6BX/ZX/VIA82

User's Manual Version 1.3

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Note:

If there is any change in the content please
refer to our website.Regarding the BIOS
setting & Driver installation,refer the
web site please.(www. acorp.com.tw)

Chapter 1

1

Introduction

How This Manual is Organized

This manual is divided into the following sections:

Chapter 1   **Introduction**   : Manual information and checklist.

Chapter 2   **Features**   : Information and Specifications concerning this mainboard.

Chapter 3   **Installation**   : Instructions on setting up the board.

Package Checklist

Please check that your package is complete . If you discover any item damaged or missing , please contact with your retailer immediately.

- ⌛ The 6BX/ZX/VIA82 mainboard.

- ⌛ 1 x IDE ribbon cable.

- ⌛ 1 x floppy ribbon cable.

- ⌛ 6BX/ZX/VIA82 support software:
    - Flash Memory Write utility to update the FLASH BIOS.
    - Technical Support Form.

- ⌛ This user's Manual

Chapter 2

2

Features

Features of the 6BX/ZX/VIA82 Mainboard

The 6BX/ZX/VIA82 is designed for the PC user's who want many new key features processed by the fastest CPU in a economic package. This mainboard :

- ⧖ **New general CPU support :**
    - Socket 370 Celeron (300MHz~677MHz(1.5V))processor.
    - Socket 370 Coppermine (500MHz~800MHz)processor.
    - CPU clock select support for 66/100MHz.

- **Chipset :**
  **Intel 440BX PCIset™ /440ZX PCIset™/VIA 693+596A
  (6VIA82)** chips with I/O subsystems.

- **Biggest memory capacity :**
  6BX/VIA82 is equipped with three DIMM socket to sup-
  port (16MB, 32MB, 64MB, 128MB.256MB) 168 pin 3.3v
  SDRAM SPD(Special Presence Detect).Maximum memory
  up to 768MB.
  6ZX82 is equipped with two DIMM socket to support 168
  pin 3.3v SDRAM SPD(Special Presence Detect).Maximum
  memory up to 512MB.

- **AGP for fast VGA solution :**
  AGP (Accelerator Graphic Port) will enhance & improve
  display performance and Application. The bus speed is 66
  MHz .

- **ISA & PCI Expansion Slot :**
  Provide one 16 bit ISA, and three 32 bit PCI slots.

- **PCI Bus MasterIDE Controller :**
  Comes with an on-board PCI Bus Master IDE, controller
  with two connectors that supports four IDE devices in two
  channels, Provides faster data transfer rate, and supports
  Enhanced IDE devices such as Tape Backup and CD-ROM
  devices(ATAPI). This controller supports PIO mode 3 and 4
  (16.6MB/sec.), and Ultra DMA 33(33MB/Sec.), also sup-
  ports ZIP100 and LS-120. BIOS support IDE CD-ROM or
  SCSI bootup.

- **Super Multi-I/O :**

   Provides two high-speed UART2 compatible serial ports (match NS16C550A compatible) and one parallel port with SPP,EPP and ECP capabilities. UART2 can also be directed from COM2 to the Infrared Module for wireless connections. Two floppy drives of either 5.25" or 3.5 "(1. 25MB,1.44MB or 2.88MB) are also supported without an external card. Supports Japanese standard "Floppy 3 mode" (3.5" 1.25MB).

- **CPU built-in Level 2 Cache :**

   128/256KB Pipeline Burst Level 2 cache in the PII/III CPU processors.

- **WOL (Wake On LAN) :**

   Supports system power up from LAN ring up .

- **IrDA Port :**

   Support this serial fast communication up to 115.2Kbps.

