

ICDT-IB2

Intel® Atom D2550/N2800/N2600 Mini-ITX Motherboard

User's Manual

Ver. 1.0

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Safety Information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.



The symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

Safety Declaration

This device complies with the requirements in Part 15 of the FCC rules. Operation is subject to the following two conditions:

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

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This manual contains the following parts:

- **Chapter 1: Product introduction**
This chapter describes the features of the motherboard and the new technology it supports. This chapter also lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard.
- **Chapter 2: BIOS setup**
This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance. Visit the Advansus Taiwan website:

<http://www.advansus.com.tw>

2. Optional documentation

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.



CAUTION: Information to prevent damage to the components when trying to complete a task.



IMPORTANT: Instructions that you **MUST** follow to complete a task.



NOTE: Tips and additional information to help you complete a task.

Typography

Bold text

Indicates a menu or an item to select

Italics

Used to emphasize a word or a phrase

<Key>

Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key

Example: <Enter> means that you must press the Enter or Return key

<Key1>+<Key2>+<Key3>

If you must press two or more keys simultaneously, the key names are linked with a plus sign (+)

Example: <Ctrl>+<Alt>+<D>

Command

Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets

Example: At the DOS prompt, type the command line:

afudos /i[filename]

afudos /iP5P800VM.ROM

Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x ICDT-IB2 Mini-ITX Main board
- 1 x CD-ROM contains OS drivers
- 2 x SATA cable
- 1 x I/O Shield
- 1 x Startup Manual



If any of the above items is damaged or missing, please contact your retailer.

Revision History

Revision	Revision History	Date
V 1.0	First release version for PCB R10	May , 2012

Specifications Summary

Specifications	
System	
CPU	Onboard Intel Atom D2550 1.86GHz/ N2800 1.86GHz/ N2600 1.6GHz dual-core Processor
FSB	- D2550 : x 4 DMI - N2800/ N2600 : x 2 DMI
BIOS	AMI 16Mb SPI
System Chipset	Intel NM10
I/O Chipset	Winbond 83627DHG
Memory	- D2550/ N2800 : Two 204-pin SODIMM sockets supports up to 4GB single channel DDR3 1066/ 800MHz SDRAM - N2600 : One 204-pin SODIMM socket supports up to 2GB single channel DDR3 800MHz SDRAM
Watchdog Timer	Reset : 1 to 255 sec/min per step
H/W Status Monitor	Monitoring temperature, voltage and cooling fan status. Auto throttling control when CPU overheats.
Expansion Slots	1 PCI-E x 1, 1 Mini PCI-E, 1 CF
Power State	S1, S3, S4, S5
TPM	Yes, by TPM Header (2 x 10-pin)
Wake up on LAN or Ring	LAN (WOL, PXE)
Smart Fan Control	Yes
Display	
Chipset	- D2550/ N2800 : Intel GMA HD 3650 - N2600 : Intel GMA HD 3600
Dual Display	LVDS+VGA, VGA+DVI, DVI+LVDS
VGA	VGA resolution : 1920 x 1200 FOR D2000 CPU VGA resolution : 1920 x 1080 FOR N2000 CPU
DVI	DVI resolution : 1920 x 1200 FOR D2000 CPU), DVI resolution : 1920 x 1080 FOR N2000 CPU)
LVDS1	- D2550 : Onboard single channel 18/ 24-bit LVDS, supports max resolution 1440 x 900 - N2800/ N2600 : Onboard single channel 18-bit LVDS, supports max resolution 1366 x 768
LVDS2	- D2550 : Onboard Chronitel CH7511B, supports dual channel 24-bit LVDS, max resolution 1920 x 1080

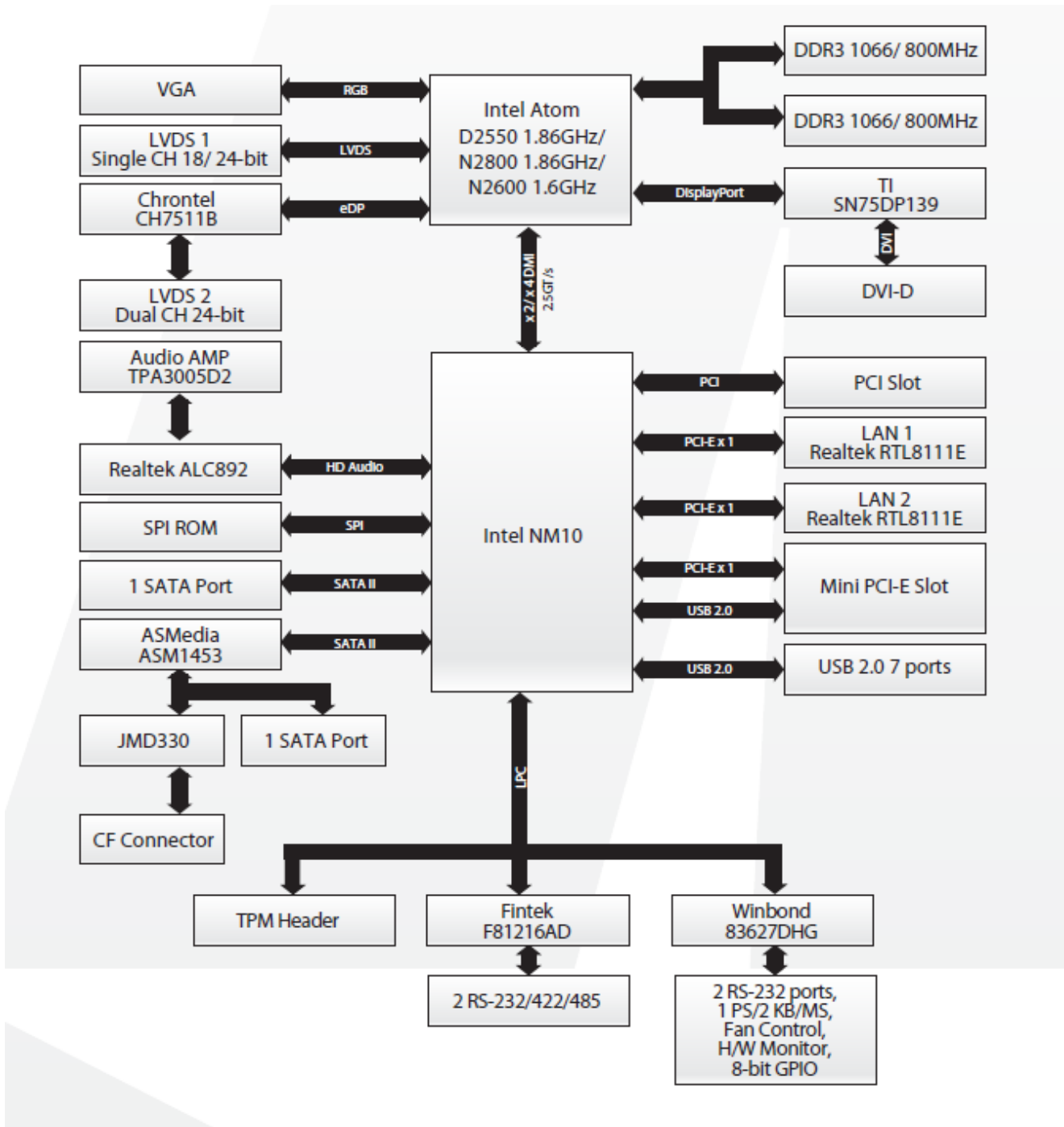
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	- N2800/ N2600 : Onboard Chrontel CH7511B supports dual channel 24-bit LVDS, max resolution 1366 x 768
LVDS Backlight	Yes, through internal LVDS Backlight Connector
Audio	
Audio Codec	Realtek ALC892, 5.1 Channel HD Audio
Audio Interface	Line-in, Line-out, Mic-in, Front Audio Header
Audio Amplifier(W)	3W + 3W, TPA3005D2 Stereo
Ethernet	
LAN	2 Realtek RTL8111E Gigabit LAN
I/O	
MIO	2 COM RS-232/ 422/ 485 with Power (5V/ 12V), 2 COM RS-232 with Power (5V/ 12V), 2 SATA II, 1 DVI, 1 VGA, 2 LVDS, 1 LVDS Backlight, 2 LAN, 1 CF Card, 1 PS/2 Keyboard/ Mouse Header
USB	7 USB 2.0 (4 Rear, 3 Internal)
Back Panel I/O Port	
Back Panel I/O Port	1 DC-in Connector (4-pin) 1 VGA Port 1 DVI Port 2 COM RS-232 Ports 4 USB 2.0/ 1.1 Ports 2 LAN RJ45 Ports 1 Audio I/O (3 Jacks)
Internal I/O Connector	
Internal I/O Connector	1 USB Connector supports 2 USB Ports 1 USB Connector supports 1 USB Port 2 COM RS-232/ 422/ 485 Connectors 2 SATA II Connectors 2 SATA Power Connectors 1 Front Panel Connector 1 Front Audio Connector 1 CPU Fan Connector 1 System Fan Connector 1 TPM Header 1 S/PDIF Out Connector 1 GPIO Connector 1 Mini PCI-E Connector 1 CF Connector

	1 Keyboard/ Mouse Header 2 LVDS Connectors 1 LVDS Backlight Connector 1 AMP Connector
Power	
Power Requirement	+12V (5A) or 19V (3A)
Power Type	12V/ 19V DC-in
Power Connector	1 4-pin DC-in Power Connector, 1 4-pin ATX 12V Power Connector
Mechanical & Environmental Internal	
Operating Temperature	0°C to 60°C (32°F to 140°F)
Operating Humidity	0% to 90% relative humidity, non-condensing
Size	6.69" x 6.69" (170 x 170 mm)
Weight	0.77 lbs (0.35 Kg)

* Specifications are subject to change without notice.

Block Diagram



This chapter describes the motherboard features and the new technologies it supports.

