

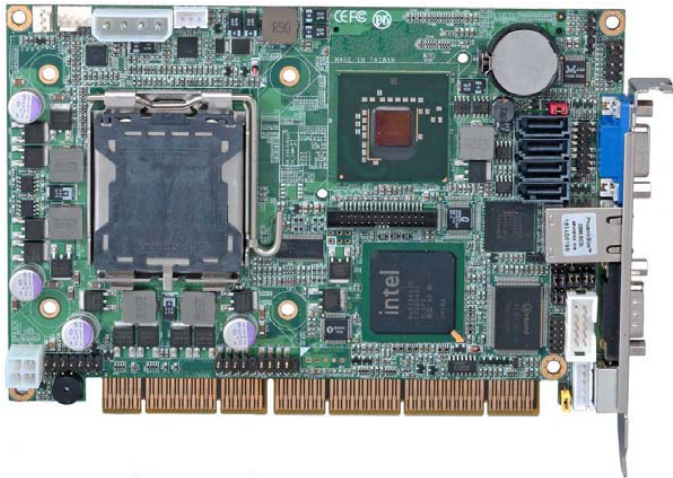


integration with integrity

3308240 User's Manual

Half-Size PISA SBC

Version 1.0



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## Packing List:

Please check the package material before you install the system.

### Hardware:

3308240 Single Board Computer x 1

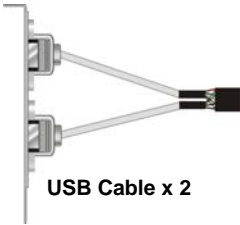
### Cable Kit:



PS/2 Keyboard & Mouse Cable



4-pin to 3-pin ATX Cable x 1



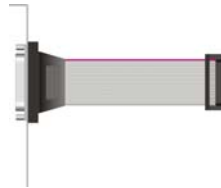
USB Cable x 2



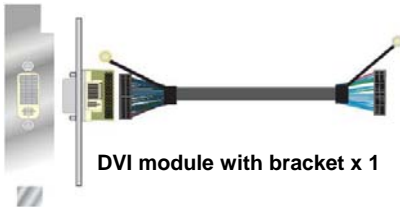
SATA Cable x 2



Audio Port Cable x 1



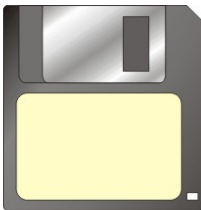
DB9 Cable x 1



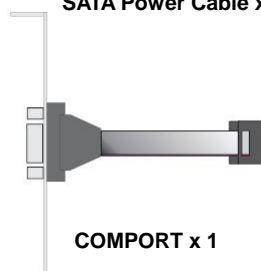
DVI module with bracket x 1



SATA Power Cable x 1



RAID driver Disk for Windows XP  
and Windows Server 2003



COMPORT x 1

### Printed Matters:

Driver CD x 1 (Including User's Manual)

<b>Chapter 1 &lt;Introduction&gt;</b> .....	<b>6</b>
1.1 <Product Overview> .....	6
1.2 <Product Specification> .....	7
1.3 < Mechanical Drawing > .....	9
1.4 <Block Diagram> .....	11
<b>Chapter 2 &lt;Hardware Setup&gt;</b> .....	<b>13</b>
2.1.1 <Connector Location> .....	13
2.2 <Connector Reference>.....	15
2.2.1 <Internal Connector> .....	15
2.2.2 <External Connector>.....	15
2.3 <Jumper Reference>.....	16
2.4 <CPU and Memory Setup> .....	18
2.4.1 <CPU installation> .....	18
2.4.2 <Memory Setup> .....	19
2.5 <CMOS Setup> .....	20
2.6 <Serial ATA interface>.....	21
2.7 <LAN Interface>.....	21
2.8.1 <Analog VGA Interface> .....	22
2.8.2 <LVDS Display> (3308240A only) .....	23
2.9 <Onboard Audio Interface>.....	28
2.10 <USB2.0 Interface> .....	29
2.11 <Serial Port Jumper Setting >.....	31
2.12 <Power and Fan Installation> .....	32
2.12.1 <Power connectors>.....	32
2.12.2 <Fan Connectors>.....	33
2.14 <Switch and Indicator>.....	35

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<b>Appendix B &lt;System Resources&gt;</b> .....	<b>38</b>
<b>Appendix C &lt;Programming GPIO's&gt;</b> .....	<b>42</b>
<b>Appendix D &lt;Watch Dog timer Setting &gt;</b> .....	<b>43</b>
<b>Contact Information</b> .....	<b>44</b>

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# Chapter 1 <Introduction>

## 1.1 <Product Overview>

The **3308240** is an all-in-one single board computer with PISA bus supporting Intel Core2 Quad/ Core 2 Duo processor for 800/1066/1333 MHz front side bus, Intel Q35 and ICH9DO chipset, integrated GMA3100 graphics, DDR2 SO-DIMM memory, Realtek ALC888 HD Audio, Serial ATA and one Intel 82573L Gigabit LAN.

