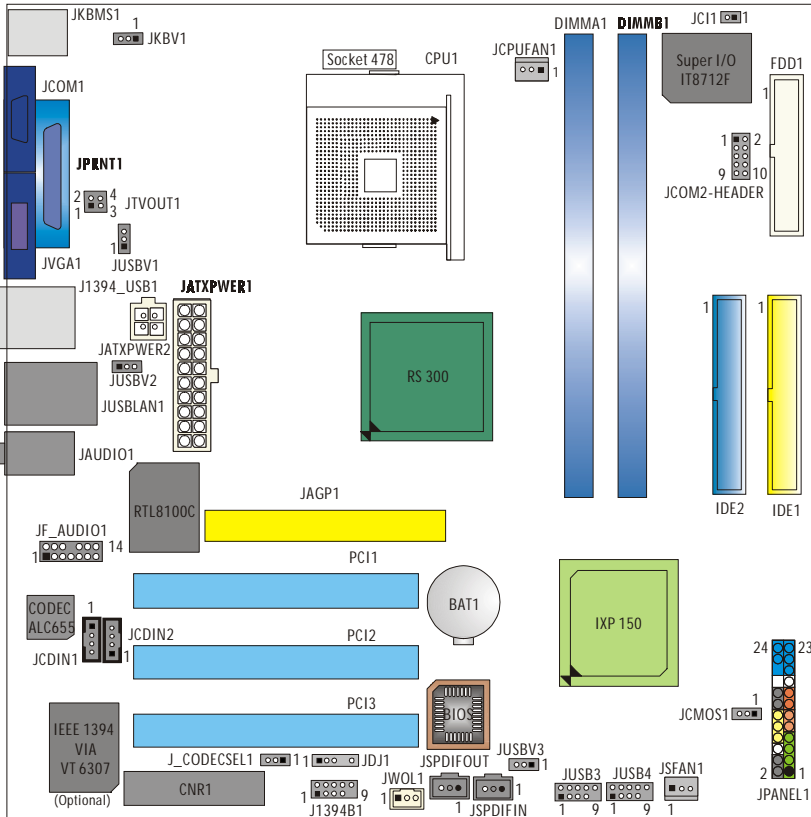# Section 1. Layout of P4ARA-M

NOTE: "●" represents the first pin.

Section 6. Installation and Setup

In this section, you will learn how to install the CPU, DDR Module, and also how to set up jumpers and all the information about the components on the motherboard. Not only can you find the installation steps, but also the details and locations of the components on the motherboard.

1. CPU Installation

The motherboard supports the Intel Pentium® Socket-478 processor. When you are installing the CPU, make sure the CPU has a cooling fan attached on the right to prevent overheating. If you do not find the cooling fan, contact your dealer and make sure to install them before turning on the computer.

Step1: Pull the lever sideways away from the socket and then raise the lever up to a 90-degree angle.

Step2: Look for the white dot/cut edge. The white dot/cut edge should point towards the lever pivot. The CPU will fit only in the correct orientation.

**Step3:** Hold the CPU down firmly, and then close the lever.

Step4: Put the CPU fan on the CPU and buckle it. Connect the CPU fan power cable to the JCFAN1. This completes the installation.

2 Central Processing Unit: CPU

These fan headers support cooling fans built in the computer. Orient the fans to make the heat sink fins to allow air flow to go across the onboard heat sinks instead of the expansion slots. The fan wiring and plug may be different according to the fan manufacturer. Connect the fan cable to the connector while matching the black wire to the ground pin.
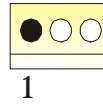
(1) CPU Fan Headers: JCPUFAN1
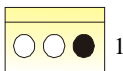
Pin	Assignment
1	Ground
2	+12V
3	FAN RPM Rate Sense

(2) System Fan Headers: JSFAN1 (Optional)

Pin	Assignment
1	Ground
2	+12V
3	FAN RPM Rate Sense

1

3. Installing DDR Module

1. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.

2. Insert the DIMM firmly and vertically into the slot until the retaining chip snap back in place and the Dimm is properly seated.
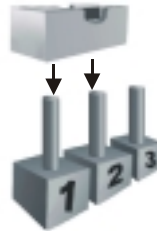
4. How to set up Jumpers?

