, *3E8H/IRQ4*, *2E8H/IRQ10*, *Disabled*, or *3F8H/IRQ4*, for the onboard serial connector.

Onboard Parallel Port (378H/IRQ7)

This field sets the address of the onboard parallel port connector. You can select either *378H / IRQ 7*, *278H / IRQ 5*, *Disabled*, or *3BCH / IRQ 7*. If you install an I/O card with a parallel port, ensure that there is no conflict in the address assignments. The PC can support up to three parallel ports as long as there are no conflicts for each port.

Parallel Port Mode (ECP+EPP)

This field allows you to set the operation mode of the parallel port. The setting *ECP+EPP* allows normal speed operation in a two-way mode; *Normal* allows normal-speed operation but in one direction only; *EPP* allows bidirectional parallel port operation at maximum speed; and *ECP* allows the parallel port to operate in bidirectional mode and at a speed faster than the maximum data transfer rate.

ECP DMA Select (3)

This selection is available only if you select *ECP* or *ECP+EPP* in the Parallel Port Mode. Select either DMA Channel 3, *Disabled*, or 1.

Onboard PCI IDE Enable (Both)

You can enable the *Primary* IDE channel, *Secondary* IDE channel, or *Both*, or *Disable* both channels (for systems with only SCSI drives).

IDE Ultra DMA Mode (Auto)

This sets the IDE UltraDMA to be active when using UltraDMA-capable IDE devices. The BIOS will automatically adjust or disable this setting for slower IDE devices so that Auto or high settings will not cause problems for older IDE devices. Choose *Disable* if you do not want this feature for all devices.

IDE 0 Master/Slave PIO/DMA Mode, IDE 1 Master/Slave PIO/DMA Mode (Auto)

Each channel (0 and 1) has both a master and a slave making four IDE devices possible. Because each IDE device may have a different Mode timing (0, 1, 2, 3, 4), it is necessary for these to be independent. PIO and DMA timings can be independently set. The default setting of *Auto* will allow autodetection to ensure optimal performance.

Power Management Setup

This “Power Management Setup” option allows you to reduce power consumption. This feature turns off the video display and shuts down the hard disk after a period of inactivity.



NOTE: Defaults are noted in parenthesis next to each function heading.

Details of Power Management Setup

Power Management (User Define)

This field acts as the master control for the power management modes. *User Define* allows you to set power saving options according to your preference; *Disable* disables the power saving features; *Min Saving* puts the system into power saving mode after a long period of system inactivity; *Max Saving* puts the system into power saving mode after a brief period of system inactivity.

IMPORTANT: *Advanced Power Management (APM) should be installed to keep the system time updated when the computer enters suspend mode activated by the BIOS Power Management. For DOS environments, you need to add DEVICE=C:\DOS\POWER.EXE in your CONFIG.SYS. For Windows 3.x and Windows 95, you need to install Windows with the APM feature. A battery and power cord icon labeled “Power” will appear in the “Control Panel.” Choose “Advanced” in the Power Management Field.*

Video Off Option (Susp,Stby -> Off)

This field determines when to activate the video off feature for monitor power management. The settings are *All Modes -> Off*; *Always On*; *Suspend -> Off*; and *Susp,Stby -> Off*.

Video Off Method (DPMS OFF)

This field defines the video off features. The following options are available: *DPMS OFF*, *DPMS Reduce ON*, *Blank Screen*, *V/H SYNC+Blank*, *DPMS Standby*, and *DPMS Suspend*. The DPMS (Display Power Management System) features allow the BIOS to control the video display card if it supports the DPMS feature. *Blank Screen* only blanks the screen (use this for monitors without power management or “green” features. If set up in your system, your screen saver will not display with *Blank Screen* selected). *V/H SYNC+Blank* blanks the screen and turns off vertical and horizontal scanning.

PWR Button < 4 Secs (Soft Off)

The default of *Soft Off* allows the ATX switch to function as a normal system power-off button when pressed for less than 4 seconds. *Suspend* allows the button to have a dual function where less than 4 seconds will place the system in sleep mode. *No Function* disables the ATX switch of any functions under 4 seconds. Regardless of the setting, holding the ATX switch for more than 4 seconds will power off the system.

PWR Up On Modem Act (Enabled)

This allows the settings of *Enabled* or *Disabled* for powering up the computer (turns the ATX power supply on) when the modem begins receiving or transmitting data while the computer is off.

AC PWR Loss Restart (Disabled)

This item allows you to set whether you want your system to boot up or not after the power has been interrupted. After power is restored, *Disabled* leaves your system off and *Enabled* boots up your system.

PM Timers (Disable)

This section controls the time-out settings for the Power Management scheme. The fields included in this section are HDD Power Down, which places the hard disk into its lowest power consumption mode, and the Doze, Standby and Suspend Modes.