### Intel LGA775 Processor

The board supports Intel Core 2 Quad/ Core 2 Duo processor with 800/1066/1333 MHz front side bus, 8MB L2 cache, to provide more powerful performance than before.

### New features for Intel Q35 chipset

The board integrates Intel Q35 and ICH9DO chipset, to provide new supports Intel GMA3100 graphics, DDR2 667/800 memory, built-in high speed mass storage interface of serial ATA, HD Audio with 2 channels surrounding sound.

### All in One multimedia solution

Based on Intel Q35 and ICH9DO chipset, the board provides high performance onboard graphics, 24-bit Dual channel LVDS interface or DVI and 2 channels HD Audio to meet the every requirement of the multimedia application.

## 1.2 <Product Specification>

### General Specification

Form Factor	Half size PISA bus CPU card
CPU	Support Intel® Core 2 Quad/ Core 2 Duo processor Package type: LGA775 Front side bus: 800/1066/1333MHz
Memory	DDRII 667/800 MHz SO-DIMM up to 2GB
Chipset	Intel® Q35 and ICH9DO
BIOS	Phoenix-Award v6.00PG 8Mb SPI flash BIOS
Green Function	Power saving mode includes doze, standby and suspend modes. ACPI version 1.0 and APM version 1.2 compliant
Watchdog Timer	System reset programmable watchdog timer with 1 ~ 255 sec./min. of timeout value
Real Time Clock	Chipset integrated RTC with onboard lithium battery
Serial ATA	Intel® ICH9DO built-in 4 x Serial ATAII interface up to 300MB/s Support RAID 0, 1, 5, 10 and Intel Matrix Storage Technology.

### Multi-I/O Port

Chipset	Intel® ICH9DO with Winbond® W83627DHG controller
Serial Port	One RS232 and one jumper selectable RS232/422/485/IR
USB Port	4 x Hi-Speed USB 2.0 ports with 480Mbps of transfer rate
IrDA Port	One IrDA compliant Infrared interface supports SIR
K/B & Mouse	PS/2 keyboard and mouse port on bracket
GPIO	One 12-pin Digital I/O connector with 8-bit programmable
Smart Fan	One CPU fan connectors for fan speed controllable

### VGA Display Interface

Chipset	Intel® Q35 & ICH9DO
Memory	Up to 384MB shared with system memory
Display Type	CRT, LCD monitor with analog display, DVI or LVDS
Connector	External DB15 female connector on bracket Onboard 40-Pin LVDS connector (3308240A Only) Onboard 26-Pin DVI connector (3308240 Only)

### Ethernet Interface

Chipset	Intel 82573L Gigabit Ethernet controller
Type	Triple speed 10/100/1000Base-T auto-switching Fast Ethernet Full duplex, IEEE802.3U compliant
Connector	External one RJ45 connector with LED on bracket

### ISA Interface

ISA Bridge	Winbond W83628GA & W83629GA
Function	I/O & IRQ supported only, no support DMA & bus mastering

## Audio Interface

Chipset	Intel® ICH9DO with Realtek ALC888 HD Audio Intel High Definition Audio compliance
Interface	2 channels sound output
Connector	Internal 10-pin header for line-in/-out, MIC-in, 4-pin header for CD-IN