The illustration shows how to set up jumpers. When the Jumper cap is placed on pins, the jumper is "close". If no jumper cap is placed on the pins, the jumper is "open". The illustration shows a 3-pin jumper whose pin1 and 2 are "close" when jumper cap is placed on these 2 pins.

Jumper open   Jumper close   Pin1-2 close

5. Jumpers, Headers, Connectors & Slots:

(1) Floppy Disk Connector: FDD1

The motherboard provides a standard floppy disk connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.

(2) Hard Disk Connectors: IDE1/ IDE2

The motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA 33/ 66/ 100 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary).

The IDE connectors can connect a master and a slave drive, so you can connect up to four hard disk drives. The first hard drive should always be connected to IDE1.

(3) Peripheral Component Interconnect Slots: PCI1-3

This motherboard is equipped with 3 standard PCI slots. PCI stands for Peripheral Component Interconnect, and it is a bus standard for expansion cards. This PCI slot is designed as 32 bits.

(4) Accelerated Graphics Port Slot: JAGP1

Your monitor will attach directly to that video card. This motherboard supports video cards for PCI slots, but it is also equipped with an Accelerated Graphics Port (AGP). An AGP card will take advantage of AGP technology to improve video efficiency and performance, especially with 3D graphics.

(5) Communication Network Riser Slot: CNR1 (Optional)

The CNR specification is an open Industry Standard Architecture, and it defines a hardware scalable riser card interface, which supports modem only.

(6) Clear CMOS Jumper: JCMOS1

This jumper helps you to clear the Real Time Clock (RTC) Ram in CMOS. You can erase the CMOS RTC Ram data to clear the CMOS memory of date, time, and system setup parameters.

| JCMOS1	Assignment	
Pin 1-2 Close	Normal Operation (default)	1
Pin 2-3 Close	Clear CMOS Data	1

* Clear CMOS Procedures:

1. Remove AC power line.

2. Set the jumper to "Pin 2-3 Close".

3. Wait for five seconds.

4. Set the jumper to "Pin 1-2 Close".

5. Power on the AC.

6. Reset your desired password or clear the CMOS data.

(7) Front USB Header: JUSB3/ JUSB4

The motherboard provides two USB 2.0 Pin Header. USB 2.0 technology increases Data transfer rate up to a maximum throughput of 480 Mbps, which is 40 times faster than USB 1.1, and is ideal for connecting high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modems, etc.

Pin	Assignment	Pin	Assignment
1	+5V(fused)	2	+5V(fused)
3	USBP-0	4	USBP-1
5	USBP+0	6	USBP+1
7	Ground	8	Ground
9	KEY	10	NC
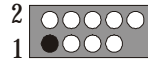
(8) Power Source Selection for USB: JUSBV1/JUSBV2/JUSBV3

JUSBV1/JUSBV2 JUSBV3	Assignment	Description
Pin 1-2 close	+5V	JUSBV1: 5V for USB at the J1394_USB1 port connector. JUSBV2: 5V for USB at the JUSBLAN1port connector. JUSBV3: 5V for USB at the JUSB3/ JUSB4 port connectors.
Pin 2-3 close	+5V Standby Voltage	JUSBV1: J1394_USB1 port is powered with standby voltage of 5V. JUSBV2: JUSBLAN1 port is powered with standby voltage of 5V. JUSBV3: JUSB3/JUSB4 port is powered with standby voltage of 5V.

Note: In order to support the function "Power-on the system via USB devices function," " JUSBV1/JUSBV2/ JUSBV3" jumper cap should be placed on pin 2-3 respectively.

(9) Wake On LAN Header: JWOL1

This connector allows you to connect to a LAN card with Wake On LAN function. You can wake up the computer by remote control through a local area network.

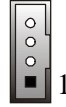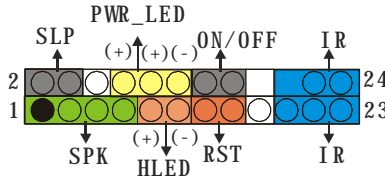| Pin	Assignment
1	+3.3V Standby Voltage
2	Ground
3	Wake up

JWOL1

(10) CD-ROM Audio-In Header: JCDIN1/JCDIN2

This header allows you to receive stereo audio input from sound sources, such as CD-ROM, TV Tuner, MPEG card, etc.

Pin	Assignment
1	Left Channel Input
2	Ground
3	Ground
4	Right Channel Input

(11) Front Panel Connector: JPANEL1

The connector is for electrical connection to the front panel switches and LEDs.