- **Support Ring on by modem/Alarm on :**

   Support System power up from Modem ring up or timer of System. Required enabled in Ring on by modem and Alarm on in BIOS.
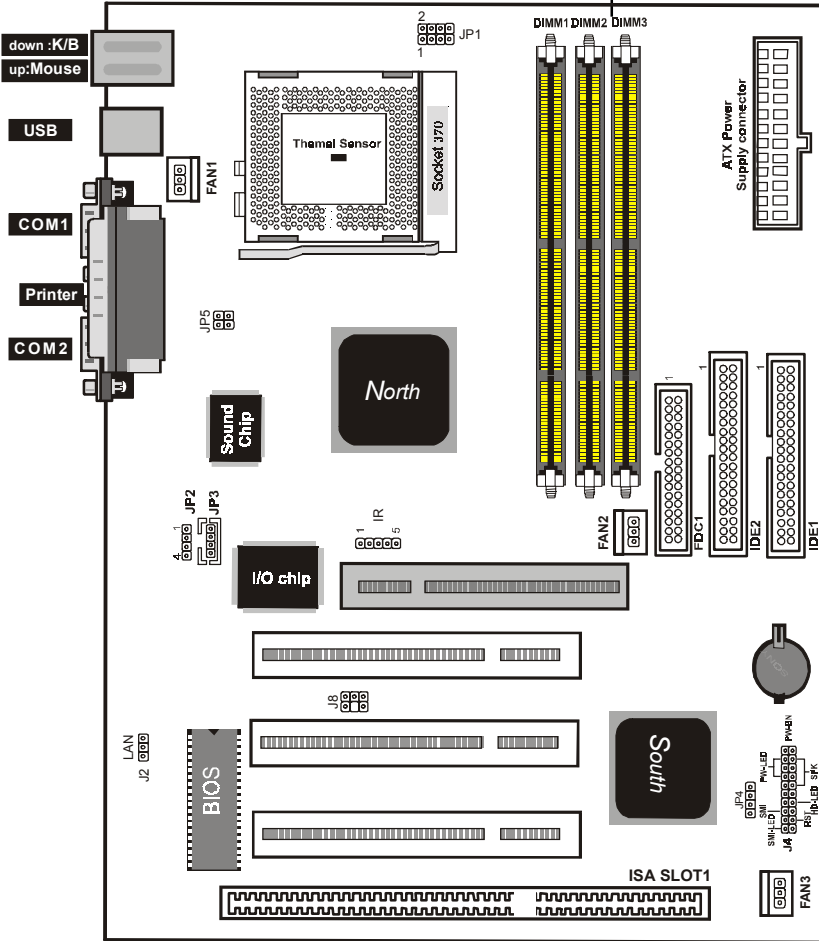
- To support CPU FAN On/Off and LED indicator under Suspend mode.

- **To support CPU temperature detect and Alarm warning by sound. (option)**

- **Dimension : 24.3 cm x 19.0 cm**

The 6BX/ZX/VIA82 Mainboard layout

6ZX82 only two DIMM sockets

down :K/B
up:Mouse

USB

COM1

Printer

COM2

JP1

2
1

FAN1

Thermal Sensor

Socket 370

JP5

Sound
Chip

North

JP2 JP3

4   1

I/O chip

IR
1
5

FAN2

DIMM1 DIMM2 DIMM3

ATX Power
Supply connector

FDC1

IDE2

IDE1

J8

LAN
J2

BIOS

South

JP4
SMI
SMI-LED
PW-LED
RST
HD-LED
SPK
PW-BN
J4

ISA SLOT1

FAN3

Chapter 3

3

Installation

Jumper

Expansion Slot · Which page

Connectors · Refer to page

System Installation Setup

Before using your computer, you must finish the following steps:
1. Set jumpers on mainboard
2. Install SDRAM module.
3. Install the Processor.
4. Connect Ribbon Cables, Cabinet Wires, and Power supply.
5. Install Add on Cards.
6. Setup the BIOS software.

Static Electricity Precaution

⌛ Keep the mainboard and other system components in their anti-static packaging until you are ready to install them.

⌛ Do all preparative work on a static-free surface with the main board components facing up.

⌛ Unplug your computer when working on the inside.

⌛ Wear an Anti-static wrist strap.

⌛ Hold the system components, boards or cards by its edges only. Be careful not to touch any of IC chips, circuitry, contacts or connections, especially gold contacts on the mainboard.

Jumper Settings

Jumpers

Several hardware setting are made through the use of jumper caps to connect jumper pins (Jxx) on the mainboard. See " Map of the mainboard" for the locationed the jumpers.

