



integration with integrity

User's Manual

Single Board Computer 3307910

Version A2, March 2007

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Table of Contents

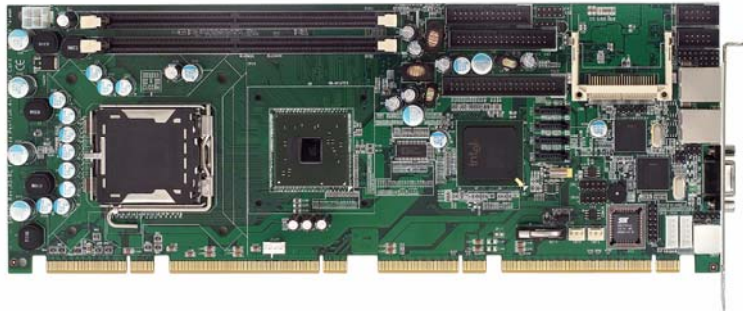
Disclaimers	ii
ESD Precautions	iii
Chapter 1 Introduction.....	1
1.1 General Description.....	1
1.2 Specifications.....	2
1.3 Utilities Supported	3
1.4 Ordering information.....	3
1.5 Board Dimensions	4
Chapter 2 Jumpers and Connectors.....	5
2.1 Board Layout.....	5
2.2 Jumper Settings	6
2.2.1 COM2 RS232/422/485 Settings: JP2, JP3,JP4.....	7
2.2.2 CompactFlash Setting: JP5.....	7
2.2.3 CompactFlash Voltage Setting: JP6.....	7
2.2.4 LAN2 Speed Setting: JP8.....	7
2.2.5 LAN1 Speed Setting: JP10.....	8
2.2.6 The Active LED for LAN2 : JP11.....	8
2.2.7 The Active LED for LAN1: JP12.....	8
2.2.8 IrDA connector: JP13.....	8
2.2.9 CMOS Clear Jumper: JP14.....	9
2.2.10 Processor List for Intel Core2 Duo.....	9
2.3 Connectors.....	10
Chapter 3 Installation	11
3.1 CPU Installation.....	11
3.2 Installing ATX Power Supply	18
3.3 Installing the Memory.....	18
3.4 Backplane Installation	19
3.4.1 Notice for 3307910	19
3.4.2 How to install the PICMG1.3 backplane for	

3307910.....	19
Chapter 4 Hardware Description	21
4.2 Enhanced IDE Interface connector: CN10.....	22
4.3 Display interface-CN16	23
4.4 Floppy Disk Connector-CN7	23
4.5 Parallel Port Interface:CN2	24
4.6 Serial Port Interface.....	25
4.7 Keyboard and PS/2 Mouse Connectors	27
4.8 USB Connector.....	27
4.9 Audio Output connector: CN1	28

A p p e n d i x A Watchdog Timer	29
A p p e n d i x B PCI IRQ Routing	30
PICMG PCI IRQ Routing.....	30
On Board Device IRQ Routing	30
A p p e n d i x C Memory Mapping	31

Chapter 1 Introduction

1.1 General Description



The **3307910** PICMG 1.3 Single Board Computer delivers new features for interactive application and many other embedded computing solutions requiring higher performance. It provides outstanding system performance through high-bandwidth interfaces such as PCI-Expressx16 or PCI-Express x8. The new graphic core can deliver significant graphics performance over previous Intel® platforms. **The 3307910 can deliver a perfect, realistic visual engine without requiring a separate graphic card.**

1.2 Specifications

- **Processor:** Intel® Core2 Duo(E6xxx and E4300)/PentiumD/Pentium4/CeleronD
- **North Bridge:** Intel® 82945G
- **South Bridge:** Intel® 82801GR(ICH7R)
- **CPU Socket:** LGA775
- **FSB:** 533MHz/800/1066MHz

Notice: For 1066Mhz FSB speed of Intel processor. The 3307910 only support Pentium4 Extreme Edition

- **BIOS:** Phoenix AwardBIOS Rev.6.00
- **System Memory:** Support DD2-400/533/667 memory and up to 4GB.

* Due to standard PC architecture, a certain amount of memory is reserved for system usage and therefore the actual memory size is less than the stated amount.

- **IDE Interface:** One IDE connector and up to four devices, Ultra DMA 100 supported
- **FDD Interface:** Supports up to 2 drives
- **Serial Ports:** Two 16550 UARTs ports with 16 byte as two RS232.
- **Parallel Ports:** One parallel port with ECP/EPP/SPP supported
- **VGA Controller:**
Chipset Integrated VGA Controller and Supports up to 2048x1536 at 75 Hz resolution on non-interlaced CRT monitors
- **Ethernet:** Intel® Pro/1000 LAN 82573E/V-(PCI-E LAN Chip)
- **SATAII:** Four Channel and support the maximum data transfer rate could up to 300MB/s and **support SATA RAID 0/1/5**
- **USB Interface:** 4 USB ports; USB Spec. Rev. 2.0 compliant.
- **Hardware Monitoring:** Winbond W83627HG-AW

detection of CPU temperature, System temperature, Power failure and Fan speed.

- **Watchdog Timer:**Generates the system reset. Software programmable time interval and hardware reset only.256 **Level(1~255 Seconds)**
- **Dimensions:**338.56 mmx126.39mm(6 Layer)

➤ **Environmental:**

Operating temperature	0 degrees to 60 degrees(Depend on CPU)
CPU Relative Humidity	95%

NOTE: Specifications are subject to change without notice.