1 Product Introduction

1.1 Product highlights

1.1.1 Product Overview

ICDT-IB2 is designed to unleash the power of the new Intel® Atom™ processor D2000 / N2000 which supports the new revolutionary two-chip layout. The Intel® NM10 Express Chipset also provides additional flexibility and upgradeability with two slots of single channel DDR3 memory at 1066 MHz supporting up to 4GB maximum.

With breakthrough low-power silicon, ICDT-IB2 can be used with a passive thermal solution based on the recommended boundary conditions.¹

ICDT-IB2 represents a fundamental shift in system design—small, yet powerful enough to enable a big Internet experience for all audiences.

1.1.2 Platform Features and Benefits

- Integrated CHRONTEL CH7511B supports dual channel 24-bit LVDS resolution and enables excellent graphics performance in power and cost sensitive embedded applications
- DirectX® 10.1 let you enjoy awesome graphics performance, stunning 3D visual effect and dynamic interactivity
- Memory support, integrated low voltage DDR3 memory controller
- Operating system support:
 - Microsoft Windows XP 32/64bit
 - Microsoft Windows 7 32/64bit
 -

1.1.3 Key Architecture Features

- Supports Intel® Atom™ processor D2000 / N2000.
 - Supports the 1066MHz front side bus
 - 2 Cores, 1MB LLC
 - Compatible with high speed DDR3-1066MHz
 - TDP: 16W
- Intel® HD Audio Technology
- Intel® HT, EM64T, XD
- Integrated Display Interfaces
 - DVI-D
 - Analog VGA
 - 2Channel LVDS
- Doubles the transfer speed of SATA, running at speed up to 3.0Gb/s
- Provides 10/100/1000 Mbps solution to your network or broadband connection without

having to buy an

- Onboard 6-channel audio CODEC supports uncompromising DVD audio quality, bringing a move vivid sound experience and high-quality 6-channel audio without having to buy advanced sound cards.
- USB2.0 is the latest connectivity standard which delivers transfer speeds up to 480Mb/s for easy connectivity and ultra-fast data transfers.
- I/O
 - One PCI slot
 - One Mini-PCIe socket
 - Two SATA ports
 - Two 10/100/1000 Mbps Ethernet Media Access Controller
 - High Definition Audio
 - USB: Gen 2.0, up to 7 ports
 - Hardware Monitor
 - Fan control (Voltage, Temp)

1.2 Before you Proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.



- Unplug the power cord from the wall socket before touching any component.
- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded anti-static pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

1.3 Motherboard Overview

Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it. Refer to the chassis documentation before installing the motherboard.



Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components.

1.3.1 Placement Direction

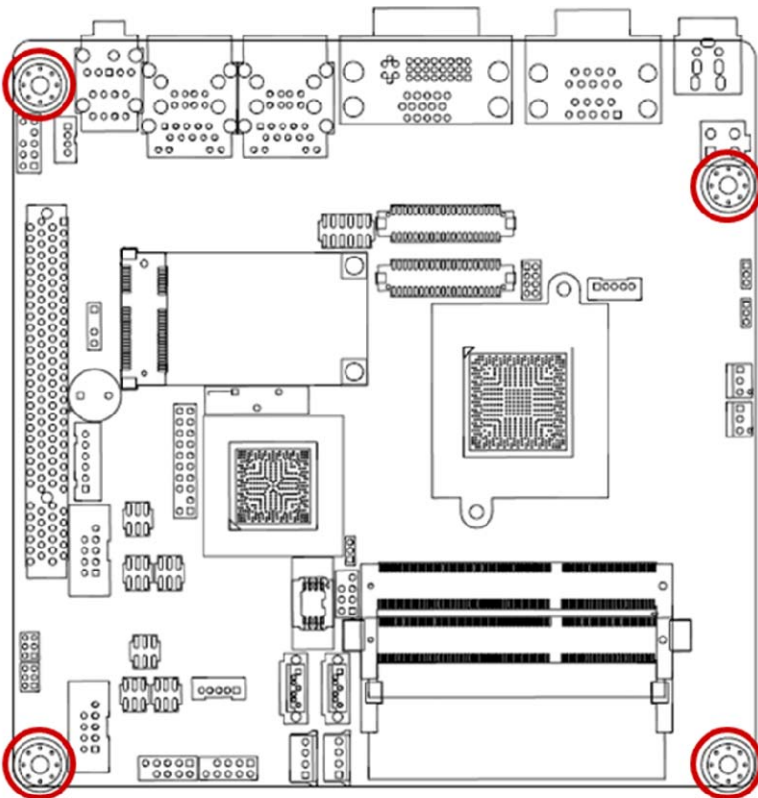
When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

1.3.2 Screw Holes

Place eight (8) screws into the holes indicated by circles to secure the motherboard to the chassis.

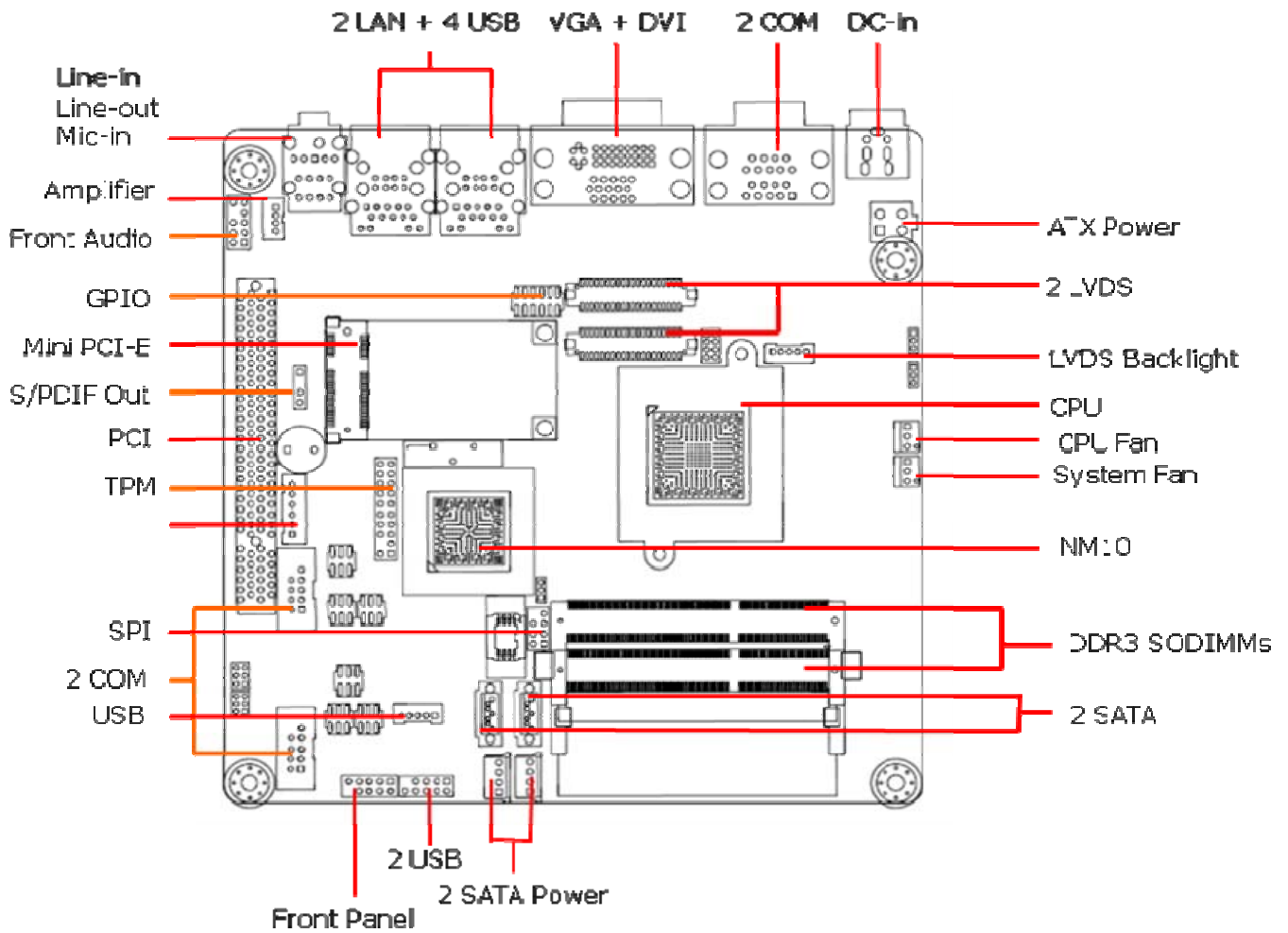


Do not over tighten the screws! Doing so can damage the motherboard.



Place this side towards the rear of the chassis.