The jumper settings will be described numerically such as [----], [1-2], [2-3] for no connection, connect pins 1 & 2, and connect pins 2 & 3 respectively. Pin 1 for our m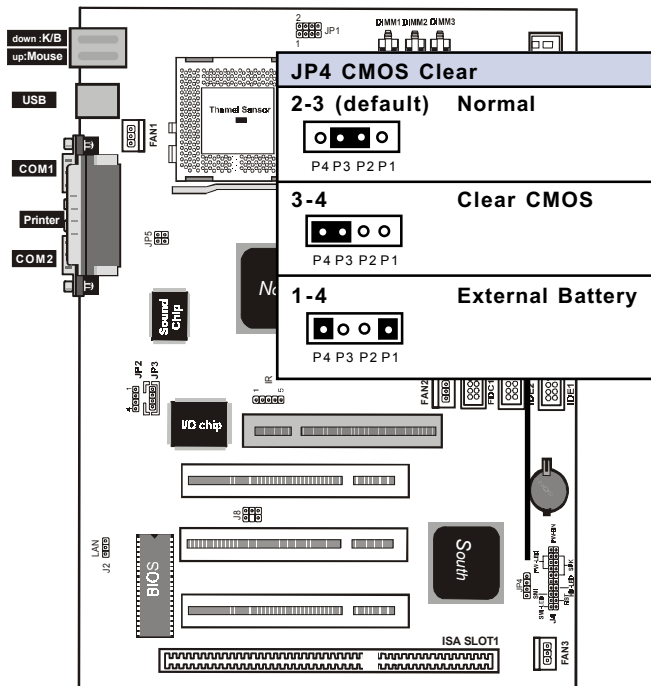ainboard is always on top one or on the left when holding the mainboard with the keyboard away from yourself. "P1" is written besides pin 1 on jumper with three pins. The jumpers will also be shown graphically such as ⬜ to connect pin 1&2 and ⬜ to connect 2&3. Jumpers with two pins will be shown as ⬜ for Short (on)and ⬜ for Open (off).For manufacturing simplicity it 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 pin, simply place a plastic jumper cap over the two pins as diagrammed.

Real Time Clock (RTC) RAM - JP4 :

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

JP4 CMOS Clear	
2-3 (default)	**Normal**
P4 P3 P2 P1	
3-4	**Clear CMOS**
P4 P3 P2 P1	
1-4	**External Battery**
P4 P3 P2 P1	

System Memory (DIMM Module)

This **6BX/ZX/VIA82** main board supports three 168 pins DIMM (Dual Inline Memory Module) **(6ZX82 supports two DIMMs)** of 16 MB, 32 MB, 64 MB, 128 MB ,256MB to form a memory size between 16MB to 256MB.

The DRAM can be either 45ns,50ns,or 60ns 3.3v SDRAM,and 3.3v Enhanced Data Output (EDO) RAM.

Install memory in any or all Banks in Combination:

Bank	Memory module
DIMM 1	16MB,32MB,64MB,128MB,256MB
(Bank 0-1)	168 pin,3.3v SDRAM / EDO RAM
DIMM 2	16MB,32MB,64MB,128MB,256MB
(Bank 2-3)	168 pin 3.3v,SDRAM / EDO RAM
DIMM 3	16MB,32MB,64MB,128MB,256MB
(Bank 4-5)	168 pin 3.3v,SDRAM / EDO RAM
	Total System Memory(Max 768MB)

Note :

- **The DIMM Slot does not support any 5v EDO DIMM module.**
- **The DIMM Slot does not support any 5v SDRAM DIMM module.**
- **Memory speed setup is required through "Auto Configuration" in BIOS chipset Setup of BIOS SOFTWARE. If several speed memorious are used, You must set Auto Configuration to low. Example If both 50ns, 60ns are used, Please set Auto configuration to 60ns.**
- **It's allowed any DIMM module put in any DIMM slot. It's allowed there are different capacity DIMM module in all DIMM slot.**