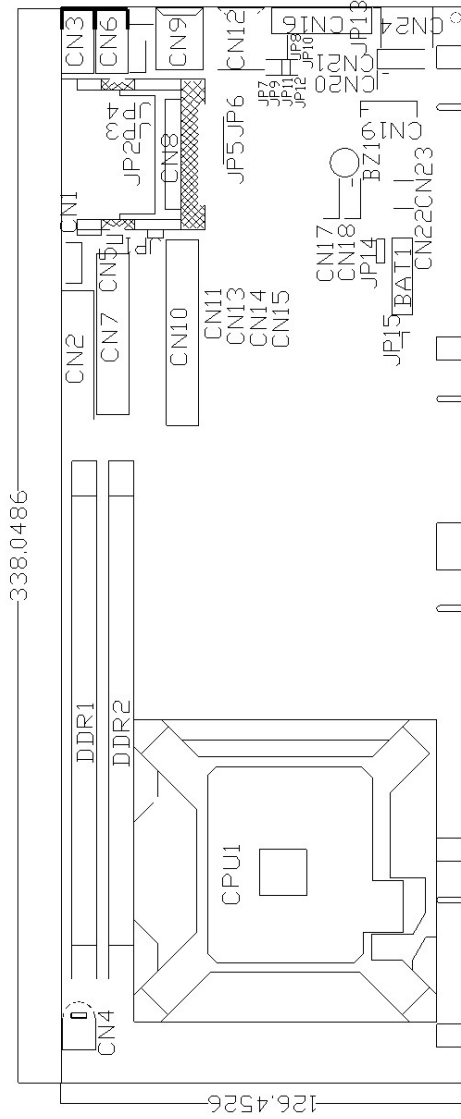
1.3 Utilities Supported

- Intel® 945G Utility and Drivers
- Ethernet Utility and Drivers
- VGA Drivers
- Audio Drivers

1.4 Ordering information

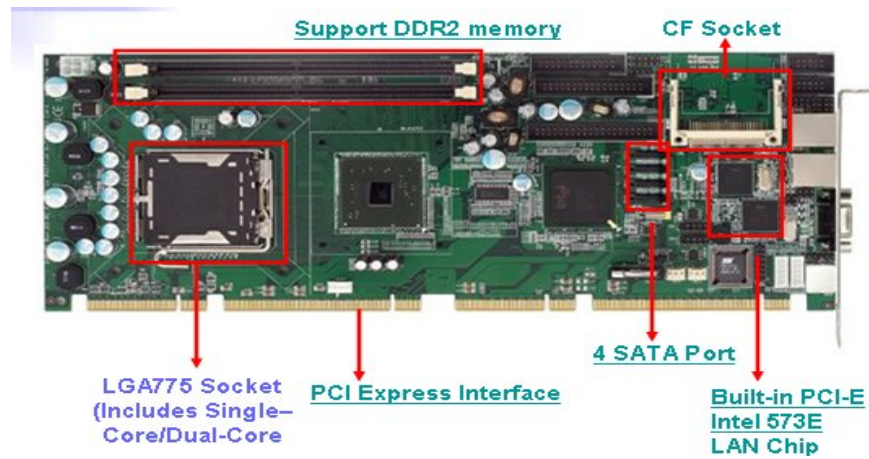
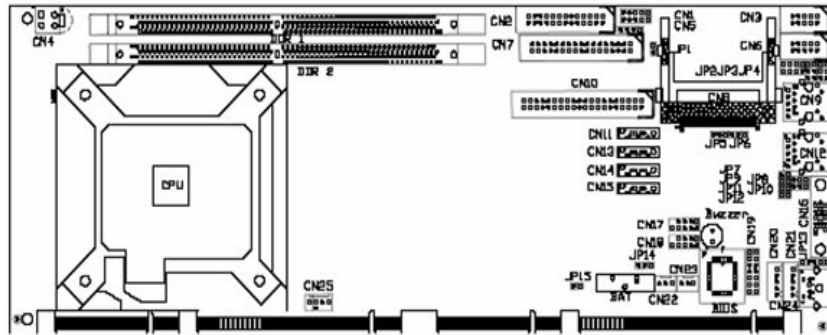
Model number	Description
3307910A	PCI-E LAN Chipx2 (Intel573E/V/L)
3307910B	PCI-E LAN Chipx1 (Intel573E/V/L)
3307910C	10/100Mbps(Intel 82562)

1.5 Board Dimensions



Chapter 2 Jumpers and Connectors

2.1 Board Layout



2.2 Jumper Settings



Followed as below detailed description for Jumper setting

Jumper	Description	Jumper setting
JP1	Reserved	
JP2	RS232/RS422/RS485 Setting	RS232 Short 1-2 (Default) RS422 Short 3-4,7-8 RS485: Short 5-6, 7-8
JP3		RS232 Short 3-5,4-6 (Default) RS422 Short 1-3,2-4 RS485: Short 1-3,2-4
JP4		RS232 Short 3-5,4-6 (Default) RS422 Short 1-3,2-4 RS485: Short 1-3,2-4
JP5	Compact Flash Setting	CF Master Short 2-3 (Default) CF Slave Short 1-2
JP6	Compact Flash Voltage Setting	3.3V Short 1-2 (Default) +5V Short 2-3
JP8	The LED for LAN2 Speed	
JP10	The LED for LAN1 Speed	
JP11	The Link/Active LED for LAN2	
JP12	The LinkActive LED for LAN1	
JP13	IrDA	
JP14	Clear CMOS Jumper	Short 1-2(Default) Short 2-3 for Clear CMOS
JP15	Reserved	


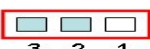
2.2.1 COM2 RS232/422/485 Settings: JP2, JP3,JP4

COM2	JP2	JP3	JP4
RS-232 (Default)	Short 1-2	Short 3-5,4-6	Short 3-5,4-6
RS-422	Short 3-4,7-8	Short 1-3,2-4	Short 1-3,2-4
RS-485	Short 5-6,7-8	Short 1-3,2-4	Short 1-3,2-4