## Power and Environment

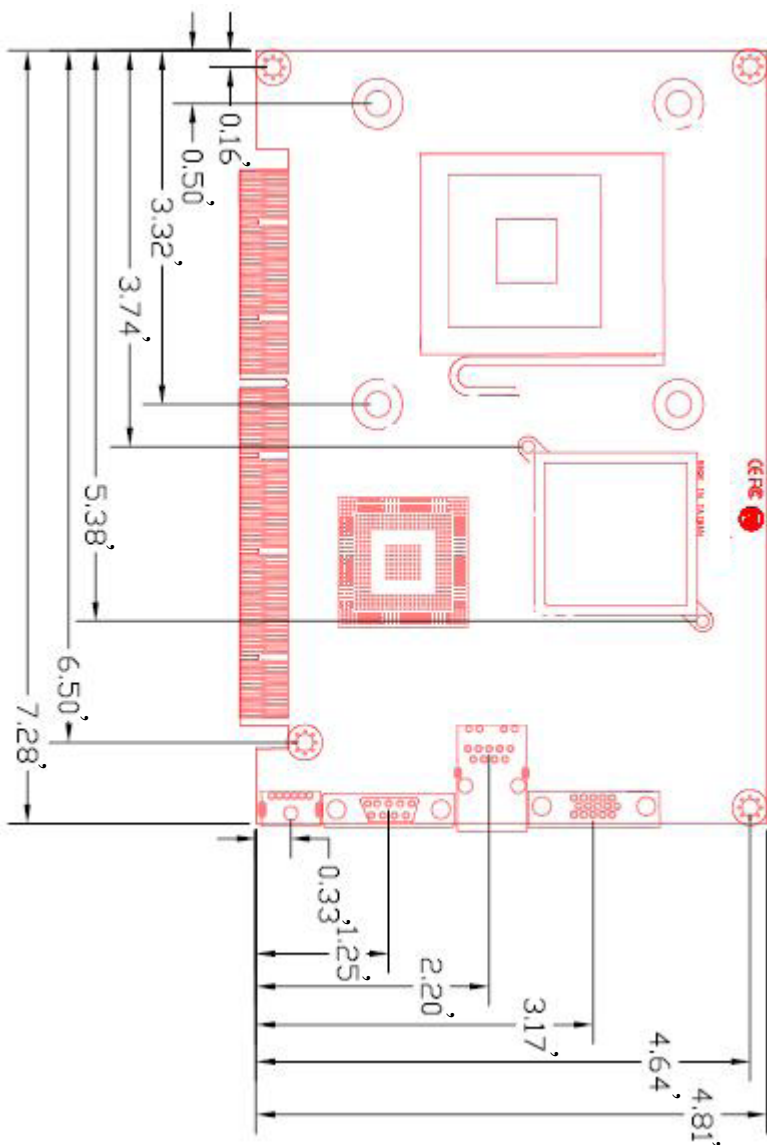
Power Requirement	+5V, +12V power required, optional 5USB for ATX
Dimension	185 (L) x 127 (H) mm
Temperature	Operating within 0 ~ 60°C (32 ~ 140°F) Storage within -20 ~ 85°C (-4 ~ 185°F)

## Ordering Code

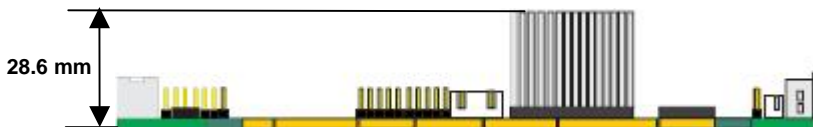
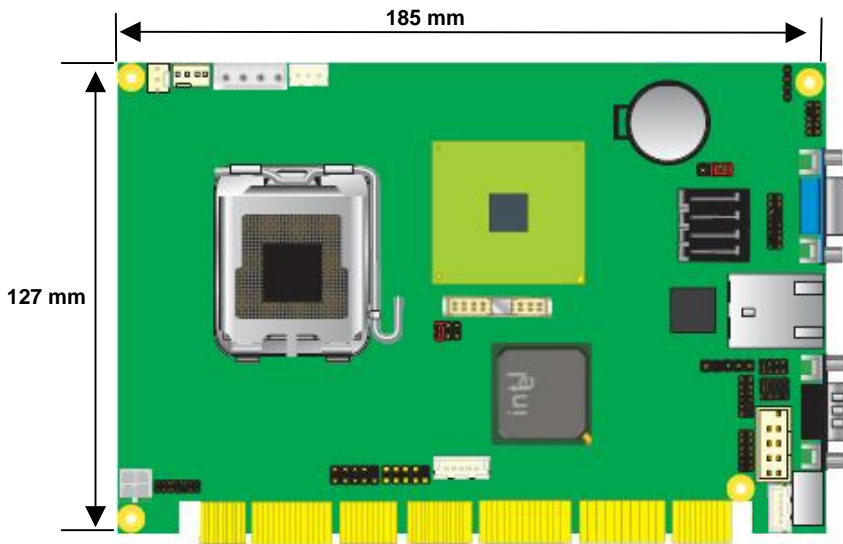
<b>3308240A</b>	Support Intel Core 2 Quad/Core 2 Duo processor Onboard VGA, Intel Gigabit LAN, 4 x USB2.0, 2 x serial port Realtek ALC888 HD Audio, 4 x SATA, 1 x IrDA, DVI Interface
<b>3308240B</b>	Support Intel Core 2 Quad/ Core 2 Duo processor Onboard VGA, Intel Gigabit LAN, 4 x USB2.0, 2 x serial port Realtek ALC888 HD Audio, 4 x SATA, 1 x IrDA, 18/24-bits LVDS Interface