DIMM Memory Installation

Insert the module (s) as shown. Because the number pins are different on either side of the breaks,the module will only fit in the orientation as shown. SDRAM DIMM modules have different pin contacts on each side and therefore have a higher pin density.
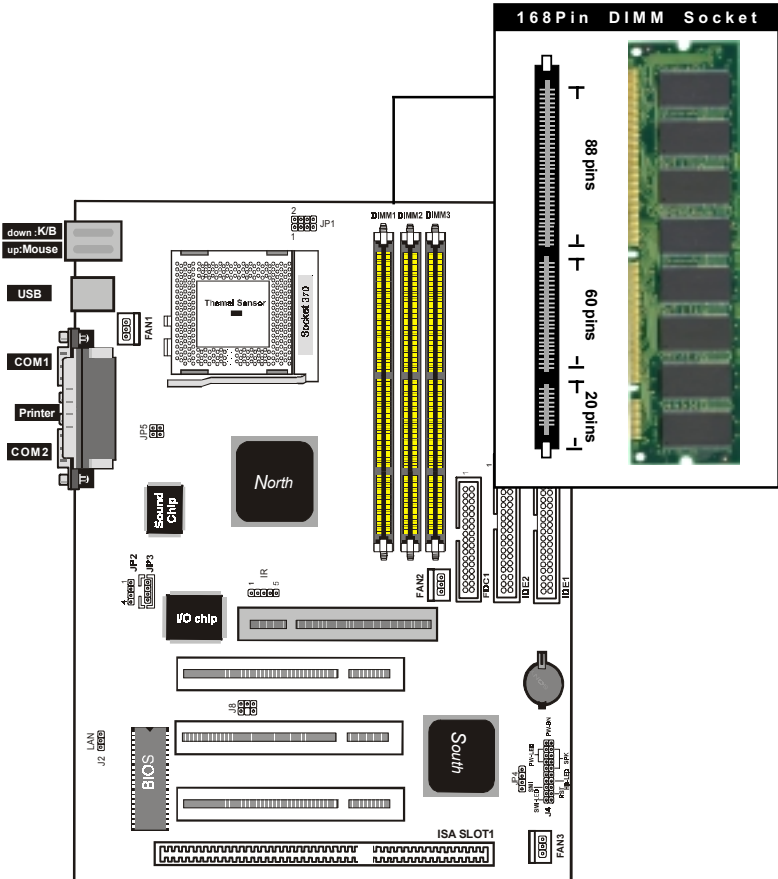
The Dual Inline Memory Module (DIMM) memory module must be 3.3v Extended Data Output (EDO) DRAM or SDRAM. You can identify the type of DIMM module by the illustration below:

RFU   Unbuffered   5.0V   Reserved

Buffered   3.3V

DRAM Key Position   **Voltage Key Position**
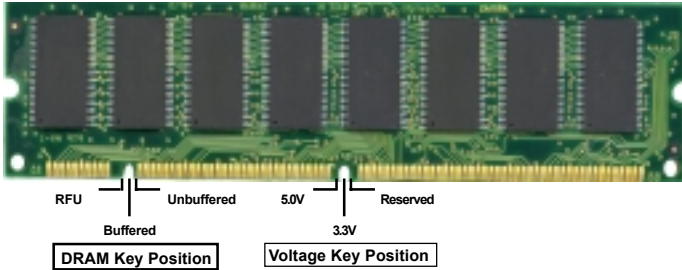
**168 Pin DRAM DIMM Notch Key Definitions**

The notch on the DIMM module will shift between left, center, or right to identify the type and also to prevent the wrong type to be inserted into the DIMM slot on the Mainboard. You must ask your retailer for Specifications before purchasing.

Four clock signals are supported on this mainboard

CPU Installation

The motherboard provides a ZIF socket 370. The CPU that came
with the motherboard should have a fan attached to it to prevent
overheating . If this is not the case then purchase a fan before you
turn on your system.

To install a CPU , 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 upwards to a 90-degree right angle. In-
sert the CPU with the correct orientation shown . The notched cor-
ner should point towards end of the lever. Because the CPU has a
corner pin for two of the four corners, the CPU will only fit in the
orientation as shown.
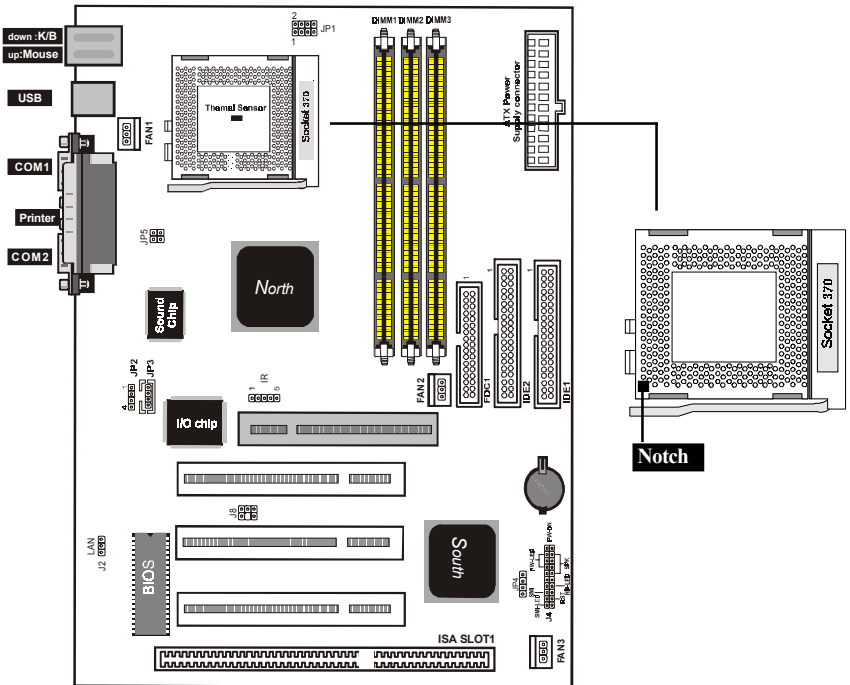
Selecting the CPU Frequency

