



integration with integrity

User's Manual

Half-size PCI-SBC 3308180

Version 1.0

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1.2 About this User's Manual

This User's Manual is intended for experienced users and integrators with hardware knowledge of personal computers. If you are not sure about any description in this User's Manual, please consult your vendor before further handling.

1.3 Warning

Single Board Computers and their components contain very delicate Integrated Circuits (IC). To protect the Single Board Computer and its components against damage from static electricity, you should always follow the following precautions when handling it :

1. Disconnect your Single Board Computer from the power source when you want to work on the inside.
2. Hold the board by the edges and try not to touch the IC chips, leads or circuitry.
3. Use a grounded wrist strap when handling computer components.
4. Place components on a grounded antistatic pad or on the bag that came with the Single Board Computer, whenever components are separated from the system.

1.4 Replacing the lithium battery

Incorrect replacement of the lithium battery may lead to a risk of explosion. The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.

Do not throw lithium batteries into the trashcan. It must be disposed of in accordance with local regulations concerning special waste.

1.5 Technical Support

Please do not hesitate to call or e-mail Technical Support if you have any questions:

Phone (800) 833-8999

[Click for Technical Support](#)

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1.7 Packing List



1 x 3308180 Half-size PCI SBC



1 x CPU Heat Sink or Cooler



1 x Driver CD



1 x Quick Installation Guide

If any of the above items is damaged or missing, contact your vendor immediately.