1.3.3 Motherboard Layout



1.3.4 Layout Content List

Slots & socket			
Label	Function	Note	Page
CPU	Onboard CPU	CPU	19
SODIMM_1	SODIMM_1	SODIMM_1	20
SODIMM_2	SODIMM_2	SODIMM_2	20
PCI	PCI	PCI	23
MINI_CARD1	Mini-PCI	Mini-PCI	24
CF1	CF	CF	24
Jumpers			
Label	Function	Note	Page
JCMOS1	JCMOS1	JCMOS1	25
JP1~JP6	RS232/422/485 Mode select	JP1~JP6	26
JCOMPWR3/4	RI/+5V/+12V Select	JCOMPWR3/4	27
JLVDS_BKL1	LVDS backlight control mode	JLVDS_BKL1	27
JLVDS_P1	LVDS backlight Voltage select	JLVDS_P1	28

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JDS6	Power Control mode select	JDS6	28
JSATA_SEL1	SATA Port2 function select	JSATA_SEL1	28
JDS5	System deep S5 Power Saving Control	JDS5	28

Rear Panel Connector			
Label	Function	Note	Page
COM1, COM2	Serial Connector	COM3, COM4	29
VGA1	VGA Port	D-sub 15-pin, female	29
DC1	19V DC IN	DC1	29
DVI	DVI-D Port	DVI	29
LAN1_USB23	RJ-45 Ethernet Connector x 1 USB 2.0 Connector x 2		29
LAN2_USB01	RJ-45 Ethernet Connector x 1 USB 2.0 Connector x 2		29
Audio1	Audio Line-In , Line-Out , Mic.-In	5.1 Channel Audio I/O (3 jacks)	29

1.3.5 Internal Connector

Internal Connector			
Label	Function	Note	Page
CPU_FAN1	CPU Fan Connector	3 x 1 wafer, pitch 2.54mm	29
SYS_FAN1	System Fan Connector	3 x 1 wafer, pitch 2.54mm	29
F_PANEL	Intel Front Panel connector	5 x 2 header, pitch 2.54mm	30
ATXPOWER	ATX power connectors	2 x 2 pin power connector	30
COM3, COM4	COM 3/4 Serial Port Connector	5 x 2 box header, pitch 2.54mm	31
AAFP1	Audio Mic.-In & Line-Out Connector	5 x 2 header, pitch 2.54mm	32
SPDIF_OUT1	Digital Audio connector	4 x 1 header, pitch 2.54mm	32
TPM1	TPM Connector	10 x 2 header, pitch 2.54mm	33
SATA1 SATA2	SATA Data Connector * 2	7P Male connector	33
USB45 USB6	USB Connector * 2	5 x 2 header, pitch 2.54mm 5 x 1 box header, pitch 2.0mm	34
KB1	Keyboard and Mouse	6 x 1 header, pitch 2,54mm	34
JLVDS1 JLVDS2	LVDS Connector * 2	20 x 2 header, pitch 1,25mm	35

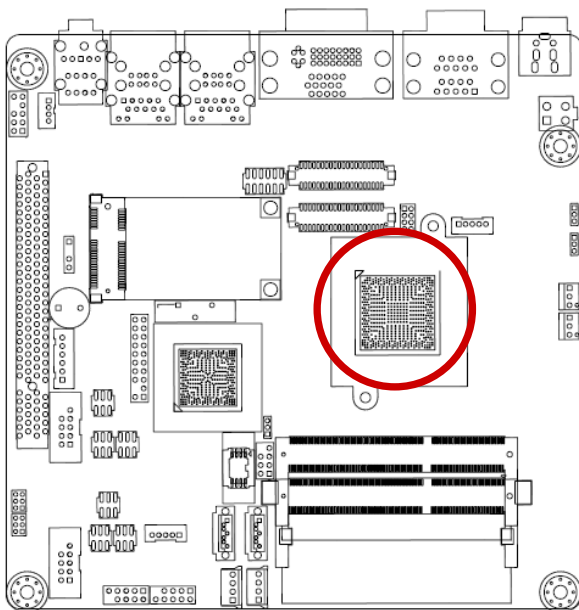
JBKL1	LVDS Backlight Connector	5 x 1 header, pitch 2.0mm	36
JDIO1	GPIO Connector	6 x 2 header, pitch 2.0mm	36
SATAPW1	SATA Power Connector * 2	4 x 1 header, pitch 2.54mm	36
SATAPW2			

1.4 Central Processing Unit (CPU)

The motherboard comes with onboard Intel® Atom D2550 DC 1.8Ghz Processor or N2600 / N2800

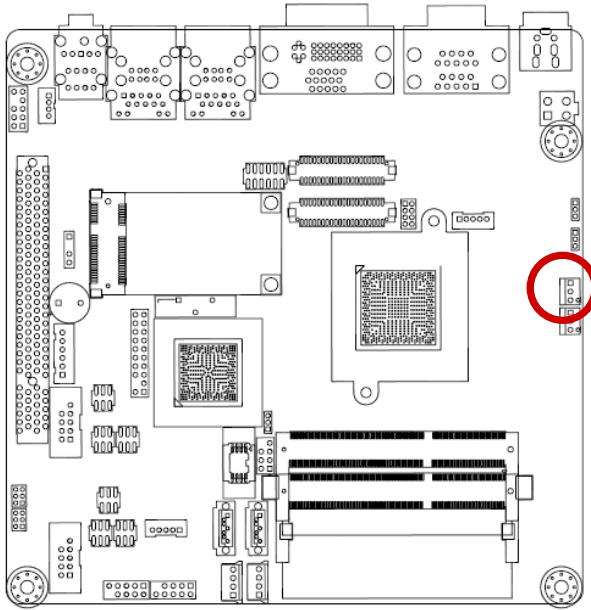
1.4.1 CPU location

1. Locate the CPU on the motherboard.

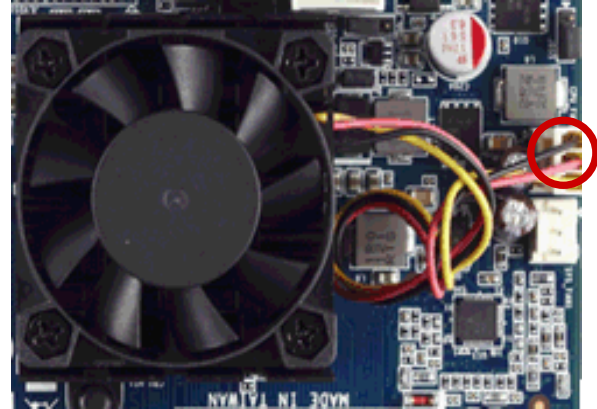
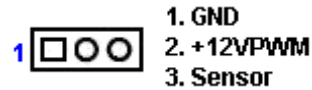


1.4.2 The CPU Heatsink and Fan

Intel® Atom D525 DC 1.8Ghz Processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.



CPU FAN



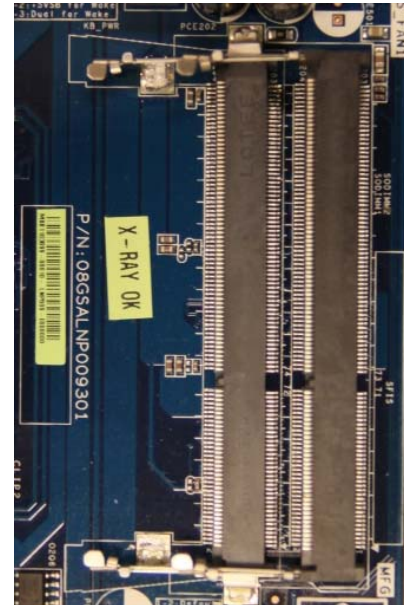
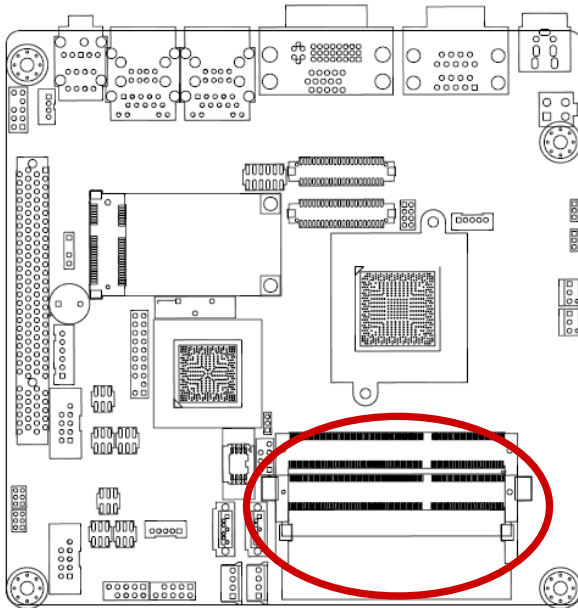
Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors.

1.5 System Memory

1.5.1 Overview

The motherboard comes with four 204-pin Double Data Rate 3 (DDR3) SO Dual Inline Memory Modules (DIMM) sockets.

A DDR3 module has the same physical dimensions as a DDR SODIMM but has a 204-pin footprint compared to the 204-pin DDR2 SODIMM. DDR3 SODIMMs are notched differently to prevent installation on a DDR2 SODIMM socket. The following figure illustrates the location of the sockets:



204-Pin DDR3 SODIMM sockets

Channel	Socket
Single Channel	SODIMM_1
	SODIMM_2

1.5.2 Memory Configurations

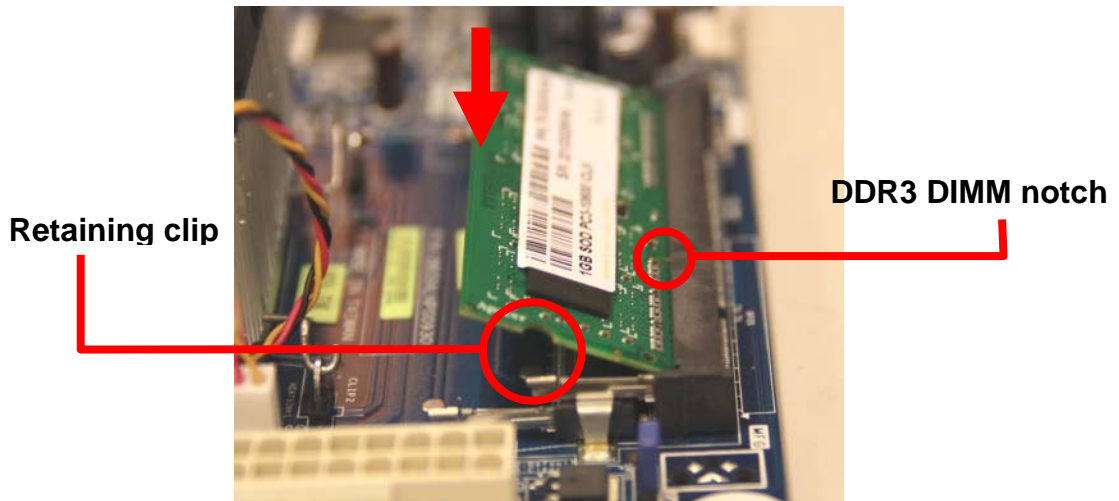
You may install 1 GB and 2 GB unbuffered ECC or non-ECC DDR3 SODIMMs into the SODIMM sockets using the memory configurations in this section.