2.2.2 CompactFlash Setting: JP5

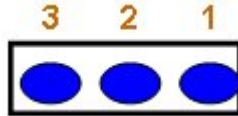
	Options	Settings
	Master	Short 2-3 (Default)
	Slave	Short 1-2

2.2.3 CompactFlash Voltage Setting: JP6

	Options	Settings
	3.3V	Short 1-2 (Default)
	5V	Short 2-3

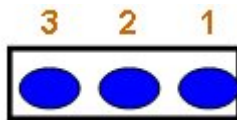
2.2.4 LAN2 Speed Setting: JP8

Options	Settings
Pin1	100,Low Active
Pin2	3.3V
Pin3	Gigabit,Low Active



2.2.5 LAN1 Speed Setting: JP10

Options	Settings
Pin1	100,Low Active
Pin2	3.3V
Pin3	Gigabit,Low Active



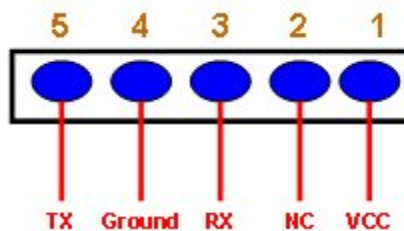
2.2.6 The Active LED for LAN2 : JP11

Options	Settings
Pin1	3.3V
Pin2	Link active


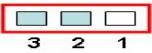
2.2.7 The Active LED for LAN1: JP12

Options	Settings
Pin1	3.3V
Pin2	Link active

2.2.8 IrDA connector: JP13



2.2.9 CMOS Clear Jumper: JP14

	Options	Settings
 3 2 1	Normal	Short 1-2 (Default)
 3 2 1	Clear CMOS	Short 2-3

2.2.10 Processor List for Intel Core2 Duo CPU

Proc No	Clock Speed	Cache	FSB	Socket	Processor Generation	Note
E6700	2.6	4M	1066	LGA775	Conroe	
E6600	2.44	4M	1066	LGA775	Conroe	
E6400	2.133	2M	1066	LGA775	Conroe	Embedded
E6300	1.866	2M	1066	LGA775	Conroe	
E4300	1.8	2M	800	LGA775	Conroe	Embedded

2.3 Connectors

All of the connectors allows you to connect keyboard, Mouse, Hard Drive, Floppy Drive on the CPU card. Ensure that all connectors are in place and firmly attached. The following table lists the function of each connector on the **3307910**.

Connectors	Label	Connectors	Label
Audio Output	CN1	VGA Port	CN16
Parllal Port	CN2	USB 3,4	CN17
COM1 Port	CN3	USB 1,2	CN18
ATX 4 Pin 12V In	CN4	Front Panel	CN19
CD AUX In	CN5	Mouse Connector	CN20
COM2 Port	CN6	Keyboard Connector	CN21
Floppy Port	CN7	System FAN	CN22
CompactFlash Socket	CN8	System FAN	CN23
RJ-45 Port2	CN9	PS/2 Port	CN24
P-ATA IDE Port	CN10	CPU FAN	CN25
S-ATA Port 4	CN11	LGA775 Socket	CPU1
RJ-45 Port1	CN12		
S-ATA Port 3	CN13		
S-ATA Port 2	CN14		
S-ATA Port 1	CN15		

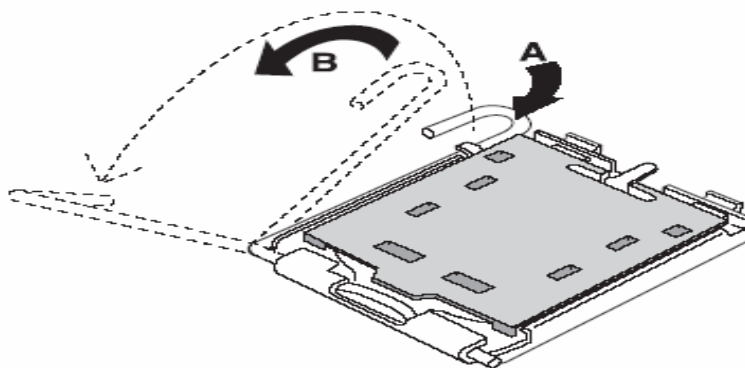
Chapter 3 Installation

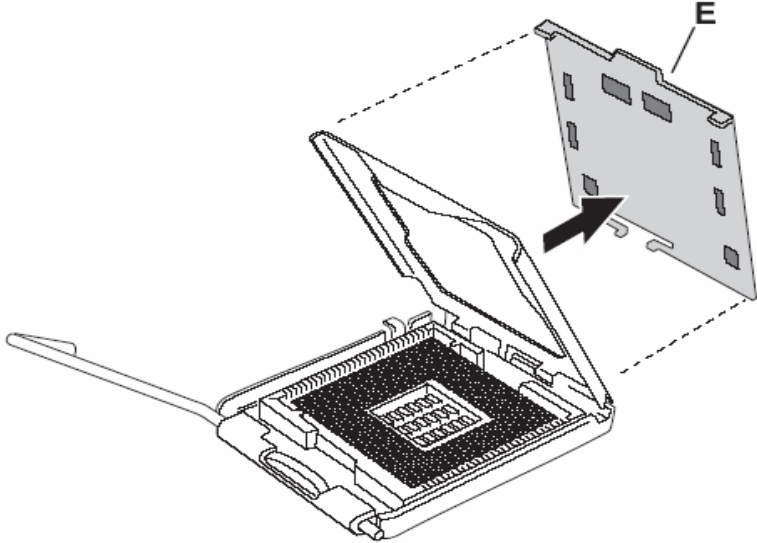
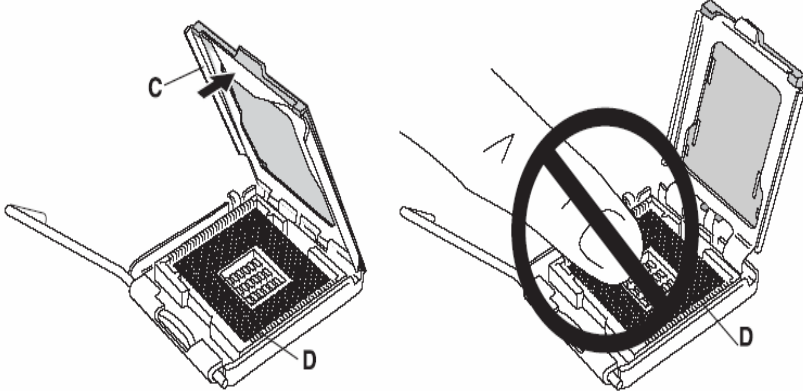
Before installing the processor, Please see the Intel website and obtain more information