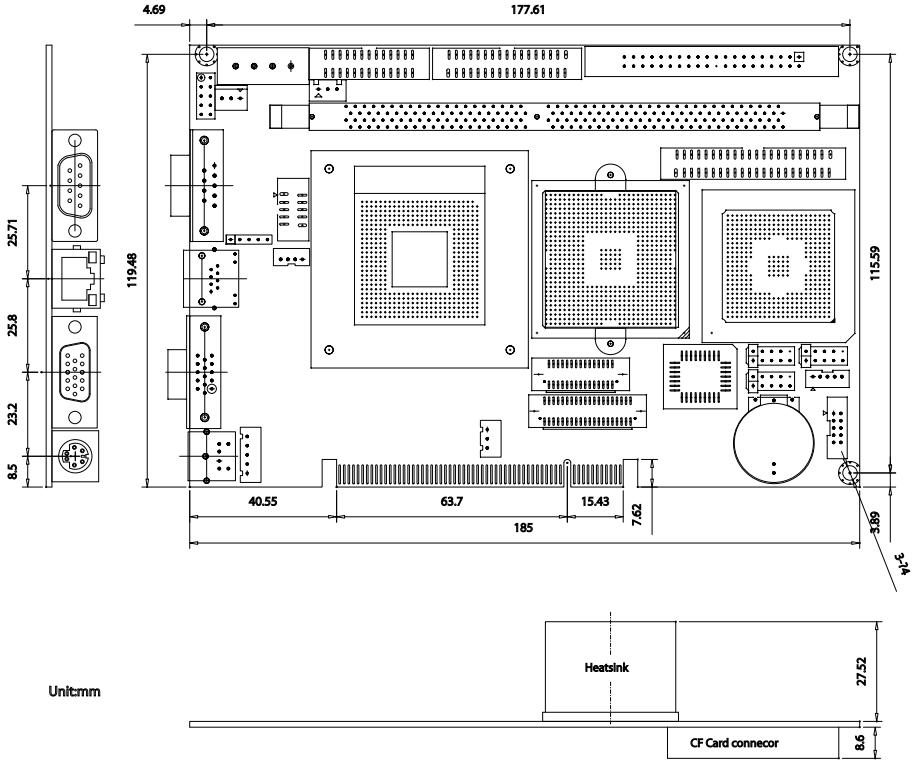
1.8 Ordering Information

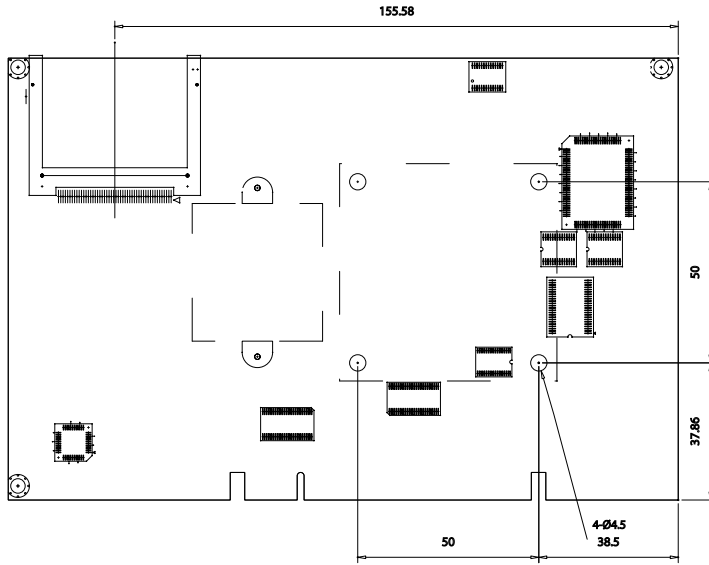
3308180A	Half-size PCI with embedded Intel® μ FC-BGA Celeron® M 600MHz SBC with CRT/LCD, Audio & LAN
3308180B	Half-size PCI Intel® Pentium® / Celeron® M socket 478 SBC with CRT/LCD, Audio & LAN
Backplanes	Click for - PCI Backplanes for expansion

1.9 Specification

Form Factor	Half-size PCI SBC
Processor	Intel® µFC-PGA Pentium® M up to 1.8GHz (FSB 400MHz)
Chipset	Intel® 852GM + Intel® ICH4
System Memory	1 x 184-pin DIMM socket up to 1GB DDR 200/266/333 Mz SDRAM
VGA Controller	Intel® 852GM Extreme Graphics 2 (2D/3D) up to 64MB with CRT/LVDS/TTL (Dual independent display)
Ethernet	1 x Intel® 82562ET PCI 10/100 Base-T Ethernet
I/O Chips	Winbond W83627HG
BIOS	Phoenix-Award BIOS
Audio	AC'97 Codec, onboard supports MIC-in/Line-in/Line-out
IDE Interface	1 x Ultra DMA 100/66/33, supports 2 IDE devices 1 x Ultra DMA 33, supports 2 IDE devices
Serial Port	2 x COM port (COM1: RS-232, COM2: RS-232/422/485 Selectable)
Parallel Port	1 x SPP/EPP/ECP mode
FDD	1 x Floppy connector
KBMS	Standard PS/2 Keyboard and Mouse
Universal Serial Bus	6 x USB 2.0
Expansion Interface	1 x CF II
Hardware Monitor Chip	Integrated in W83627HG
RTC	Real Time Clock
Operating Temp.	0°C ~ 60°C (32°F ~ 140°F)
Watchdog Timer	255-level Reset
Dimension (L x W)	185 x 122mm (7.3" x 4.8")

1.10 Board Dimensions

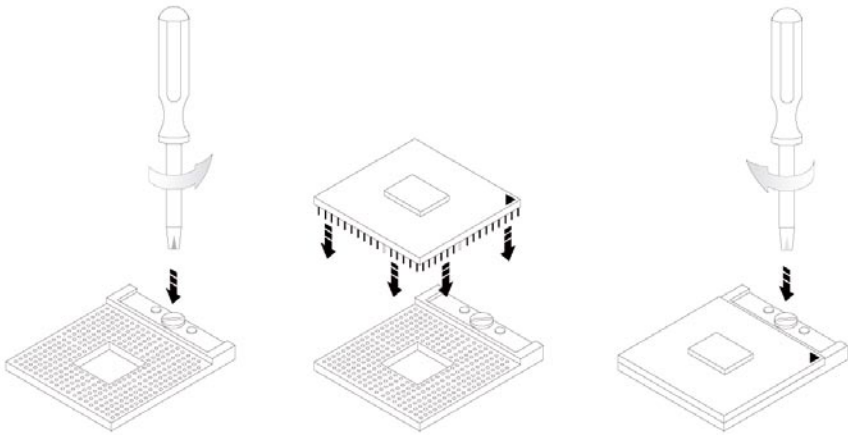




1.11 Installing the CPU

The processor socket comes with a screw to secure the CPU. As showing in the picture as bellow, loose the screw first before inserting the CPU.