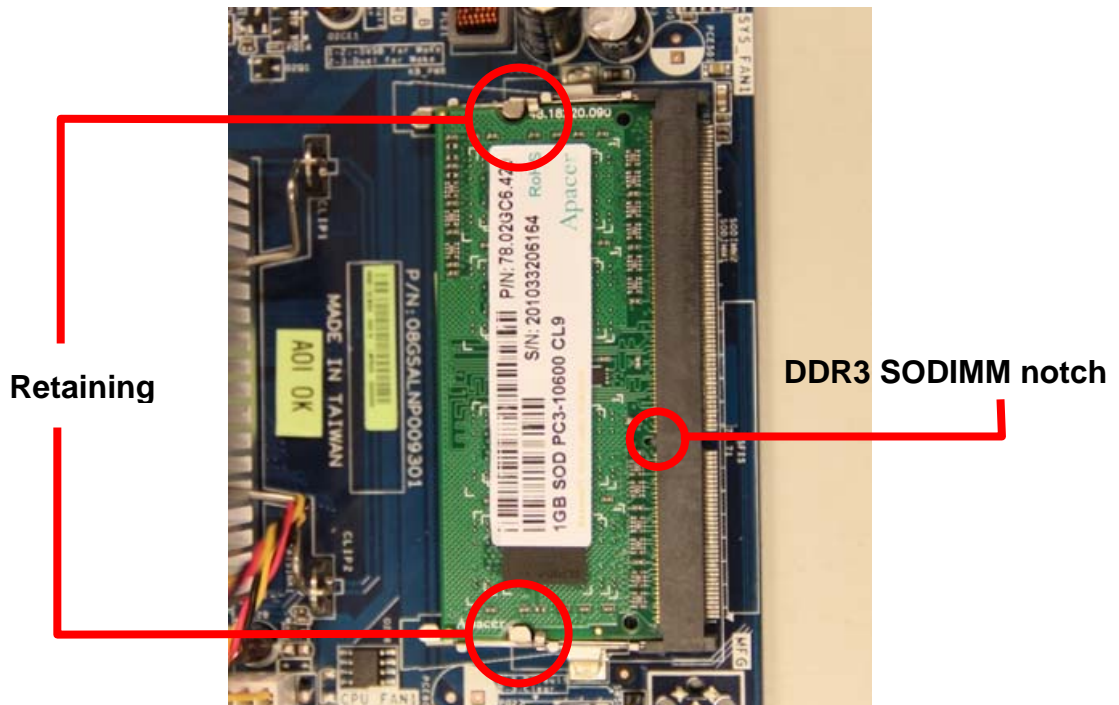
- IF you installed two 2GB memory modules, the system may detect less than 3GB of total memory because of address space allocation for other critical functions. This limitation applies to Windows XP 32-bit version operating system since it does not support PAE (Physical Address Extension) mode.
- IF you install Windows XP 32-bit version operating system, we recommend that you install less than 3GB of total memory.

1.5.3 Installing a DIMM

1. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.



2. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



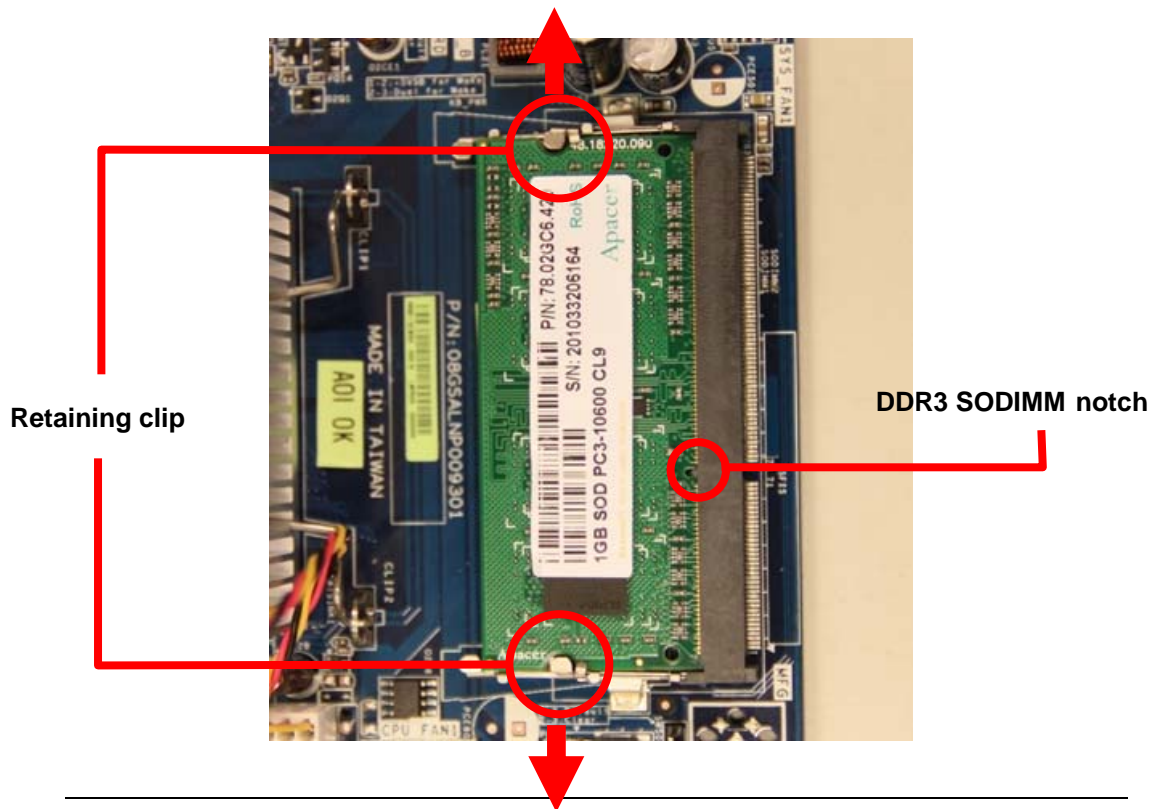
- A DDR3 SODIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the SODIMM.
- The DDR3 SODIMM sockets do not support DDR2 SODIMMs. DO NOT install DDR2 SODIMMs to the DDR3 SODIMM socket.



Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1.5.4 Removing a DIMM

1. Simultaneously press the retaining clips downward to unlock the DIMM.
2. Remove the SODIMM from the socket.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

1.6 Expansion Card

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.



Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

1.6.1 Installing an Expansion Card

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

1.6.2 Configuring an Expansion Card

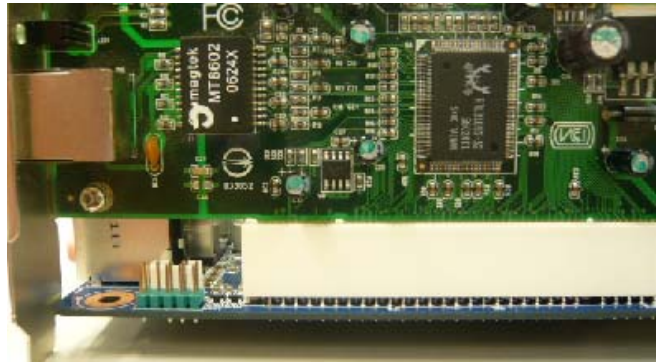
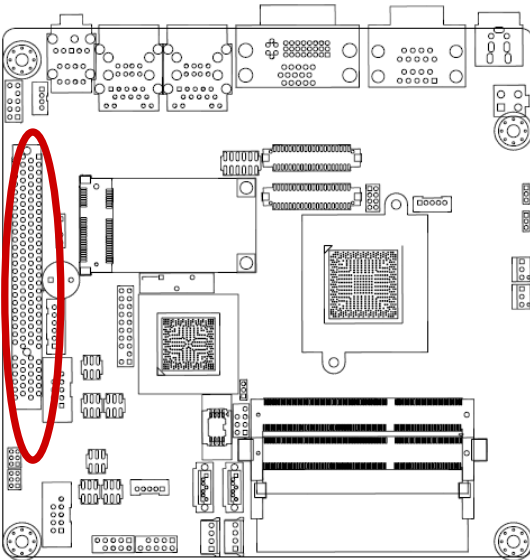
After installing the expansion card, configure it by adjusting the software settings.

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1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup.
2. Assign an IRQ to the card if needed. Refer to the tables on the next page.
3. Install the software drivers for the expansion card.

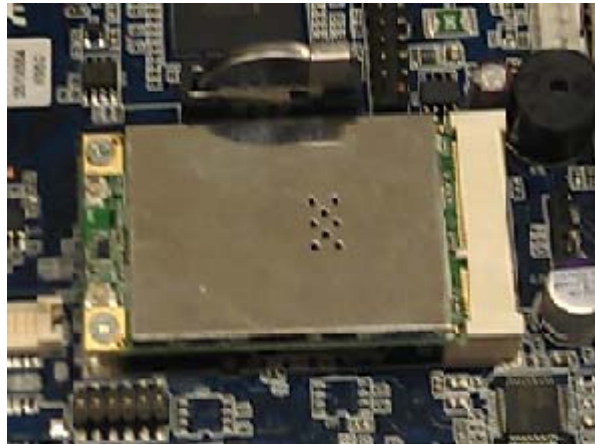
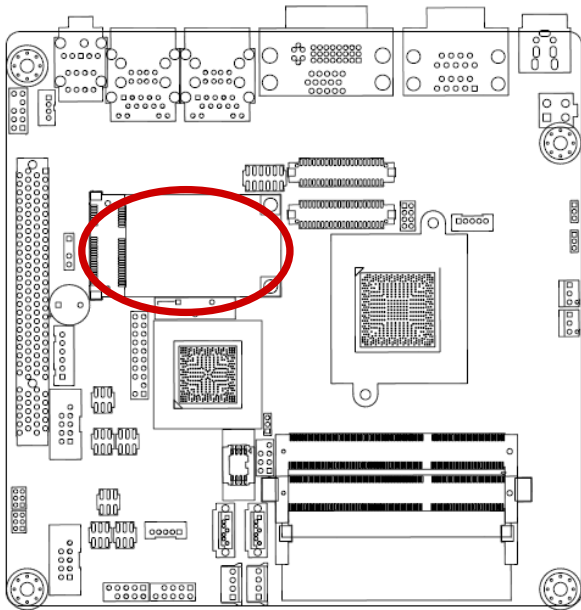
1.6.3 PCI slot

This motherboard supports one PCI slot that complies with the PCI specifications. The following figure shows a Capture card installed on the PCI slot.