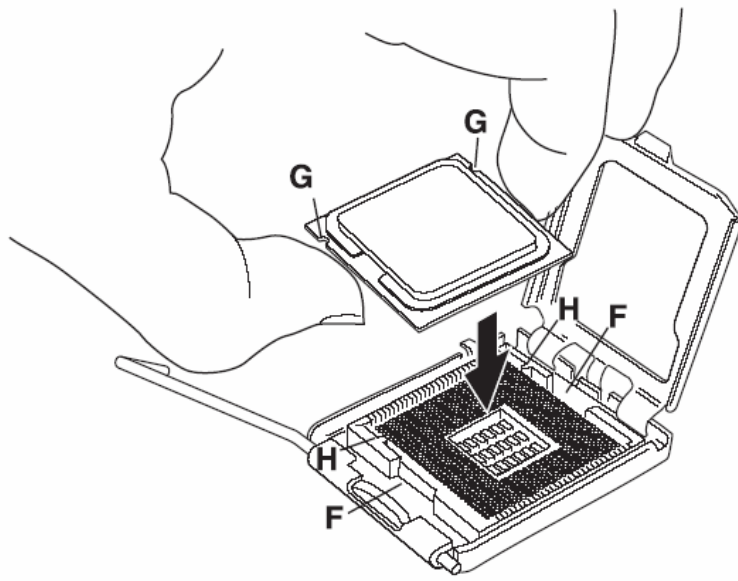
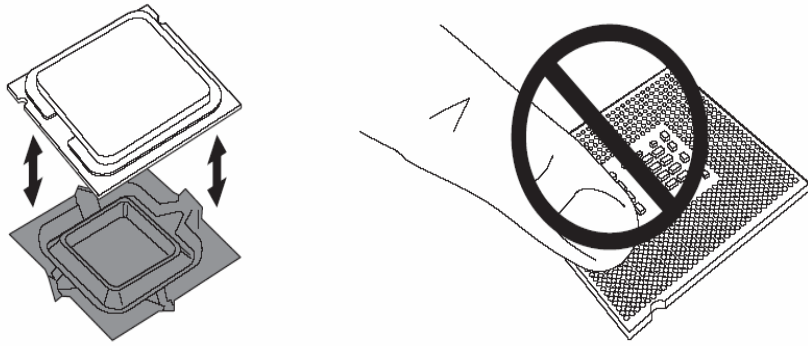
<http://www.intel.com>.

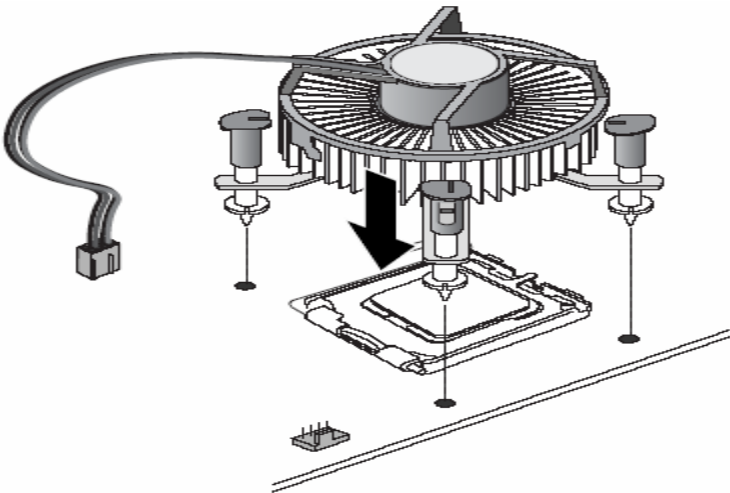
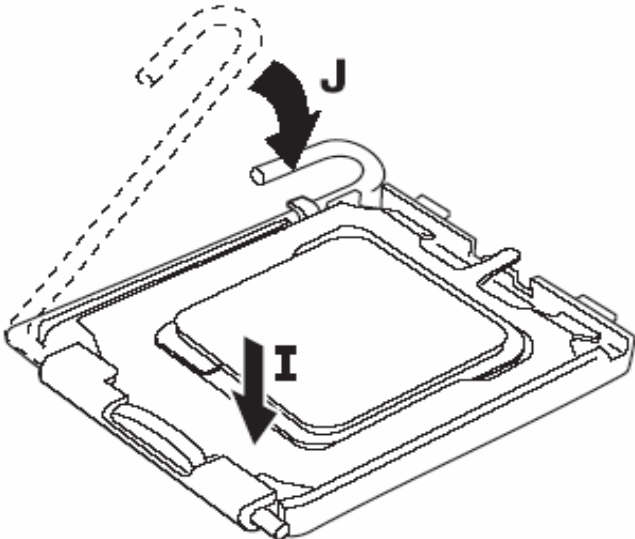
3.1 CPU Installation