Place the CPU into the socket by making sure the notch on the corner of the CPU corresponding with the notch on the inside of the socket. Once the CPU has slide into the socket, lock the screw.



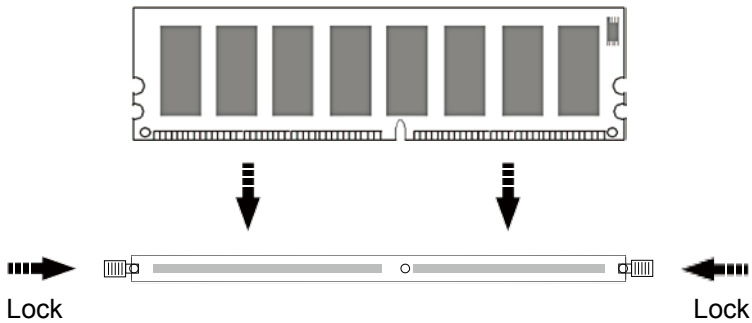
Make sure that heat sink of the CPU top surface is in complete contact to avoid the CPU overheating problem.

If not, it would cause your system or CPU to be hanged, unstable, damaged.

1.12 Installing the Memory

To install the Memory module, locate the Memory DIMM slot on the board and perform as below:

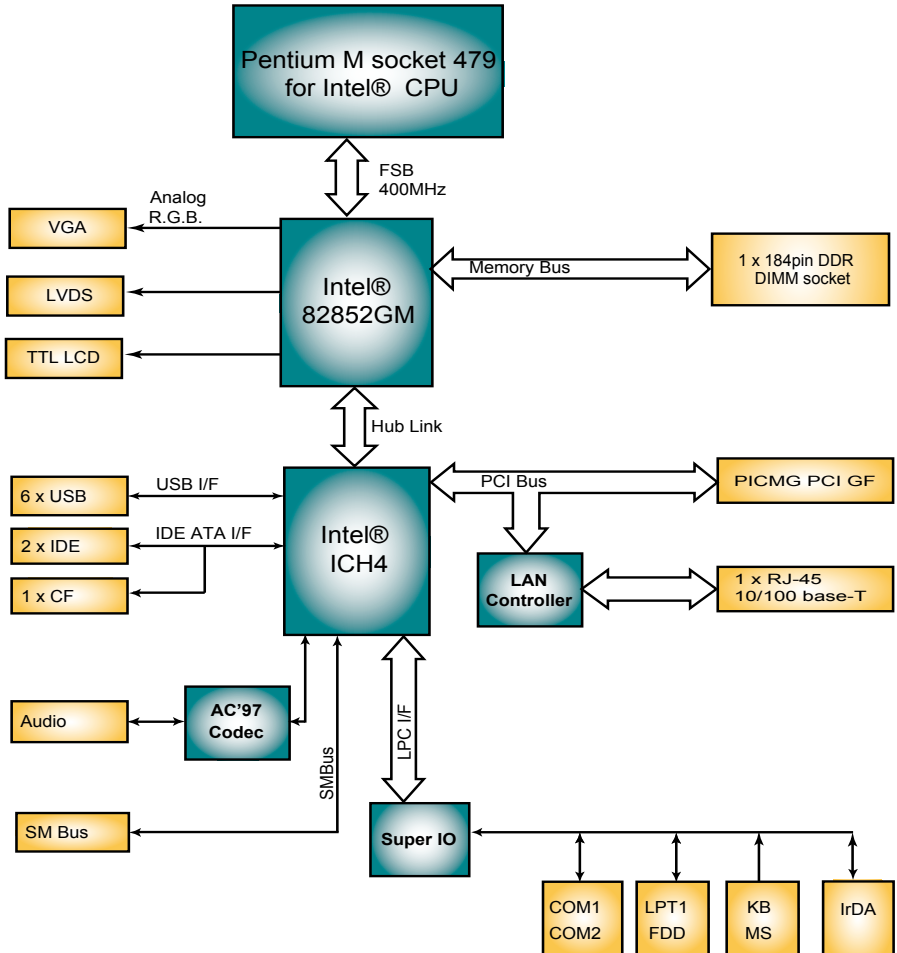
1. Hold the Memory module so that the key of the Memory module align with those on the Memory DIMM slot.
2. Gently push the Memory module in an upright position and a right way until the clips of the DIMM slot close to lock the Memory module in place, when the Memory module touches the bottom of the DIMM slot.
3. To remove the Memory module, just pressing the clips of DIMM slot with both hands.