The system automatically “wakes up” from any power saving mode when there is system activity, such as when a key is pressed from the keyboard, or when there is activity detected from the enabled IRQ channels.

HDD Power Down shuts down any IDE hard disk drives in the system after a period of inactivity. This time period is user-configurable to *1-15 Mins* or *Disable*. This feature does not affect SCSI hard drives.

The **Doze Mode**, **Standby Mode**, and **Suspend Mode** fields set the period of time after which each of these modes activate: *30 sec*, *1 Min*, *2 Min*, *4 Min*, *8 Min*, *20 Min*, *30 Min*, *40 Min*, *1 Hour*.

PNP and PCI Setup

This “PNP and PCI Setup” option configures the PCI bus slots. All PCI bus slots on the system use INTA#, thus all installed PCI cards must be set to this value.



NOTE: Defaults are noted in parenthesis next to each function heading.

Details of PNP and PCI Setup

PNP OS Installed (No)

When Plug and Play operating systems (OS) are installed, interrupts may be reassigned by the OS when *Yes* is selected. When a non-Plug and Play OS is installed or to prevent reassigning of interrupt settings, select *No*.

Slot 1/2/3/4 IRQ (Auto)

The first four fields on the screen set how IRQ use is determined for each PCI slot. Slot 1 (Right) is nearest the memory sockets. The default setting for each field is *Auto*, which uses auto-routing to determine IRQ use. The other options are manual settings of *NA*, 5, 7, 9, 10, 11, 12, 14, or 15 for each slot.

PCI Latency Timer (32 PCI Clock)

“32 PCI Clock” enables maximum PCI performance for this motherboard.

IRQ xx Used By ISA (No/ICU)

These fields indicate whether or not the displayed IRQ for each field is being used by a Legacy (non-PnP) ISA card. Two options are available: *No/ICU* and *Yes*. The first option, the default value, indicates either that the displayed IRQ is not used or an ISA Configuration Utility (ICU) is being used to determine if an ISA card is using that IRQ. If you install a Legacy ISA card that requires a unique IRQ, and you are not using an ICU, you must set the field for that IRQ to *Yes*. For example: If you install a Legacy ISA card that requires IRQ 10, then set **IRQ10 Used By ISA** to *Yes*.

DMA x Used By ISA (No/ICU)

These fields indicate whether or not the displayed DMA channel for each field is being used by a Legacy (non-PnP) ISA card. Available options include: *No/ICU* and *Yes*. The first option, the default setting, indicates either that the displayed DMA channel is not used or an ICU is being used to determine if an ISA card is using that channel. If you install a Legacy ISA card that requires a unique DMA channel, and you are not using an ICU, you must set the field for that channel to *Yes*.

ISA MEM Block BASE (No/ICU)

This field allows you to set the base address and block size of a Legacy ISA card that uses any memory segment within the C800, CC00, D000, D400, D800, and DC00 address ranges. If you have such a card, and you are not using an ICU to specify its address range, select a base address from the six available options; the **ISA MEM Block SIZE** field will then appear for selecting the block size. If you have more than one Legacy ISA card in your system that requires to use this address range, you can increase the block size to either 8K, 16K, 32K, or 64K. If you are using an ICU to accomplish this task, leave **ISA MEM Block BASE** to its default setting of *No/ICU*.

SYMBIOS SCSI BIOS (Auto)

The default uses *Auto* settings for the onboard SCSI BIOS. If you do not want to use the onboard SCSI BIOS, choose *Disabled*.

Load BIOS Defaults

This “Load BIOS Defaults” option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high performance features. To load these default settings, highlight “Load BIOS Defaults” on the main screen and then press <Enter>. The system displays a confirmation message on the screen. Press <Y> and then <Enter> to confirm. Press <N> and then <Enter> to abort. This feature does not affect the fields on the Standard CMOS Setup screen.

Load Setup Defaults

This “Load Setup Defaults” option allows you to load the default values to the system configuration fields. These default values are the optimized configuration settings for the system. To load these default values, highlight “Load Setup Defaults” on the main screen and then press <Enter>. The system displays a confirmation message on the screen. Press <Y> and then <Enter> to confirm. Press <N> and then <Enter> to abort. This feature does not affect the fields on the Standard CMOS Setup screen.



Supervisor Password and User Password

“Supervisor Password” sets a password that will be used to protect the system and the Setup utility; “User Password” sets a password that will be used exclusively on the system. By default, the system comes without any passwords. To specify a password, highlight the type you want and then press <Enter>. A password prompt appears on the screen. (The password is case sensitive, and can be up to 8 alphanumeric characters). Type your password and then press <Enter>. The system confirms your password by asking you to type it again. After setting the password, the screen automatically reverts to the main screen.