Pin	Assignment	Function	Pin	Assignment	Function
1	+5V	Speaker	2	Sleep Control	SleepButton
3	NA	Connector	4	Ground	
5	NA		6	NA	NA
7	Speaker		8	Power LED (+)	POWER LED
9	HDD LED (+)	Hard DriveLED	10	Power LED (+)	
11	HDD LED (-)		12	Power LED (-)	
13	Ground	Reset Button	14	Power Button	Power-on Button
15	Reset Control		16	Ground	
17	NA		18	KEY	
19	NA	IrDA	20	KEY	IrDA
21	+5V	Connector	22	Ground	Connector
23	IRTX		24	IRRX	

(12) Power Source Selection for Keyboard/Mouse: JKBV1

| JKBV1	Assignment	Description
Pin 1-2 close	+5V	5V for keyboard and mouse
Pin 2-3 close	+5V_SB	PS/2 Mouse and PS/2 Keyboard are powered with +5V standby voltage.

Note: In order to support the function "power-on the system via keyboard and mouse function, " "JKBV1" jumper cap should be placed on pin 2-3.

(13) Power Connectors: JATXPWER1/ JATXPWER2

The motherboard supports ATX power supply for the power system. Before installing the power supply connector, please make sure that all components are installed properly.

PIN	Assignment	PIN	Assignment
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PS_ON
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	PW_OK	18	-5V
9	+5V_SB	19	+5V
10	+12V	20	+5V
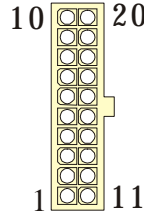
PIN	Assignment	PIN	Assignment
1	+12V	3	Ground
2	+12V	4	Ground
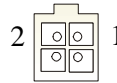
(14) Front 1394 Header: J1394B1 (Optional)

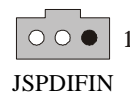| Pin	Assignment	Pin	Assignment
1	A1+	2	A1-
3	Ground	4	Ground
5	B1+	6	B1-
7	+12V	8	+12V
9	KEY	10	Ground
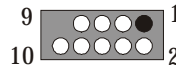
(15) Digital Audio Connector: JSPDIFOUT/JSPDIFIN (Optional)

The connector is used to connect SPDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.
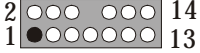
Pin	Assignment
1	+5V
2	SPDIF_OUT
3	Ground

JSPDIFOUT
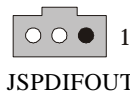
Pin	Assignment
1	+5V
2	SPDIF_IN
3	Ground

JSPDIFIN

(16) Front Panel Audio Header: JF_AUDIO1
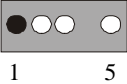
The connector allows you to connect to the front panel audio.

Pin	Assignment	Pin	Assignment
1	Mic In/Center	2	Ground
3	Mic Power/Bass	4	Audio Power
5	RT Line Out/Speaker Out Right	6	RT Line Out/ Speaker Out Right
7	Reserved	8	Key
9	LFT Line Out/Speaker Out Left	10	LFT Line Out/ Speaker Out Left
11	RT Line In/Rear Speaker Right	12	RT Line In/Rear Speaker Right
13	LFT Line In/Rear Speaker Left	14	LFT Line In/ Rear Speaker Left

(17) AUDIO DJ Connector: JDJ1

Pin	Assignment	Pin	Assignment
1	SMBDATA	2	SMBCLK
3	INT_B	4	KEY
5	ATX_PWROK		
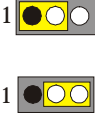
(18) TV Out Header: JTVOUT1

Pin	Assignment	Pin	Assignment
1	TV_Y	2	Ground
3	COMP	4	TV_C

(19) CNR Onboard Selection: J_CODECSEL1

J_CODECSEL1	Assignment
Pin 1-2 close	On-board Codec is used (default).
Pin 2-3 close	CNR Codec is used.

(20) Case Open Connector: JCI1

Pin	Assignment
1	Case Open Signal
2	Ground

(21) COM2 Header: JCOM2-Header

Pin	Assignment	Pin	Assignment
1	RIN1	2	RIN3
3	DOUT2	4	DOUT3
5	Ground	6	RIN2
7	DOUT1	8	RIN4
9	-XRI1	10	NA

(22) Back Panel Connectors

11/04/2003