CPU voltage auto-detection and allow user to set CPU frequency through BIOS setup, no jumper or switch is needed. The correct CPU information is saved into EPROM, with these technologies, the disadvantages of Pentium base jumper-less design are eliminated. There will be no worry of wrong CPU voltage detection . The CPU frequency selection is set by going into:

Choose "**CPU SPEED SETTING**" from the Main Menu and a screen with a list of items appears.

CPU Speed
Set to Manual user can use the next two items to decide the CPU speed.

CPU Ratio:TO BIOS "CPU Speed setting " item
This item lets you select the ratio of Core/Bus frequency. Have the following selection: 3x, 3.5x, 4x, 4.5x, 5x, 5.5x, 6x, 6.5x, 7. 0x, 7.5x

CPU Freqency :JP1 (CPU Type Selector)
This item lets you set external clock (bus clock). The possible settings are 66,100 and 133 MHZ....

Clearance Requirements

To maintain proper airflow once the processor is installed on the mainboard, the processor and fan heatsink require certain space clearances. The clearance above the processor must be at least 0.3 inch. The clearance on at least 3 of 4 sides of the processor and fan heatsink must be at least 0.2 inch. All cables (for Floppy drive,Hard drive,CD-ROM,and so on) must be routed clear of the processor and its airspace.

Fan Exhaust

The processor must be kept cool by using a processor with heatsink and fan attached . The temperature of the air filled with the fan/ heatsink cannot exceed 45 $^\circ$C(113 $^\circ$F) . The ambient or room temperature must be below 37 $^\circ$C (99 $^\circ$F) .

EXTERNAL CONNECTORS

Both Ribbon cable and Connectors on board are with direction signs to avoid that user insert wrong direction. On other hand, the ribbon cables should always be connected with the red stripe on the pin 1 of side of the connector.
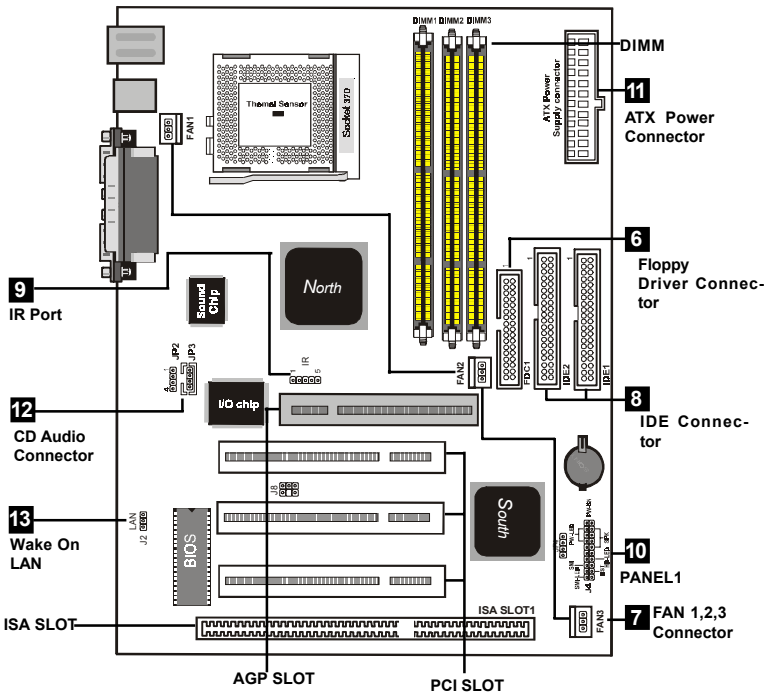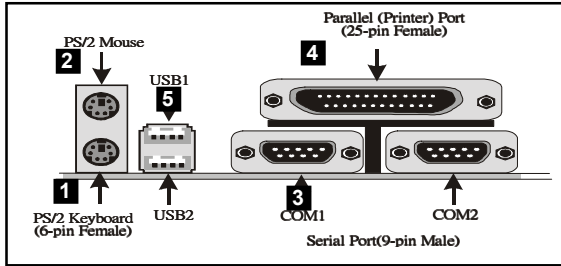
1. **PS/2 Keyboard port**
   This connection is for a standard keyboard using an PS/2 plug (mini DIN) . This connector will not allow standard at AT size (large DIN) keyboard plugs. You may use a DIN to mini DIN adapter on standard AT keyboards.