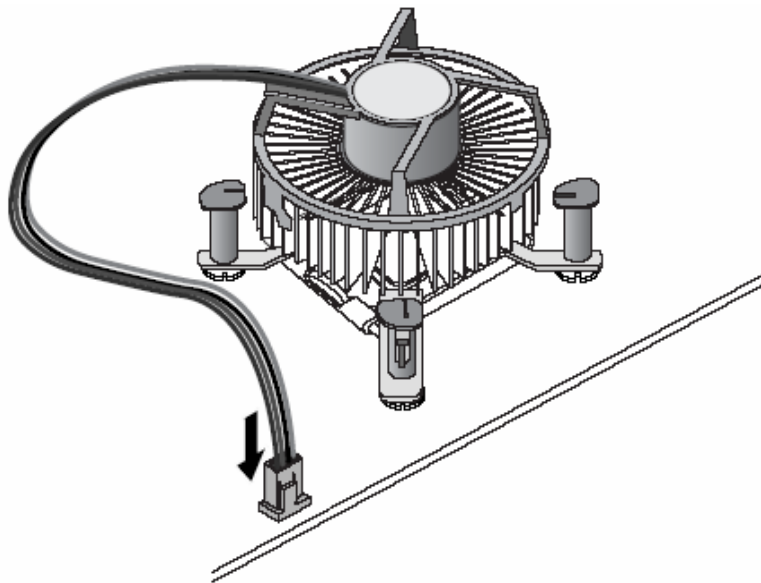
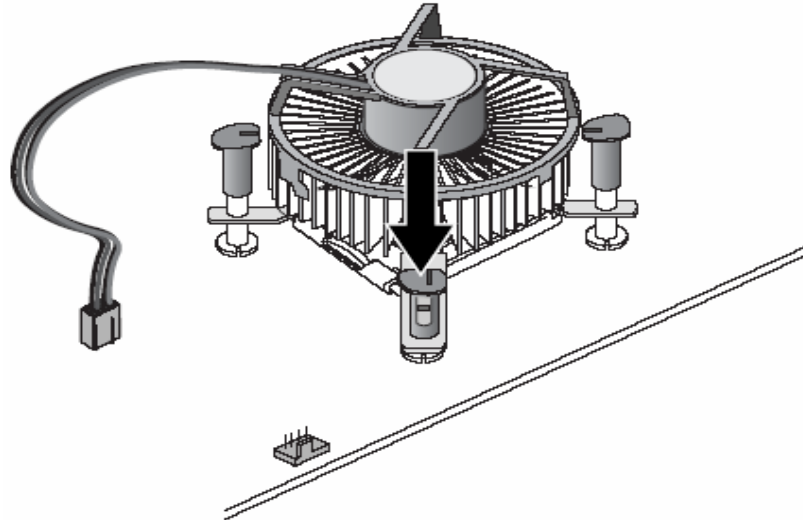
The LGA775 processor socket comes with a lever to protect the processor. Please see below. Follow the pictures and place the processor into CPU socket.

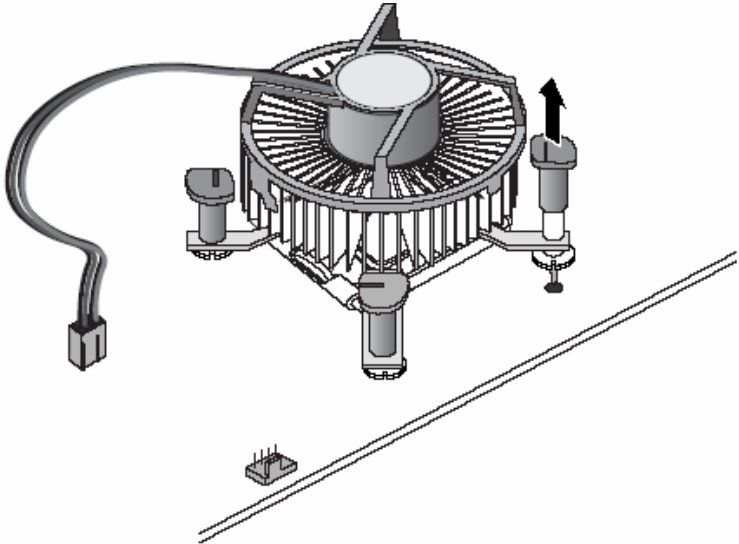
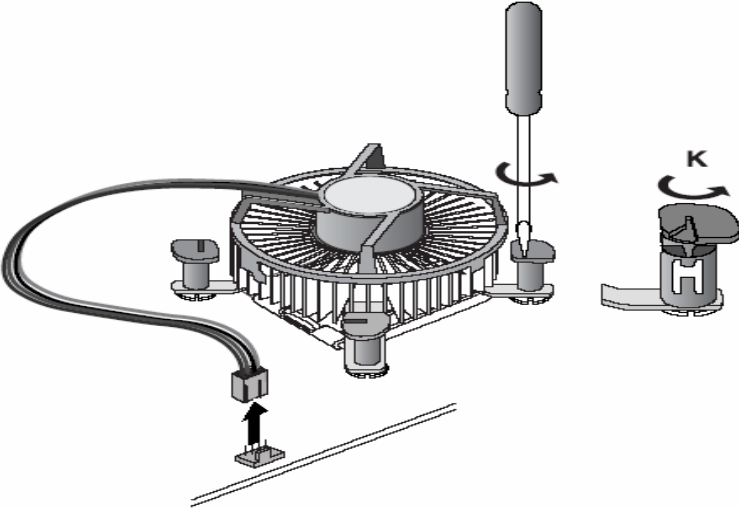