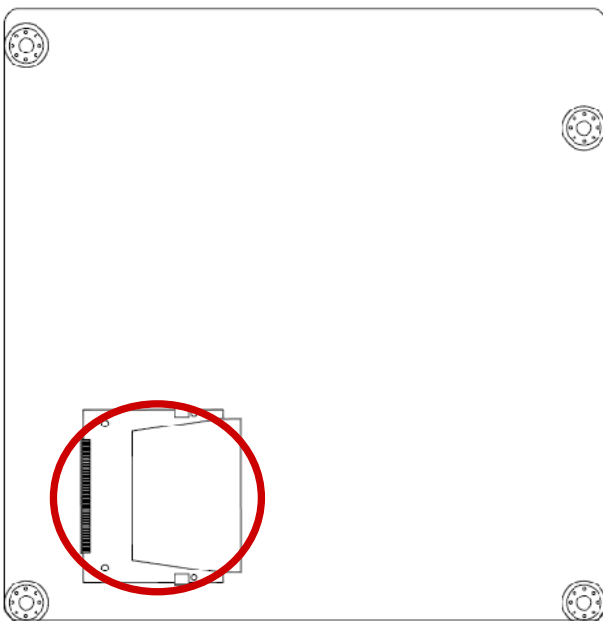
1.6.4 Mini-PCI socket

This motherboard supports one Mini PCI socket that complies with the Mini PCI specifications. The following figure shows a Capture card installed on the Mini PCI socket.



1.6.4 CF Card

This motherboard supports one CF Card connector and its location is on button side of MB. The following figure shows a CF Card installed on the CF Card connector



1.7 Jumpers

1.7.1 Clear CMOS (CMOS1)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which includes system setup information such as system passwords.

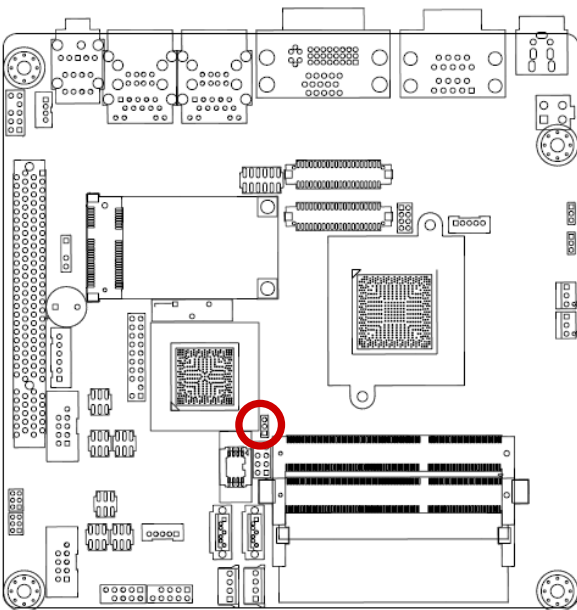
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To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the onboard battery.
3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
4. Re-install the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the key during the boot process and enter BIOS setup to re-enter data.



Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!



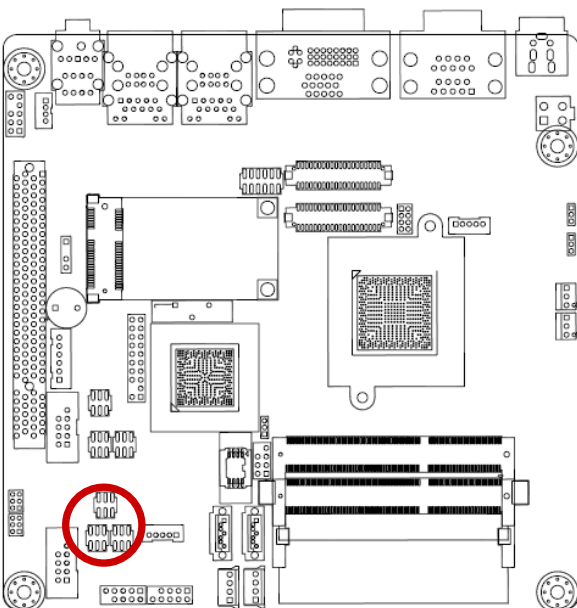
Normal (Default)



Clear CMOS

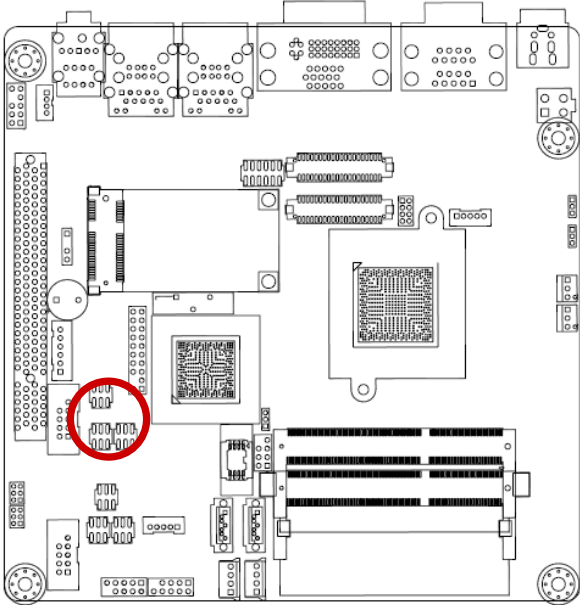


1.7.2 COM3, COM4, RS232/422/485 Mode select



	RS-232	RS-422	RS-485
JP1	1-3, 2-4	3-5, 4-6	3-5, 4-6
JP2	1-3, 2-4	3-5, 4-6	3-5, 4-6
JP3	1-2	3-4	5-6

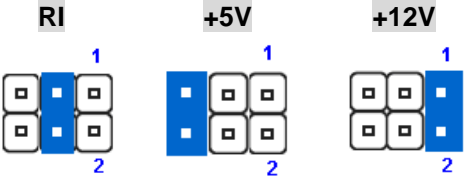
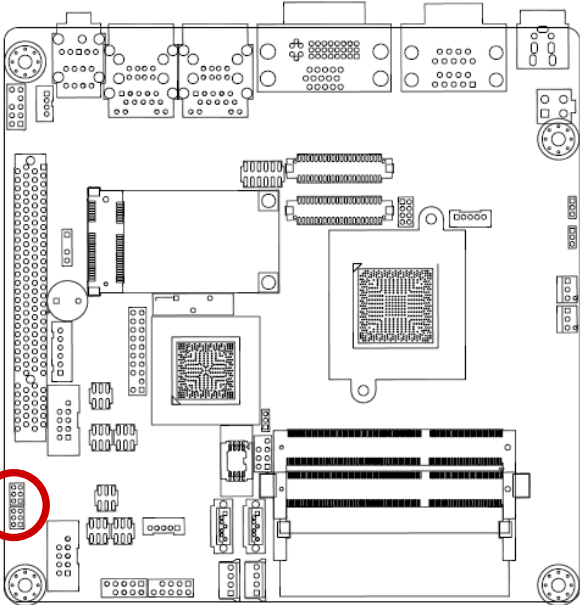
Default = RS232



	RS-232	RS-422	RS-485
JP6	1-3, 2-4	3-5, 4-6	3-5, 4-6
JP4	1-3, 2-4	3-5, 4-6	3-5, 4-6
JP5	1-2	3-4	5-6

Default = RS232

1.7.3 COM3, COM4, RI/+5V/+12V Select (JCOMPWR3 JCOMPWR4)



Default = RI

1.7.4 LVDS Backlight control mode (JLVDS_BKL1)

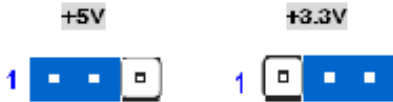


JLVDS_BKL1

1-2(default)=Linear mode.

1.7.5 LVDS Backlight power selection(JLVDS_P1)

LVDS backlight Voltage select (2-3(default)=+3.3V)



1.7.6 AT/ATX Power Mode Select (JDS6)

This jumper allows you to select ATX Mode or AT mode (2-3(default) = ATX mode)



1.7.7 SATA Port2 function select(JSATA_SEL1)



JSATA_SEL1:

- 1-2=CF
- 2-3(default)=SATA HDD

1.7.8 System deep S5 Power Saving Control(JDS5)

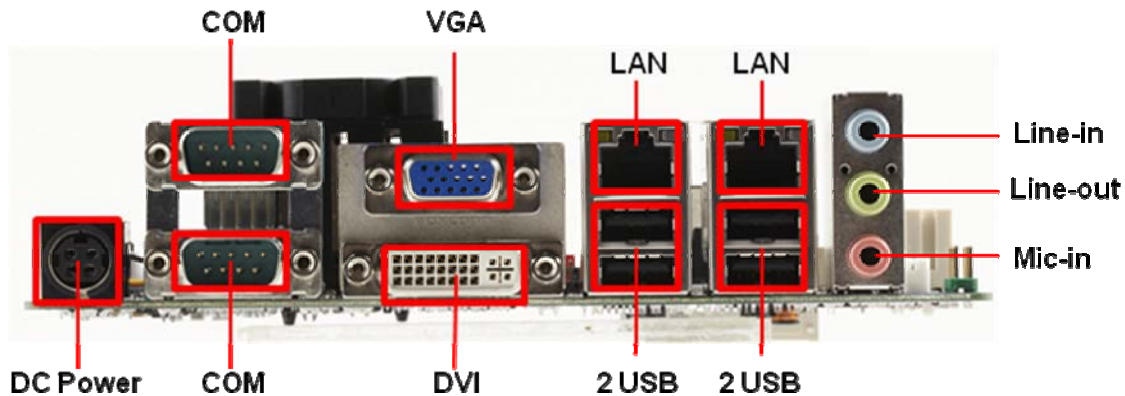


JDS5:

- 1-2= Deep S5 state.
- 2-3(default)= Normal ACPI S5 state.