2. **PS/2 Mouse port**
   This system will direct IRQ12 to PS/2 mouse.

3. **Serial Port COM 1 and COM 2 port**
   The two serial ports can be used for pointing devices or other serial devices. See "Onboard Serial Port" in chipset Feature Setup of the BIOS SOFTWARE.

   NOTE:
   > **Serial {D-type 25pin (F) } must be connected to the serial port.**

4. **Parallel Printer port**
   You can enable the parallel port and choose the IRQ through " Onboard Parallel Port" in Chipset. Feature Setup of the BIOS SOFTWARE.
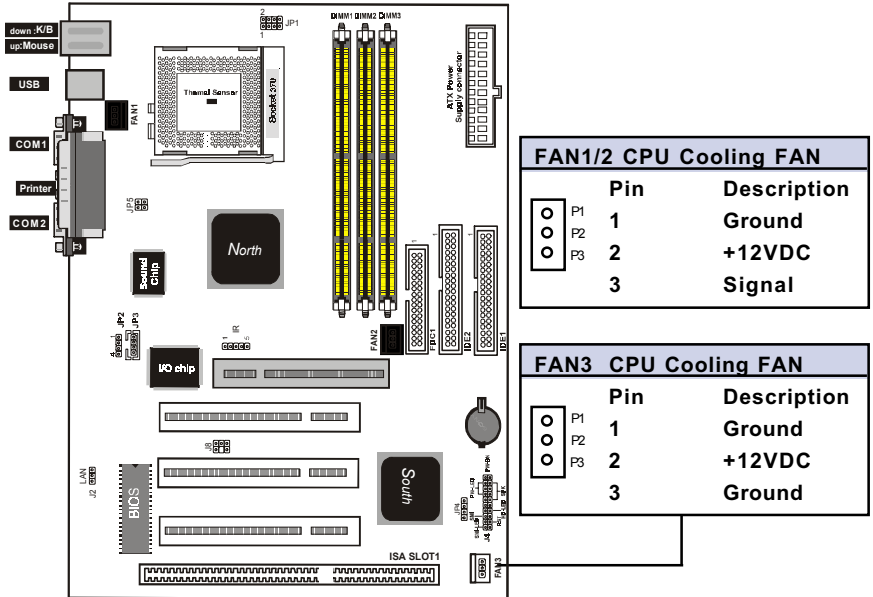
5. **Universal Serial BUS Ports 1 & 2**
   Two USB ports are available for connecting USB devices.

6. **Floppy drive connector**
   This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plus on the other end to the floppy drives.

7. **FAN1 , FAN2 , FAN3 CPU Cooling Fan (FAN/PWR)**

These connectors support cooling fans of 500mAmp (6Watt) or less. Orientate the fans so that the heat sink fins allow airflow to go across the onboard heat sink(s) instead of the expansion slots. Depending on the fan manufacturer, the wiring and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of this connector.

FAN1/2 CPU Cooling FAN

Pin	Description
1	Ground
2	+12VDC
3	Signal

FAN3 CPU Cooling FAN

Pin	Description
1	Ground
2	+12VDC
3	Ground

NOTE :

The "Rotation" signal is to be used only by a specially designed fan with rotation signal.