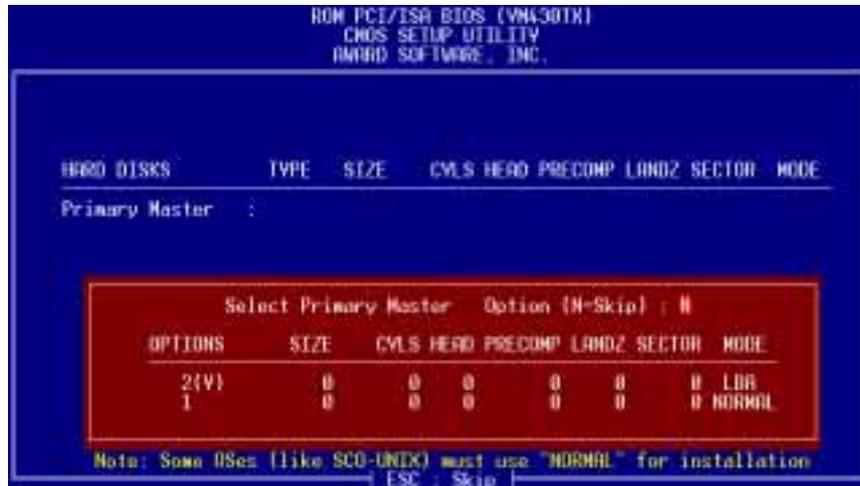


To implement password protection, specify under “Security Option” in the BIOS Features Setup screen when the system will prompt for the password. To disable either password, press <Enter> instead of entering a new password when the “Enter Password” prompt appears. A message confirms that the password has been disabled.

NOTE: *If you forget your password, refer to Jumper Settings in Section 3 for procedures on clearing the CMOS.*

IDE HDD Auto Detection

This “IDE HDD Auto Detection” option detects the parameters of an IDE hard disk drive and enters them into the Standard CMOS Setup screen.



Up to four IDE drives can be detected, with parameters for each listed inside the box. To accept the optimal entries, press <Y> or else select from the numbers displayed under the Options field (2, 1, 3 in this case); to skip to the next drive, press <N>. If you accept the values, the parameters will appear listed beside the drive letter on the screen. The process then proceeds to the next drive letter. Pressing <N> to skip rather than to accept a set of parameters causes the program to enter zeros after that drive letter.

Remember that if you are using another IDE controller that does not feature Enhanced IDE support for four devices, you can only install two IDE hard disk drives. Your IDE controller must support the Enhanced IDE features to use Drive E and Drive F. The onboard PCI IDE controller supports Enhanced IDE, with two connectors for connecting up to four IDE devices. If you want to use another controller that supports four drives, you must disable the onboard IDE controller in the Chipset Features Setup screen.

When autodetection is completed, the program automatically enters all entries you accepted on the field for that drive in the Standard CMOS Setup screen. Skipped entries are ignored and are not entered in the screen.

If you are auto-detecting a hard disk that supports the LBA mode, three lines will appear in the parameter box. Choose the line that lists LBA for an LBA drive. Do not select Large or Normal.

The auto-detection feature can only detect one set of parameters for a particular IDE hard drive. Some IDE drives can use more than one set. This is not a problem if the drive is new and there is nothing on it.

IMPORTANT: *If your hard drive was already formatted on an older previous system, incorrect parameters may be detected. You will need to enter the correct parameters manually or use low-level format if you do not need the data stored on the hard drive.*

If the parameters listed differ from the ones used when the drive was formatted, the drive will not be readable. If the auto-detected parameters do not match the ones that should be used for your drive, do not accept them. Press <N> to reject the presented settings and enter the correct ones manually from the Standard CMOS Setup screen.

Save & Exit Setup

Select this option to save into the CMOS memory all modifications you had specified during the current session. To save the configuration changes, highlight the “Save & Exit Setup” option on the main screen and then press <Enter>.



Exit Without Saving

Select this option to exit the Setup utility without saving the modifications you specify during the current session. To exit without saving, highlight the “Exit Without Saving” option on the main screen and then press <Enter>.

5. Support Software

Intel YM430TX Software and Manual CD

The CD has three directories: **Software**, **Manual**, and **Warranty**.

Software

The Software directory contains the following:

- ISA Configuration Utility for both DOS and Windows® 3.1/3.11.
- BIOS Flash Utility.
- Windows 95 update utility for Intel 430TX PCIset.

Manual

This section contains Product documentation. The documentation is in Adobe Acrobat Portable Document File format.

WARRANTY

This section contains Warranty information. Warranty documentation is available in Adobe® Acrobat .PDF format. The Acrobat Reader is included on this CD, and must be installed before you can view the .PDF document.

Please view the readme.txt file on the CD for installation instructions.