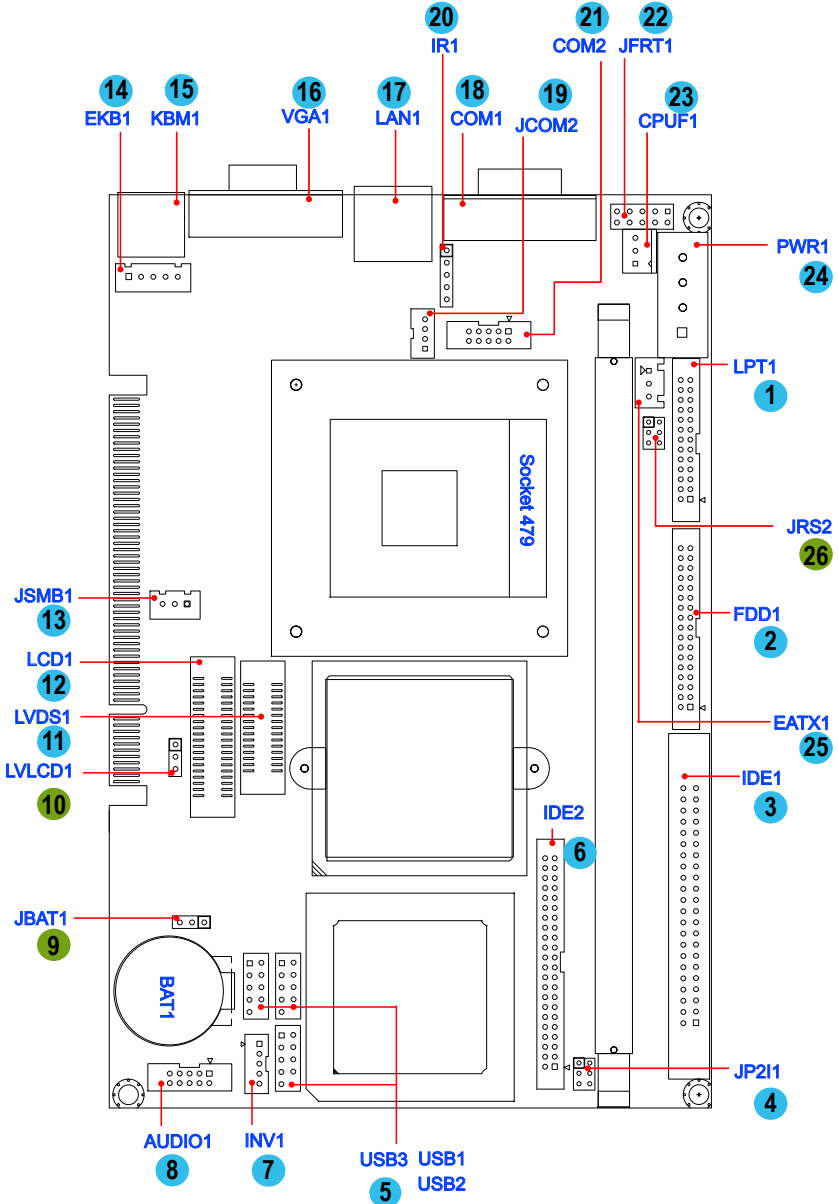
Chapter 2

Installation

2.1 Block Diagrams





2.2 Jumpers and Connectors



Jumpers

JBAT1: Clear CMOS Setup (9)

Pin	Mode	
1-2	Keep CMOS (Default)	
2-3	Clear CMOS	


JVLCD1: LCD Panel Voltage Select (10)

The voltage of LCD panel could be selected by JVLCD1 in +5V or +3.3V.