WARNING :

The CPU and/or motherboard will overheat if there is no air flowing across the CPU and onboard heatsinks. Damage may occur to the motherboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

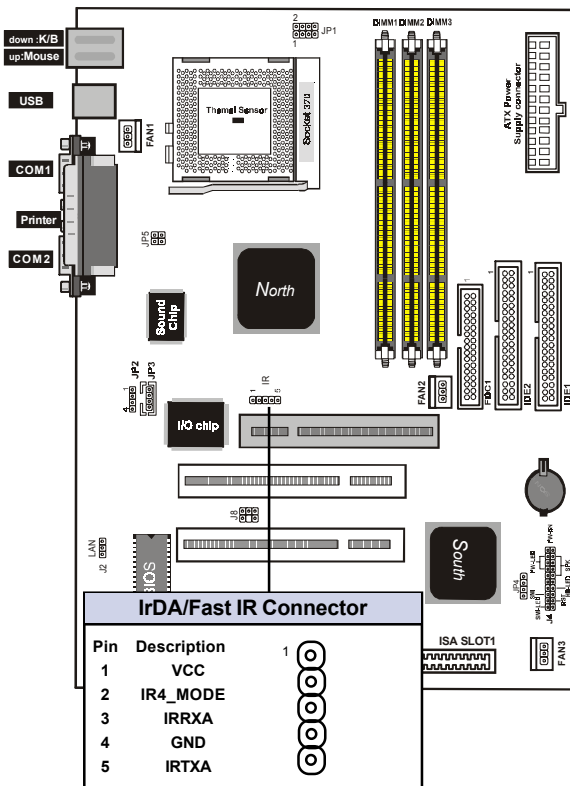8. **Primary / Secondary IDE connectors (Two 40-pin Blocks)**
   These connectors support the provided IDE hard disk ribbon
   cable. After connecting the single end to the board, connect the
   two plugs at the other end to your hard disk no space(s) . If you
   install two hard disks, you must configure the second drive to
   Slave mode by setting its jumper settings. BIOS now supports
   SCSI device or IDE CD-ROM boot up (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).

Note :
**You may configure two hard disks to be both Masters
using one ribbon cable on the primary IDE connector.
You may install one operating system on an IDE drive
and another on a SCSI drive and select right one the
through BIOS Feature Setup.**

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9. **IrDA / Fast IR-Compliant infrared module connector - IR(J1)**

This connector supports the optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system cases that support this feature. You must also configure the setting through UART2 Use Infrared" in Chipset Feature Setup to select whether UART2 is directed for use with COM2 or IrDA. Use the five pins as shown on the Back View and connect a ribbon cable from the module to the motherboard according to the pin definitions.

IrDA/Fast IR Connector

Pin	Description
1	VCC
2	IR4_MODE
3	IRRXA
4	GND
5	IRTXA

10. **J4**

J4 PANEL Connector
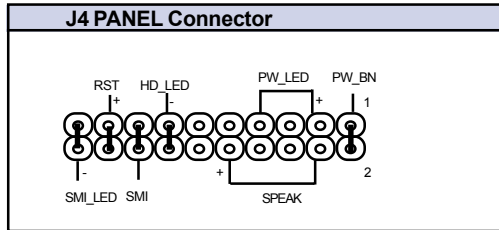
a. **IDE activity LED (HD-LED)**
   This connector supplies power to the cabinet's IDE activity LED.
   Read and write activity by devices connected to the Primary or
   Secondary IDE connectors will cause the LED to light up.

b. **Power LED Lead (PW_LED)**
   The system power LED lights when the system's power is on.

c. **SMI Suspend Switch Lead (SMI)**
   This allows the user to manually place the system into a suspend
   mode or "Green" mode where systematic activity will be in-
   stantly decreased to save electricity and expand the life of cer-
   tain components when the system is not in use. This 2-pin con-
   nector (see the figure below) connects to the case-mounted sus-
   pend 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. It may
   require 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 SOFT-
   WARE section should be on the default setting of Enable

d. **Reset Switch Lead (RST)**
   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.

e. **Speaker Connector (SPEAKER)**
   This 4-pin connector connects to the case-mounted speaker.
f. **ATX Power Switch (PW_BN)**
   The system power is controlled by a momentary switch con-
   nected to this lead. Pushing the button once will switch the sys-
   tem ON. The system power LED lights when the system's power
   is on

11. **ATX Power Supply Connector (20-pin block) - PW1**
    This connector connects to a 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 with-
    out this.**