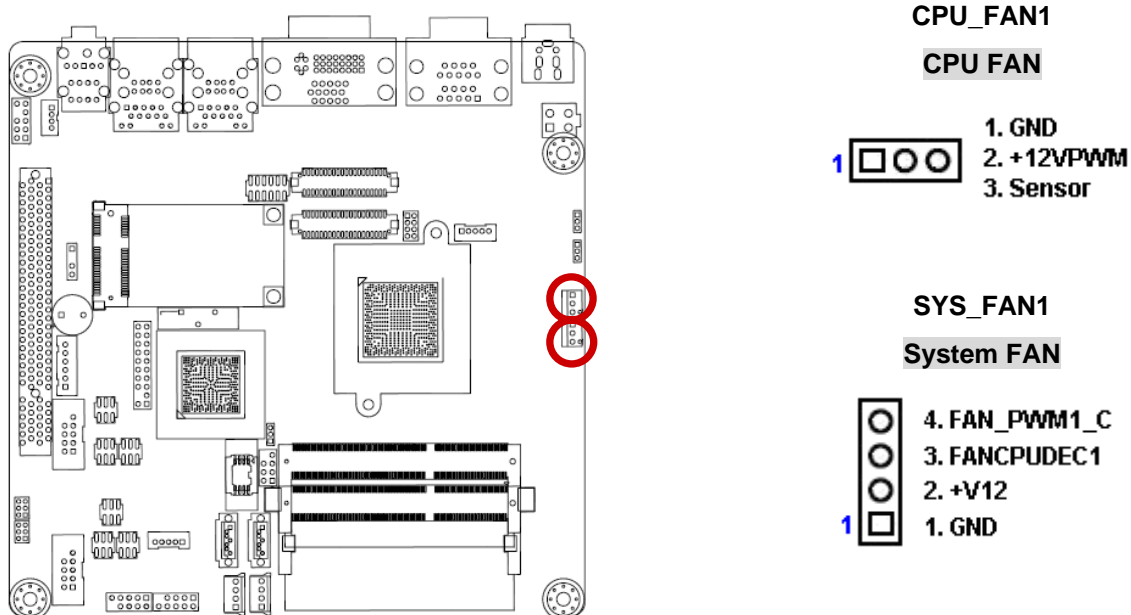
1.8 Connectors

1.8.1 Rear panel connectors



1.8.2 CPU and System fan connectors (CPU_FAN1, SYS_FAN1)

The fan connectors support cooling fans of 280mA (3.36 W max.) at 4800rpm or a total of 1A~2.22A (26.64W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

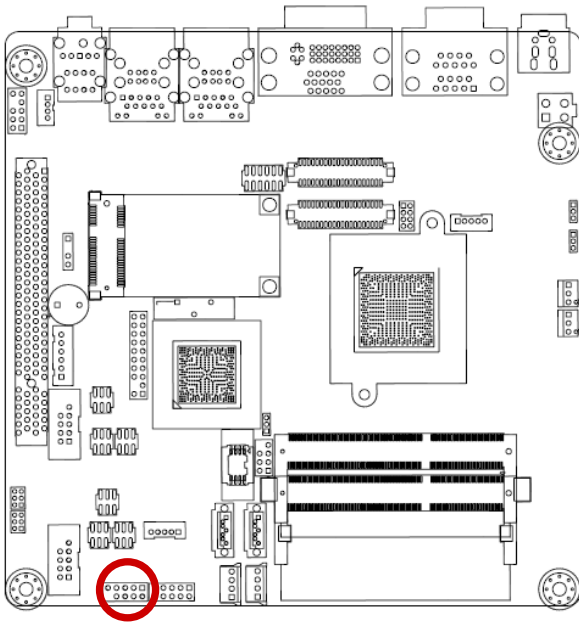


Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components.

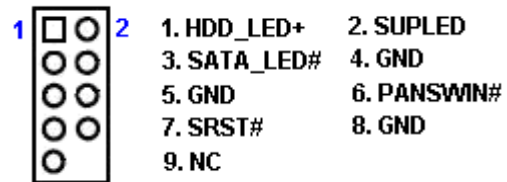
These are not jumpers! DO NOT place jumper caps on the fan connectors.

1.8.3 System Panel (F_PANEL)

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC'97 audio standard.



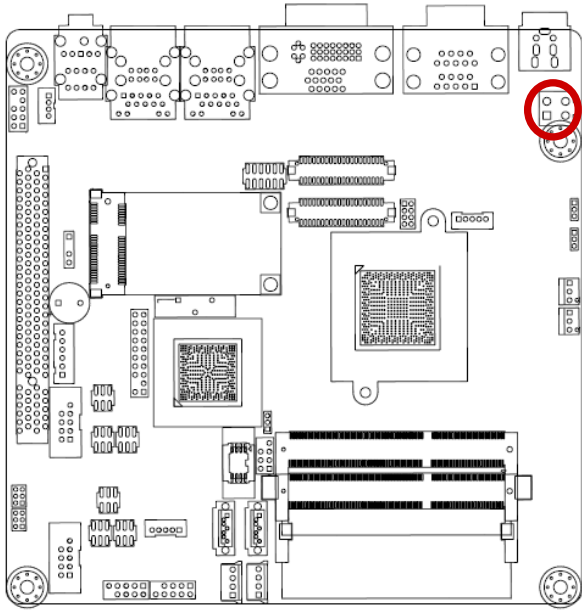
F_PANEL



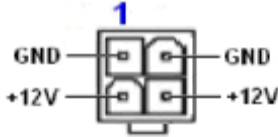
- **ATX Power Button/Soft-off Button (Pin 6-8 PWRBT)**
This 2-pin connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch and holding it for more than four seconds while the system is ON turns the system OFF.
- **Reset Button (Pin 5-7 SYS_RST)**
This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.
- **Power LED (Pin 1-3 PWRLED)**
This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.
- **Hard Disk Drive Activity LED (Pin 1-3 HDLED)**
This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

1.8.4 ATX power connectors (ATX12V1)

The connector is for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.



ATX12V1

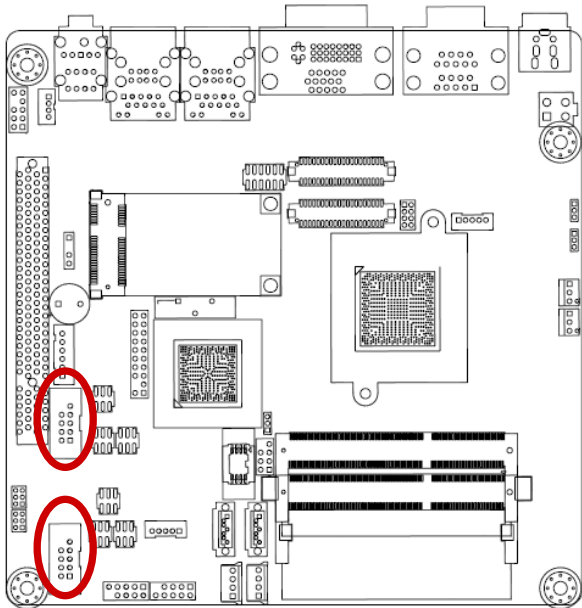


- Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices. The system may become unstable or may not boot up if the power is inadequate.
- Make sure that your power supply unit (PSU) can provide at least the minimum power required by your system. See the table below for details.

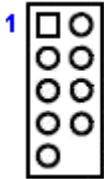


1.8.5 Serial Port connectors (COM3, COM4)

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.

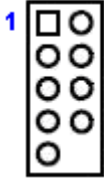


COM 3



- | | |
|-----------|-----------|
| 1. DDCD2# | 2. RRXD2 |
| 3. TTXD2 | 4. DDTR2# |
| 5. GND | 6. DDSR2# |
| 7. RRTS2# | 8. CCTS2# |
| 9. RRI2 | |

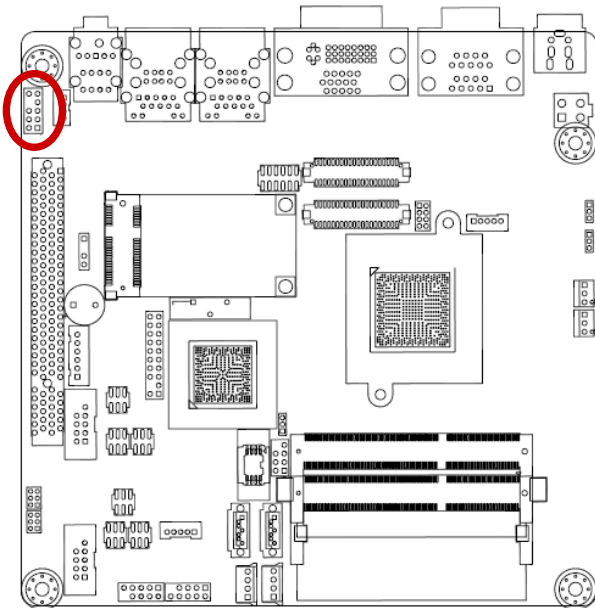
COM 4



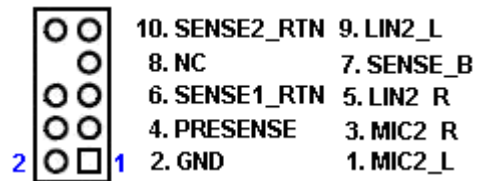
- | | |
|-----------|-----------|
| 1. DDCD2# | 2. RRXD2 |
| 3. TTXD2 | 4. DDTR2# |
| 5. GND | 6. DDSR2# |
| 7. RRTS2# | 8. CCTS2# |
| 9. RRI2 | |


1.8.6 Audio Mic.-In & Line-Out Connector (AAFP1)

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC '97 (optional) audio standard. Connect one end of the front panel audio I/O module cable to this connector.