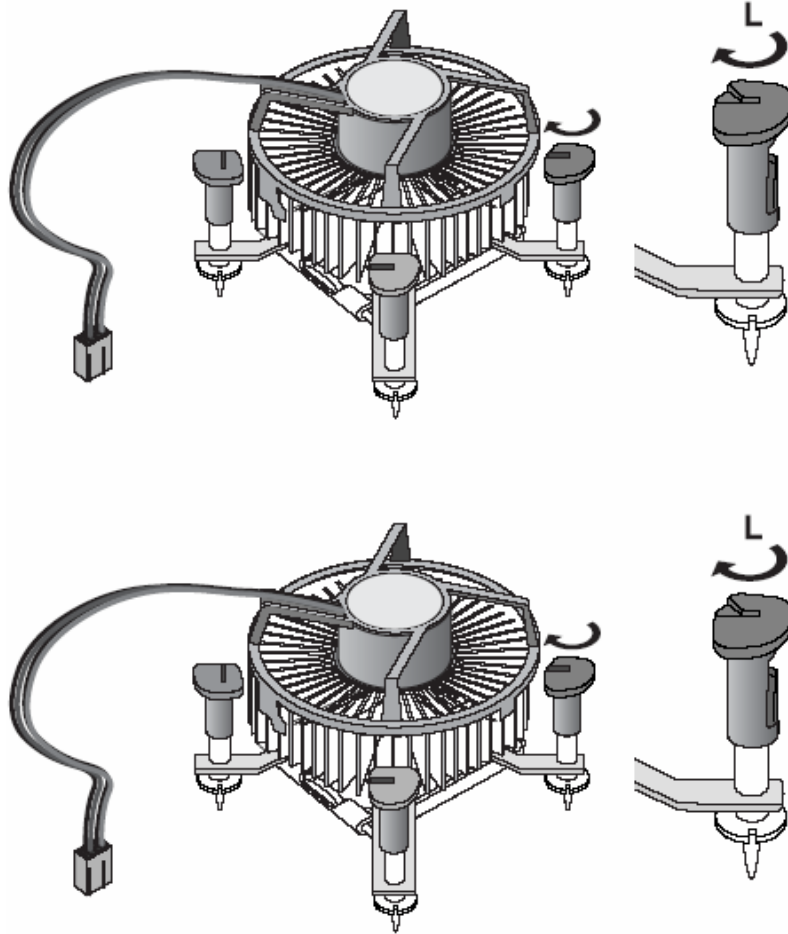






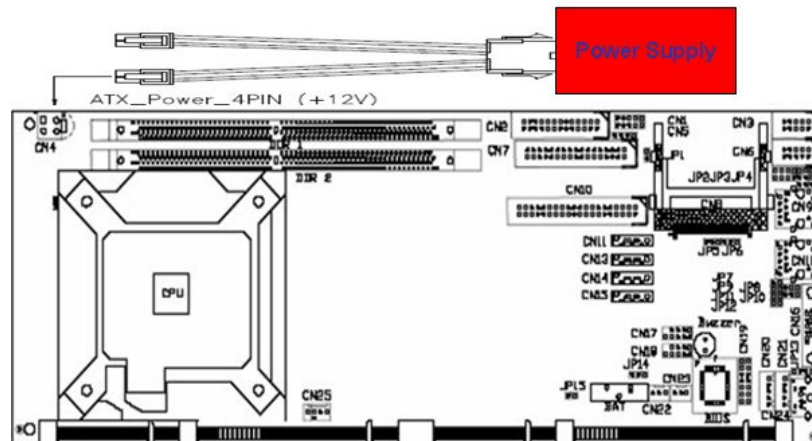






3.2 Installing ATX Power Supply

System power is provided to the 3307910 PICMG13 CPU card by CN4



3.3 Installing the Memory

The 3307910 PICMG1.3 SBC CPU Card built-in two 240-pin DDR2 DIMM Slot and support the maximum memory capacity could up to 4GB.If you want to know what is difference between DDR and DDR2.See below picture



DDR-Slot: 184 Pins, 2.5 V



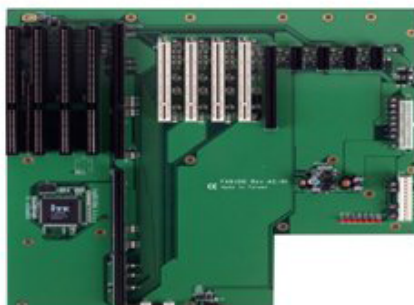
DDR2 Slot: 240 Pins, 1.8 V

3.4 Backplane Installation

3.4.1 Notice for 3307910

3307910 belongs to a newer architecture for Single Board computers, so you need to use a PICMG1.3 Backplane.

1108070



PICMG1.3 Backplane

3.4.2 How to install the PICMG1.3 backplane for 3307910

The 3307910 only defined one x16 PCI Express link on the connectors A/B (This x16 PCIe link is designed to support PCI Express video/graphics cards on an SHB Express™),

If the customer wants to use the 3307910 for other brand names of PICMG1.3 backplane, please double check the backplane could support PCI-Express x4 or PCI-Express x1

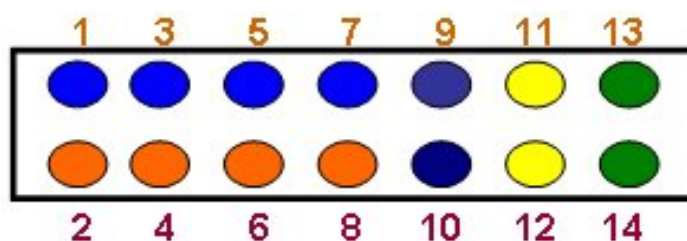
3307910 LGA775 SBC User Manual

(3307910 only support one PCI-Expressx4 and four PCI-Expressx1)

Chapter 4 Hardware Description

This chapter provides more detailed information for the 3307910 PICMG1.3 Single Board Computer

4.1 General Output Connector: CN19



■ Power Switch

Pins 9,10 was designed for Power botton function.