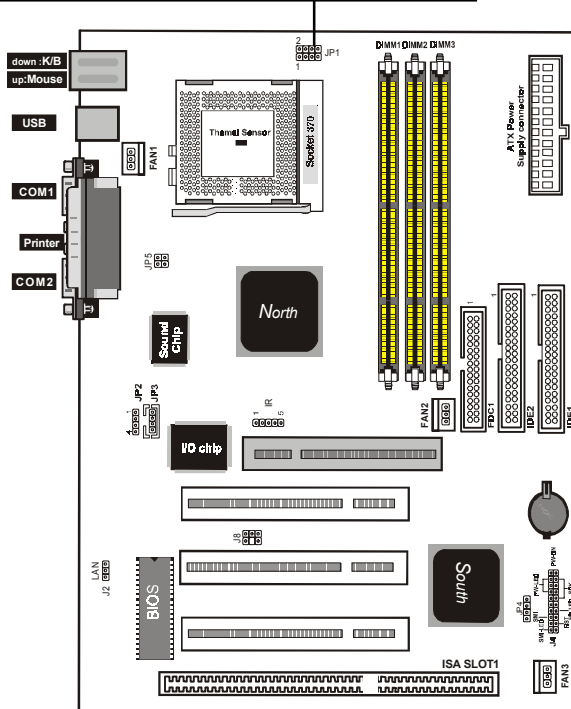| Pin	Description	Pin	Description
1	3.3V	2	3.3V
3	GND	4	5V
5	GND	6	5V
7	GND	8	PW-OK
9	5VSB	10	12V
11	3.3V	12	-12V
13	GND	14	PS-ON
15	GND	16	GND
17	GND	18	-5V
19	5V	20	5V

12. **Wake Up On LAN : J2**

This connector connects LAN cards and a Wake On LAN output. When the system is in soft-off mode LAN activity will power on the system.

Wake-On-LAN Connector

Pin	Description
1	5VSB
2	GND
3	SENSOR
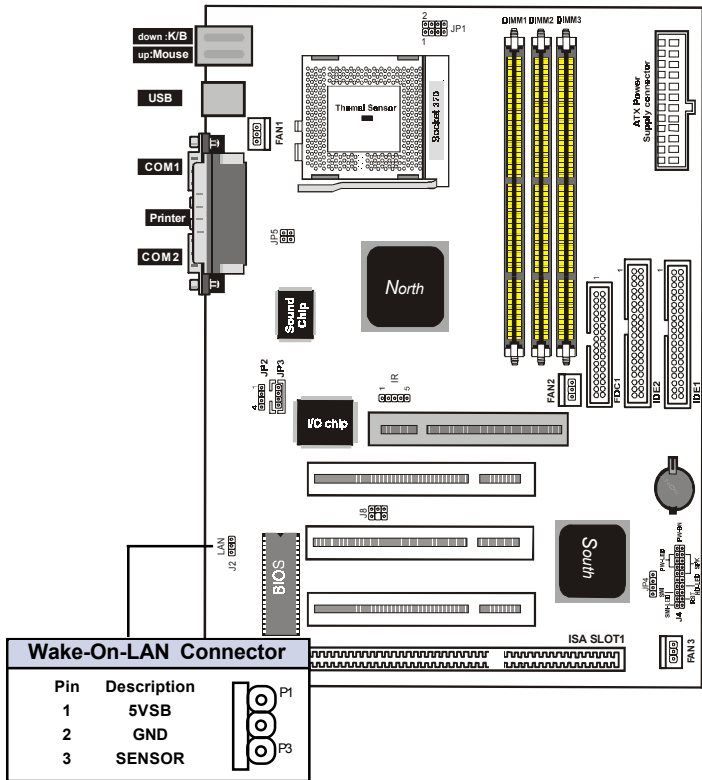
13. CPU Type Selector jumper : JP1

CPU Type Selecto	JP1				
66 MHZ	1-2	3-4	5-6	7-8	ON
100MHZ	1-2	3-4	7-8		ON
133MHZ	1-2	3-4			ON

Date :   /   /

Guarantee Sheet/Technical Fault Report

M/B Model No.:_____   Vender

Serial No.   :_____

Date of Purchasing:
_____

Hardware Configuration Used :

CPU	
RAM	
Video Card	
Hard Drive	
Other Card	

Diagnostic Software Used :

Fault Description :

Technical Support :

WWW   :   www.acorp.com.tw

FAE   :   fae@acorp.com.tw