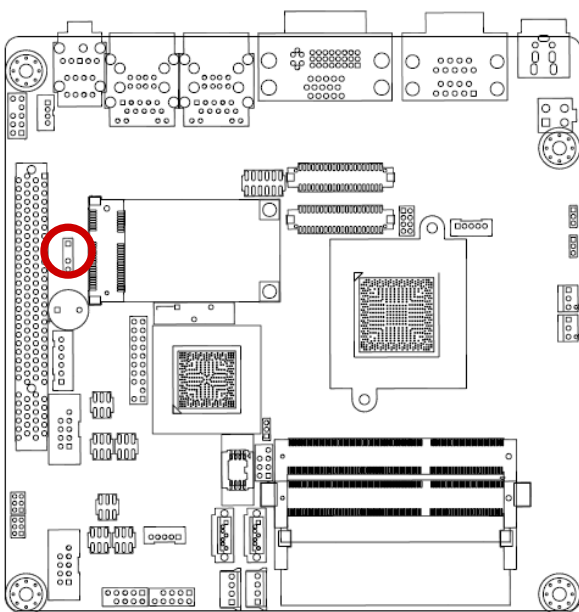
AAFP1



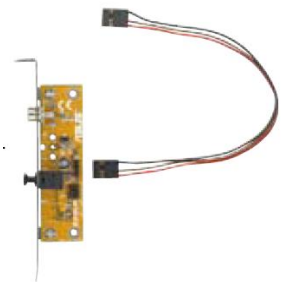
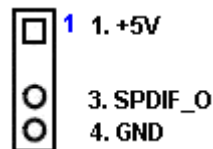
 For motherboards with the optional HD Audio feature, we recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

1.8.7 Digital Audio connector (SPDIF_OUT1)

This connector is for the S/PDIF audio module to allow digital sound output. Connect one end of the S/PDIF audio cable to this connector and the other end to the S/PDIF module.



SPDIF_OUT1

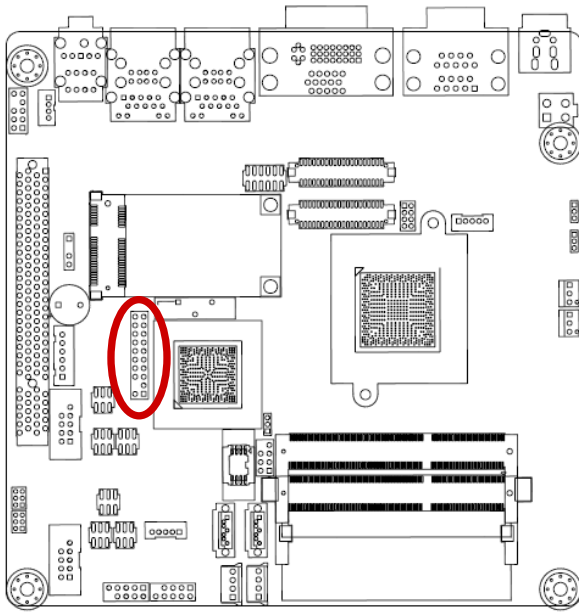




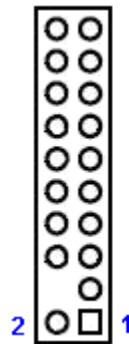
The S/PDIF out module is purchased separately.

1.8.8 TPM Connector (TPM1)

The connector is for support TPM.



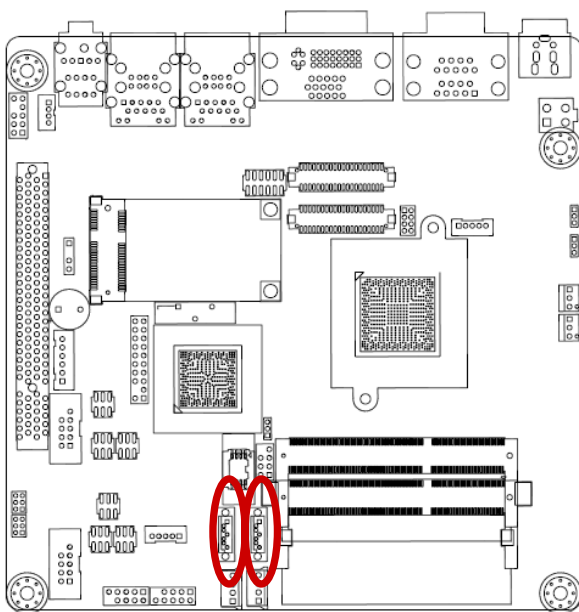
TPM



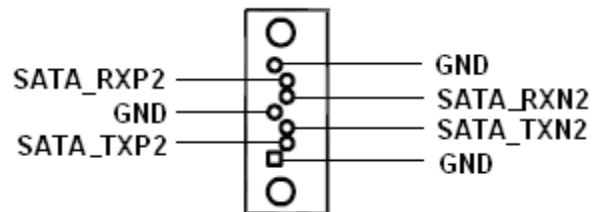
- | | |
|-------------|------------|
| 20. SMB_CLK | 19. LPCPD# |
| 18. CLKRUN# | 17. GND |
| 16. SERIRQ | 15. 3VSB |
| 14. NC | 13. NC |
| 12. GND | 11. LAD0 |
| 10. LAD1 | 9. 3V |
| 8. LAD2 | 7. LAD3 |
| 6. SMB_DATA | 5. PLTRST# |
| 2. GND | 3. LFRAME# |
| | 1. CK_33M |

1.8.9 Serial ATA II connector (SATA1, SATA2)

These connectors support SATA 2.0 and are for the Serial ATA signal cables for Serial ATA hard disk drives.



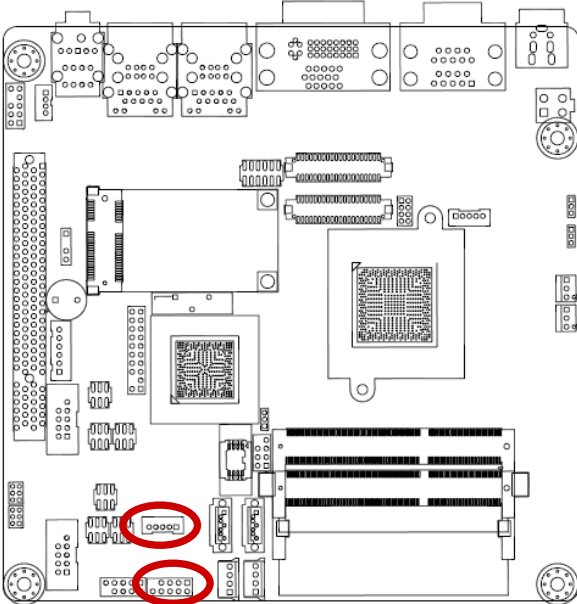
SATA0 SATA1



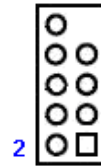
ICDT-IB2 User's Manual

1.8.10 USB connectors (USB45, USB6)

These connectors are for USB 2.0 ports. Connect the optional USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.



USB45



- 9. NC
- 7. GND
- 5. USB_P4_P
- 3. USB_P4_N
- 1. USB+5V
- 8. GND
- 6. USB_P5_P
- 4. USB_P5_N
- 2. USB+5V

USB6

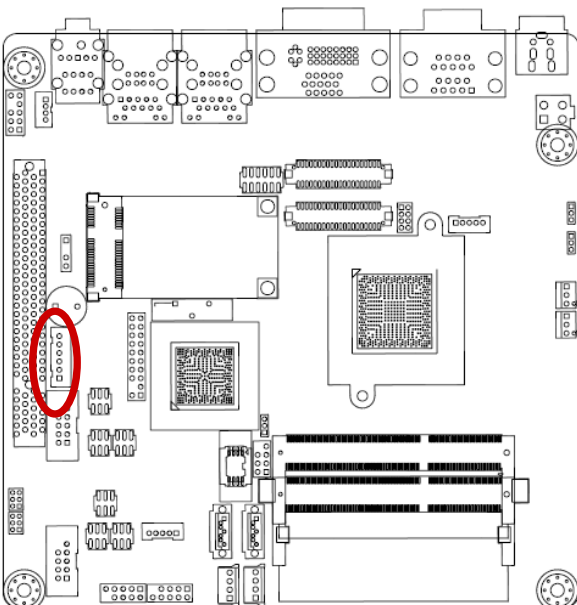


- 1.+5V
- 2.USB_P6_N
- 3.USB_P6_N
- 4.GND
- 5.NC

	Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!
	The USB module is purchased separately.