■ Power LED

The Pin1,3,5,7 was defined for Power LED.

■ External Speaker and Internal Buzzer Connector

Pins 2, 4, 6, 8 connect to the case-mounted speaker unit or internal buzzer.

■ System Reset Switch

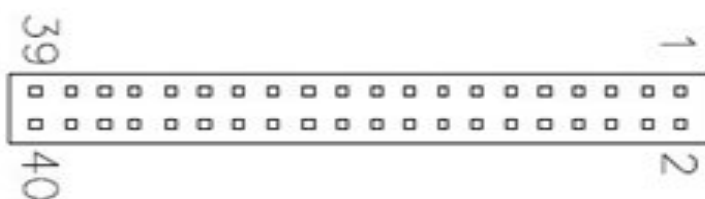
Pins 11,12 was designed for Hardware Reset function

■ HDD Activity LED

This connector extends to the hard drive activity LED on the control panel. This LED will flash when the HDD is being accessed. Pins 13 & 14

4.2 Enhanced IDE Interface connector: CN10

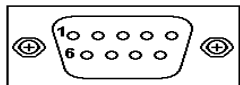
The **3307910** includes a PCI bus enhanced IDE controller that can support master/slave mode and post write transaction mechanisms with 64-byte buffer, and master data transaction.



Pin	Description	Pin	Description	Pin	Description
1	Reset #	2	GND	3	Data 7
4	Data 8	5	Data 6	6	Data 9
7	Data 5	8	Data 10	9	Data 4
10	Data 11	11	Data 3	12	Data 12
13	Data 2	14	Data 13	15	Data 1
16	Data 14	17	Data 0	18	Data 16
19	GND	20	N/C	21	N/C
22	GND	23	IOW #	24	GND
25	IOR #	26	GND	27	IOCHRDY
28	N/C	29	N/C	30	GND-Default
31	Interrupt	32	N/C	33	SA1
34	N/C	35	SA0	36	SA2
37	HDC CS0 #	38	HDC CSI #	39	HDD Active #
40	GND				

4.3 Display interface-CN16

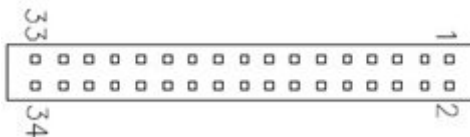
The GMCH has an integrated 350 MHz RAMDAC that can directly drive a progressive scan analog monitor up to a resolution of 2048x1536 at 75 Hz.



Pin	Signal	Pin	Signal	Pin	Signal
1	Red	2	Green	3	Blue
4	N/A	5	GND	6	AGND
7	AGND	8	AGND	9	+5V
10	GND	11	N/A	12	DDC DAT
13	Horizontal Sync	14	Vertical Sync	15	DDC CLK

4.4 Floppy Disk Connector-CN7

The 3307910 provides a 34-pin header type connector and supports two floppy drives. The floppy drives may be any one of the following types: 5.25" 360KB/1.2MB and 3.5" 720KB/1.44MB/2.88MB.



Pin	Description	Pin	Description	Pin	Description
-----	-------------	-----	-------------	-----	-------------

1	GND	2	Reduce write Current	3	GND
4	N/C	5	GND	6	N/C
7	GND	8	Index #	9	GND
10	Motor enable A #	11	GND	12	Drive Select B #
13	GND	14	Drive select A #	15	GND
16	Motor enable B #	17	GND	18	Direction #
19	GND	20	STEP #	21	GND
22	Write data #	23	GND	24	Write gate #
25	GND	26	Track #	27	GND
28	Write protect #	29	GND	30	Read data #
31	GND	32	Side 1 select #	33	GND
34	Disk change #				

4.5 Parallel Port Interface:CN2

The **CN2** is a multi-mode parallel port able to support:

- **Standard mode:** IBM PC/XT, PC/AT and PS/2™ compatible with bi-directional parallel port
- **Enhanced mode:** Enhance parallel port (EPP) compatible with EPP 1.7 and EPP 1.9 (IEEE 1284 compliant)
- **High speed mode:** Microsoft and Hewlett Packard extended capabilities port (ECP) IEEE 1284 compliant

The address select of the onboard parallel port in LPT1 (3BCH) or disabled is done by BIOS CMOS setup.

Pin	Description	Pin	Description
1	Strobe #	14	Auto Form Feed #
2	Data 0	15	Error #
3	Data 1	16	Initialize #
4	Data 2	17	Printer Select In #
5	Data 3	18	GND
6	Data 4	19	GND
7	Data 5	20	GND
8	Data 6	21	GND
9	Data 7	22	GND
10	Acknowledge #	23	GND
11	Busy	24	GND
12	Paper Empty #	25	GND
13	Printer Select	26	

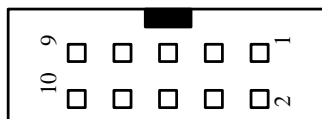
4.6 Serial Port Interface

The serial interface onboard **3307910** consists of COM1 port (**CN3**) and COM2 (**CN6**) supports RS-232/422/485 function. It

uses two 10-pin connectors for COM1 (**CN3**) and COM2 (**CN6**). Interrupt Requests on COM1 and COM2 are selected via IRQ4 and IRQ3 respectively. Additionally, both ports can be enabled or disabled via BIOS setting.