Pin	Voltage	
1-2	+5V	
2-3	+3.3V (Default)	

JRS1: COM2 RS-232/422/485 Select (26)

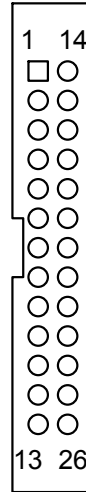
It can be configured COM2 to operate in RS-232, RS-422 or RS-485 mode

Pin	Mode	
1-2 (Short)	RS-232 (Default)	
3-4 (Short)	RS-422	
5-6 (Short)	RS-485	

Connectors

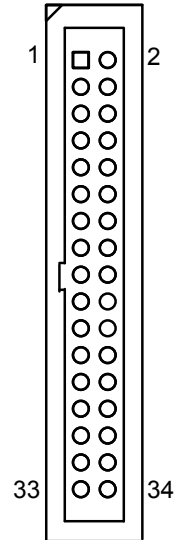
LPT1: Parallel Port Connector (1)

Pin	Description	Pin	Description
1	STB	14	#AFD
2	PD0	15	#ERR
3	PD1	16	#INIT
4	PD2	17	#SLIN
5	PD3	18	GND
6	PD4	19	GND
7	PD5	20	GND
8	PD6	21	GND
9	PD7	22	GND
10	#ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	N/C



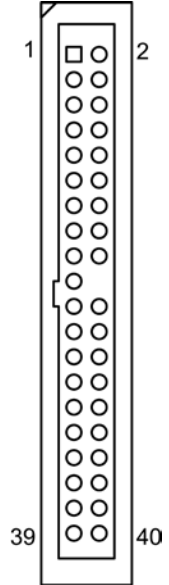
FDD1: FDD 34-pin Connector (2)

Pin	Description	Pin	Description
1	GND	2	#RWC
3	GND	4	N/A
5	GND	6	#DS1
7	GND	8	#INDEX
9	GND	10	#MOA
11	GND	12	#DSB
13	GND	14	#DSA
15	GND	16	#MOB
17	GND	18	#DIR
19	GND	20	#STEP
21	GND	22	#WD
23	GND	24	#WE
25	GND	26	#TRAK
27	GND	28	#WP
29	GND	30	#RDATA
31	GND	32	#HEAD
33	GND	34	#DSKCHG



IDE1: Primary 40-pin IDE Connector (3)

Pin	Description	Pin	Description
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	N/C
21	REQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	IO READY	28	IDESEL
29	DACK	30	GND
31	IRQ14	32	N/C
33	ADDR1	34	ATA66 DETECT
35	ADDR0	36	ADDR2
37	#CS0	38	#CS1 (#HD SELET1)
39	IDEACTP	40	GND



JP211: Options for PCI to ISA signal (4)

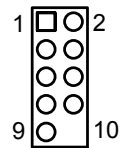
Pin	Description	Mode	Description
1	#PREQF	2	#PGNTF
3	#PPDREQ	4	#PPDGNT
5	SERIRQ	6	NOGO



USB1/ USB2/ USB3: USB 2.0 ConnectorS (5)

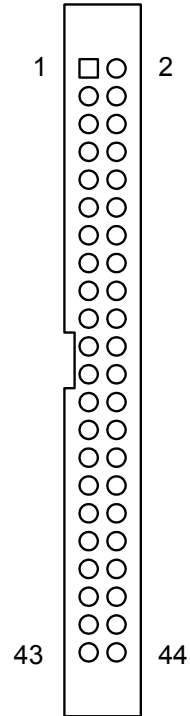
USB1/ USB2/ USB3 supports two USB 2.0 w/ 480MB/s by pin header

Pin	Description	Pin	Description
1	+5V	2	+5V
3	USBD-	4	USBD-
5	USBD+	6	USBD+
7	GND	8	GND
9	N/C	10	N/C (Key)



IDE2: Secondary IDE 44-pin Connector (6)