1.8.11 Keyboard / Mouse Connector (KB1)

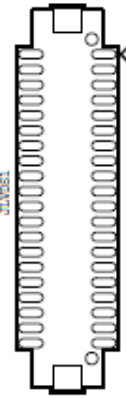
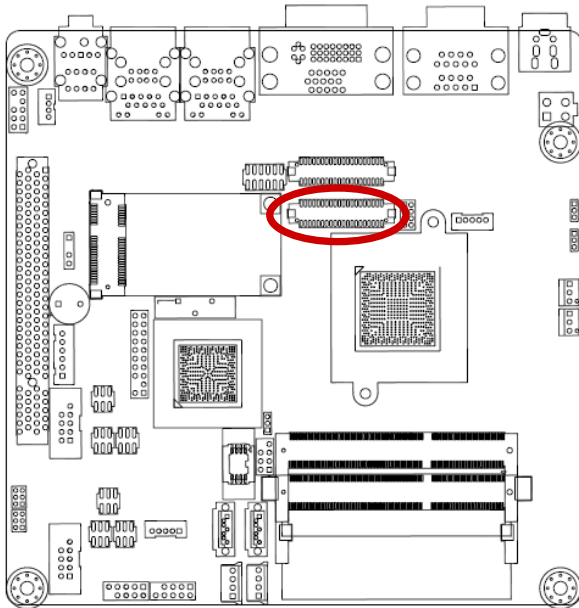
The connector is for PS2 Keyboard and Mouse.



- 1. Keyboard Clock
- 2. Keyboard Data
- 3. Mouse Data
- 4. GND
- 5. +5V STBY
- 6. Mouse Clock

1.8.12 LVDS1 Connector (JLVDS1)

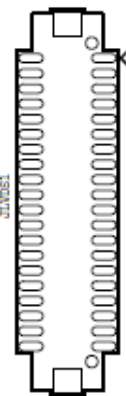
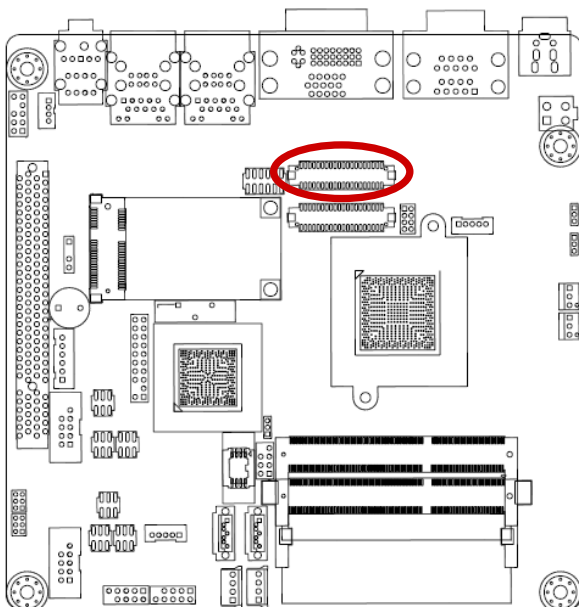
The connector is for 18/24-bit dual channel LVDS panel.



- | | |
|------------------|-----------------|
| 2. +5V | 1. +3.3V |
| 4. +5V | 3. +3.3V |
| 6. LDVS DDC DATA | 5. LDVS DDC CLK |
| 8. GND | 7. GND |
| 10. LVDS_TX0_P | 9. LVDS_TX1_P |
| 12. LVDS_TX0_N | 11. LVDS_TX1_N |
| 14. GND | 13. GND |
| 16. LVDS_TX2_P | 15. LVDS_TX3_P |
| 18. LVDS_TX2_N | 17. LVDS_TX3_N |
| 20. GND | 19. GND |
| 22. NC | 21. NC |
| 24. NC | 23. NC |
| 26. GND | 25. GND |
| 28. NC | 27. NC |
| 30. NC | 29. NC |
| 32. GND | 31. GND |
| 34. LVDS_CLK_P | 33. NC |
| 36. LVDS_CLK_N | 35. NC |
| 38. GND | 37. GND |
| 40. +12V | 39. +12V |

1.8.13 LVDS2 Connector (JLVDS2)

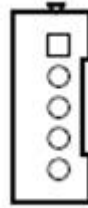
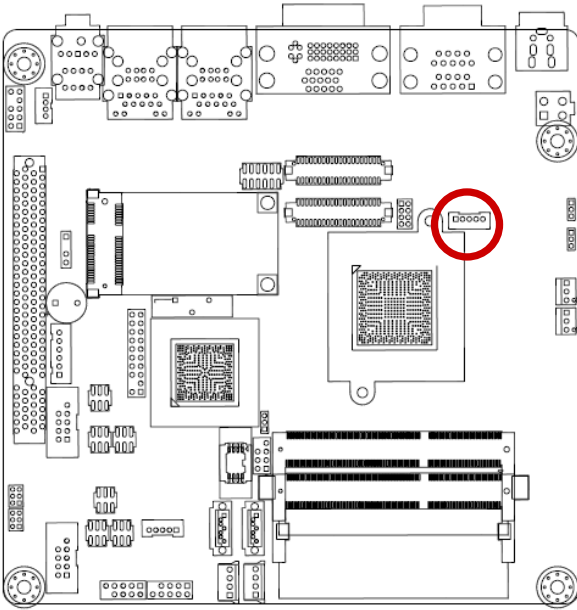
The connector is for 18/24-bit dual channel LVDS panel.



- | | |
|-------------------|------------------|
| 2. +5V | 1. +3.3V |
| 4. +5V | 3. +3.3V |
| 6. LVDS2 DDC DATA | 5. LVDS2 DDC_CLK |
| 8. GND | 7. GND |
| 10. LVDS0_TX0_P | 9. LDVS0_TX1_P |
| 12. LVDS0_TX0_N | 11. LVDS0_TX1_N |
| 14. GND | 13. GND |
| 16. LVDS0_TX2_P | 15. LVDS0_TX3_P |
| 18. LVDS0_TX0_N | 17. LVDS0_TX3_N |
| 20. GND | 19. GND |
| 22. LVDS1_TX0_P | 21. LVDS1_TX1_P |
| 24. LVDS1_TX0_N | 23. LVDS1_TX1_N |
| 26. GND | 25. GND |
| 28. LVDS1_TX2_P | 27. LVDS1_TX3_P |
| 30. LVDS1_TX2_N | 29. LVDS1_TX3_N |
| 32. GND | 31. GND |
| 34. LVDS0_CLK_P | 33. LVDS1_CLK_P |
| 36. LVDS0_CLK_N | 35. LVDS1_CLK_N |
| 38. GND | 37. GND |
| 40. +12V | 39. +12V |

1.8.14 LVDS Backlight Connector (JBKL1)

The connector is for the control of internal LVDS brightness.

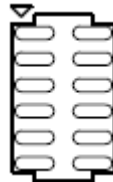
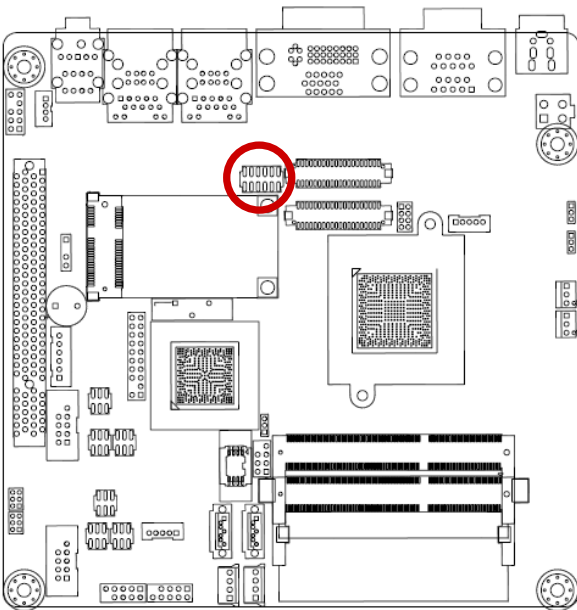


JBKL1

- 1. +12V
- 2. GND
- 3. Backlight Enable
- 4. Backlight Ctrl
- 5. +5V

1.8.15 GPIO Connector (JDIO1)

This connector is for GPIO function.

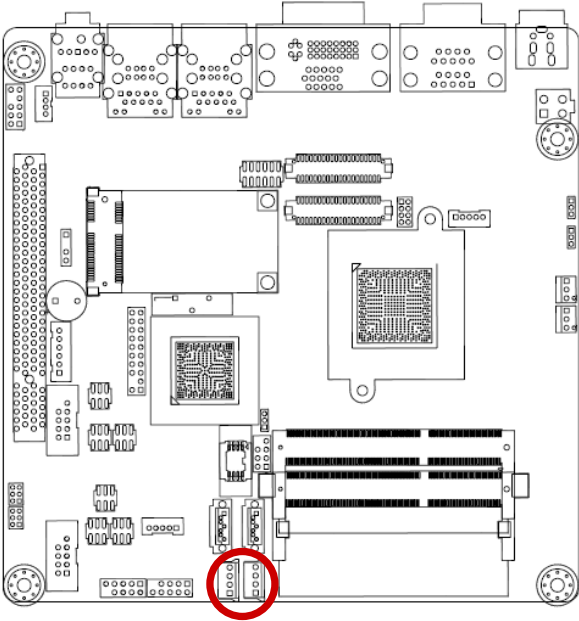


JDIO1

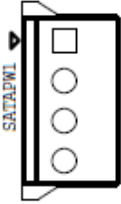
- | | |
|----------------|----------------|
| 1. SIO_GPIO0 | 2. SIO_GPIO4 |
| 3. SIO_GPIO1 | 4. SIO_GPIO5 |
| 5. SIO_GPIO2 | 6. SIO_GPIO6 |
| 7. SIO_GPIO3 | 8. SIO_GPIO7 |
| 9. SMBUS CIOCK | 10. SMBUS DATA |
| 11. GND | 12. +5V STBY |

1.8.16 Serial ATA Power Connector (SATAPW1,SATAPW2)

These connectors support SATA 2.0 and for Serial ATA hard disk drives.



SATAPW1, SATAPW2



- 1. +12V
- 2. GND
- 3. GND
- 4. +5V