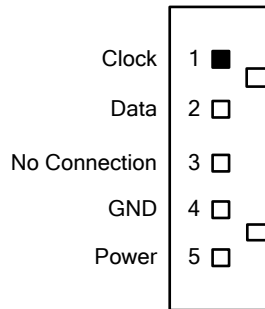
RS-232/422/485 PIN Assignment:

		Description		
		RS-232	RS-422 (CN6)	RS-485 (CN6)
1	1	Data Carrier Delect(DCD)	TX-	Data -
2	6	Data Set Ready(DSR)	NC	NC
3	2	Receive Date(RXD)	TX+	Data +
4	7	Request to Send(RTS)	NC	NC
5	3	Transmit Data(TXD)	RX+	NC
6	8	Clear to Send(CTS)	NC	NC
7	4	Data Terminal Ready (DTR)	RX-	NC
8	9	Ring Indicator(RI)	NC	NC
9	5	GND	GND	GND
10	X	NC	NC	NC



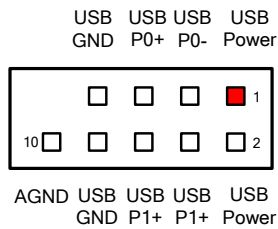
4.7 Keyboard and PS/2 Mouse Connectors

The **3307910** provides a keyboard **CN20** and Mouse **CN21** with 5-Pin connector



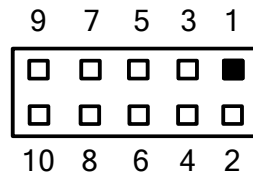
4.8 USB Connector

The Universal Serial Bus (USB) connector could be used USB interface. **CN17/CN18**.



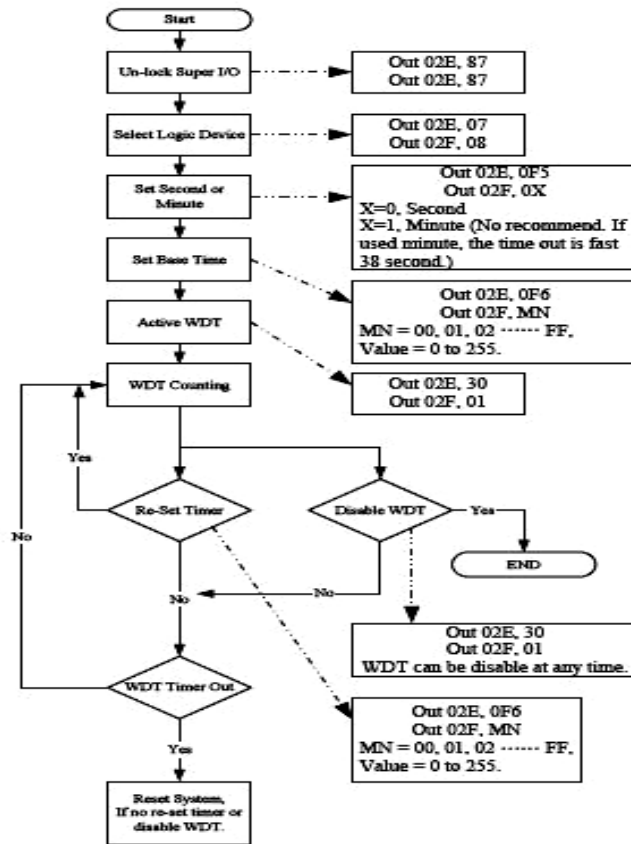
4.9 Audio Output connector: CN1

Pin	Signal	Pin	Signal
1	MIC-IN	2	GND
3	Line In L	4	GND
5	Line In R	6	GND
7	Audio Out L	8	GND
9	Audio Out R	10	GND



Appendix A Watchdog Timer

Please follow the below WDT process for setup of the WDT function.



Appendix B PCI IRQ Routing

PICMG PCI IRQ Routing

Device	ID	Slot	Int
PCI Slot 0	31	0	BCDA
PCI Slot 1	30	1	CDAB
PCI Slot 2	29	2	DABC
PCI Slot 3	28	3	ABCD

On Board Device IRQ Routing

Device	ID	Slot	Int
82562	24	NA	NA

Appendix C Memory Mapping

		Intel® 82945G, 82945P	Intel® 82945GZ, 82945PL	
FFFF_FFFFh	High BIOS	4 GB	2 GB	
FEE0_0000h	DMI interface (subtractive decode)	4 GB - 2 MB	2 GB - 2 MB	
FEF0_0000h	FSB interrupts	4 GB - 17 MB	2 GB - 17 MB	
FEE0_0000h	DMI interface (subtractive decode)	4 GB - 18 MB	2 GB - 18 MB	Optional HSEG FEDA_0000h to FEDB_FFFFh
FED0_0000h	Local (processor) APIC	4 GB - 19 MB	2 GB - 19 MB	
FEC8_0000h	IO APIC			
FEC0_0000h	DMI interface (subtractive decode)	4 GB - 20 MB	2 GB - 20 MB	
F000_0000h	PCI Express* Configuration Space	4 GB - 256 MB	2 GB - 256 MB	
		Possible address range (Not ensured)		
E000_0000h	DMI interface (subtractive decode)	4 GB - 512 MB	2 GB - 512 MB	
		Programmable windows, graphics ranges, PCI Express* Port could be here		
		TOLUD	TOLUD	

Any advice or comments about our products and service, or anything we can help you with please don't hesitate to contact with us. We will do our best to support your products, projects and business.



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