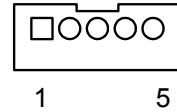
Pin	Description	Pin	Description
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	N/C
21	DREQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	IO READY	28	IDSEL
29	DACK	30	GND
31	IRQ15	32	N/C
33	ADDR1	34	ATA66 DETECT
35	ADDR0	36	ADDR2
37	CS#1	38	CS#3
39	IDEACTP	40	GND
41	VCC (+5V)	42	VCC (+5V)
43	GND	44	N/C



INV1: LCD Inverter Connector (7)

Onboard 5-pin mini box pin header

Pin	Description
1	+12V
2	GND
3	Backlight on/off
4	Brightness control
5	GND



AUDIO1: AUDIO Interface (8)

Pin	Description	Pin	Description
1	Line-in Left	2	Line-in Right
3	GND	4	GND
5	MIC	6	N/C
7	GND	8	GND
9	Speaker Left	10	Speaker Right

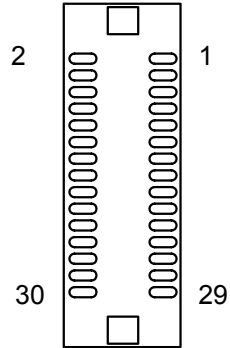


LVDS1: LVDS LCD Connector (11)

The LVDS connector on board DF-13 30-pin header and supports 18-bit or 36-bit.

VDD could be selected by JVLCD1 in +5V or +3.3V.

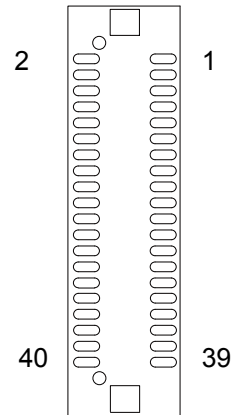
Pin	Description	Pin	Description
2	VDD	1	VDD
4	TX2CLK+	3	TX1CLK+
6	TX2CLK-	5	TX1CLK-
8	GND	7	GND
10	TX2D0+	9	TX1D0+
12	TX2D0-	11	TX1D0-
14	GND	13	GND
16	TX2D1+	15	TX1D1+
18	TX2D1-	17	TX1D1-
20	GND	19	GND
22	TX2D2+	21	TX1D2+
24	TX2D2-	23	TX1D2-
26	GND	25	GND
28	TX2D3+	27	TX1D3+
30	TX2D3-	29	TX1D3-



LCD1: TTL LCD Connector (12)

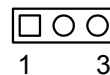
The LCD connector is on board DF-13 40-pin header, and up to 1600 x 1200

Pin	Description	Pin	Description
2	5V_SAFE	1	5V_SAFE
4	GND	3	GND
6	3V_SAFE	5	3V_SAFE
8	GND	7	Vcon
10	PD1	9	PD0
12	PD3	11	PD2
14	PD5	13	PD4
16	PD7	15	PD6
18	PD9	17	PD8
20	PD11	19	PD10
22	PD13	21	PD12
24	PD15	23	PD14
26	PD17	25	PD16
28	PD19	27	PD18
30	PD21	29	PD20
32	PD23	31	PD22
34	GND	33	GND
36	FILM	35	SHIFT CLOCK
38	LP	37	M
40	ENAVEE	39	ENABLK



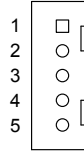
JSMB1: External SMBus Connector (13)

Pin	Voltage
1	DATA
2	CLK
3	GND



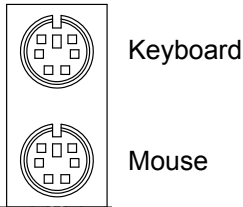
EKB1: External Keyboard/Mouse Connector (14)

Pin	Description
1	KB_DAT
2	KB_CLK
3	N/A
4	KB_GND
5	BK_VCC



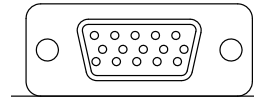
KBM1: PS/2 Keyboard & Mouse (15)

Standard Mini-DIN PS/2 Keyboard & Mouse connector



VGA1: CRT Connector (16)

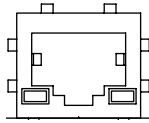
Pin	Description	Pin	Description
1	RED	9	+5V
2	GREEN	10	GND
3	BLUE	11	N/C
4	N/C	12	VDDAT
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	VDCLK
8	GND		



CRT

LAN1: 10/100 RJ-45 (17)

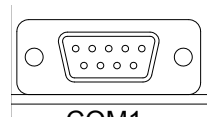
LAN2 supports 10/100 Mbps Fast Ethernet



LAN2

COM1: RS232 Connector (18)

Pin	Description	Pin	Description
1	DCD#	2	RXD
3	TXD	4	DTR#
5	GND	6	DSR#
7	RTS#	8	CTS#
9	RI#		

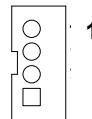


COM1

JCOM2: RS-422/ 485 Output Connector (19)

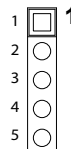
2.0 mm 4-pin wafer connector

Pin	RS-422	RS-485
1	TX+	Data+
2	TX-	Data-
3	RX+	N/C
4	RX-	N/C



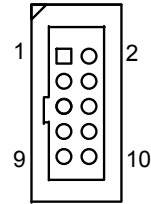
IR1: Infrared Connector (20)

Pin	Voltage
1	+5V
2	N/C
3	IRRX
4	GND
5	IRTX



COM2: RS232 Connector (21)

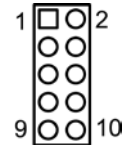
Pin	Description	Pin	Description
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N/C



JFRT1: Switches and Indicators (22)

It provides connectors for system indicators that provides light indication of the computer activities and switches to change the computer status.

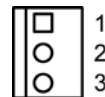
Pin	Description	Pin	Description
1	RESET+	2	RESET-
3	Power LED+	4	Power LED-
5	HDD LED+	6	HDD LED-
7	SPEAKER+	8	SPEAKER-
9	PSON+	10	PSON-



CPUF1: CPU Fan Power Connector (23)

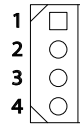
CPUF1 IS 3-pin header for the system fan. The fan must be a +12V fan.

Pin	Description
1	GND
2	+12V
3	FAN_Detect



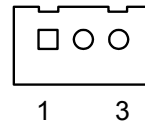
PWR1: Power Supply Connector (24)

Pin	Description
1	+12V
2	GND
3	GND
4	+5V



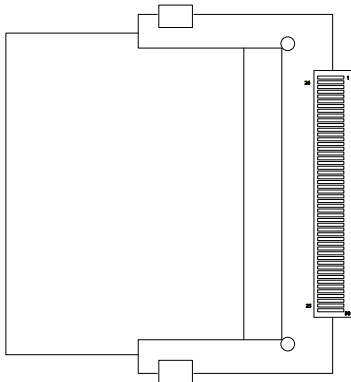
EATX1: ATX Feature Connector (25)

Pin	Description
1	PS-ON
2	GND
3	5V_SB



CFD1: CompactFlash II Socket

After hot-swapping CF II, you must restart your system for device detecting.
Default setting: IDE Master.



Chapter 3

Appendix

3.1 I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device.

The following table lists the I/O port addresses used.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278h - 27Fh	Parallel Port #2 (LPT2)
2F8h - 2FFh	Serial Port #2 (COM2)
2B0h - 2DFh	Graphics adapter Controller
378h - 3FFh	Parallel Port #1 (LPT1)
360h - 36Fh	Network Ports
3B0h - 3BFh	Monochrome & Printer adapter
3C0h - 3CFh	EGA adapter
3D0h - 3DFh	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1 (COM1)

3.2 Interrupt Request Lines (IRQ)

Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on board.

Level	Function
IRQ 0	System Timer
IRQ 1	Keyboard
IRQ 2	Cascaded with IRQ 9
IRQ 3	COM2
IRQ 4	COM1
IRQ 5	AC'97
IRQ 6	Floppy Drive Controller
IRQ 7	LPT1
IRQ 8	Real Time Clock
IRQ 9	USB, ACPI
IRQ 10	USB, VGA
IRQ 11	USB, LAN
IRQ 12	PS/2 mouse or Open
IRQ 13	Math Coprocessor
IRQ 14	Primary Hard Drive controller
IRQ 15	Secondary Hard Drive controller

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