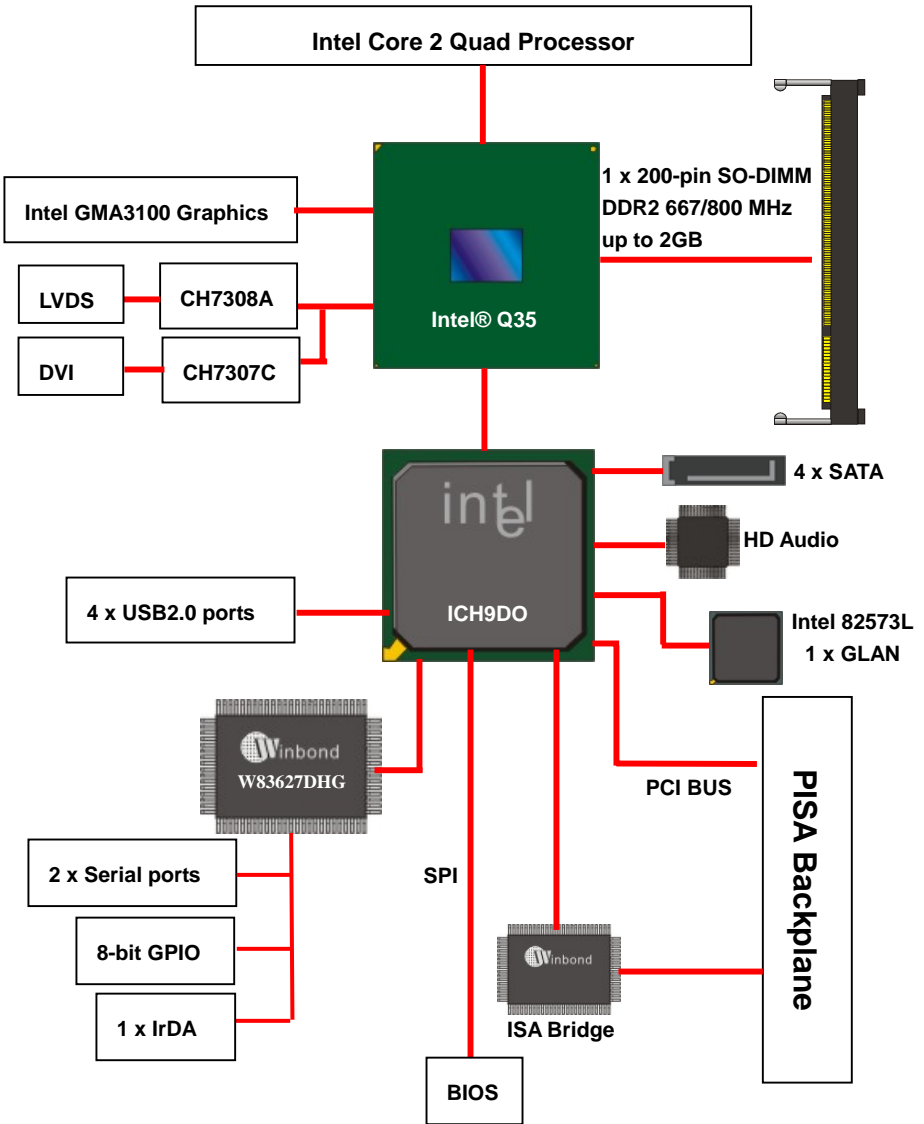
### 1.3 < Mechanical Drawing >



## <Motherboard Dimension>



## 1.4 <Block Diagram>

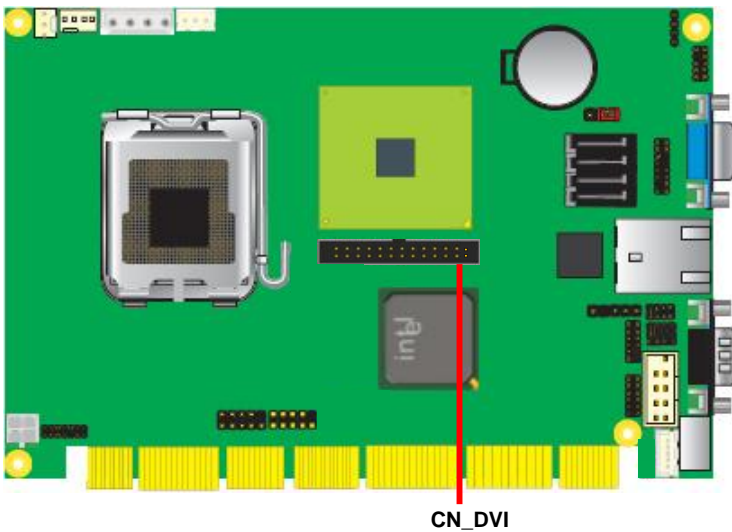
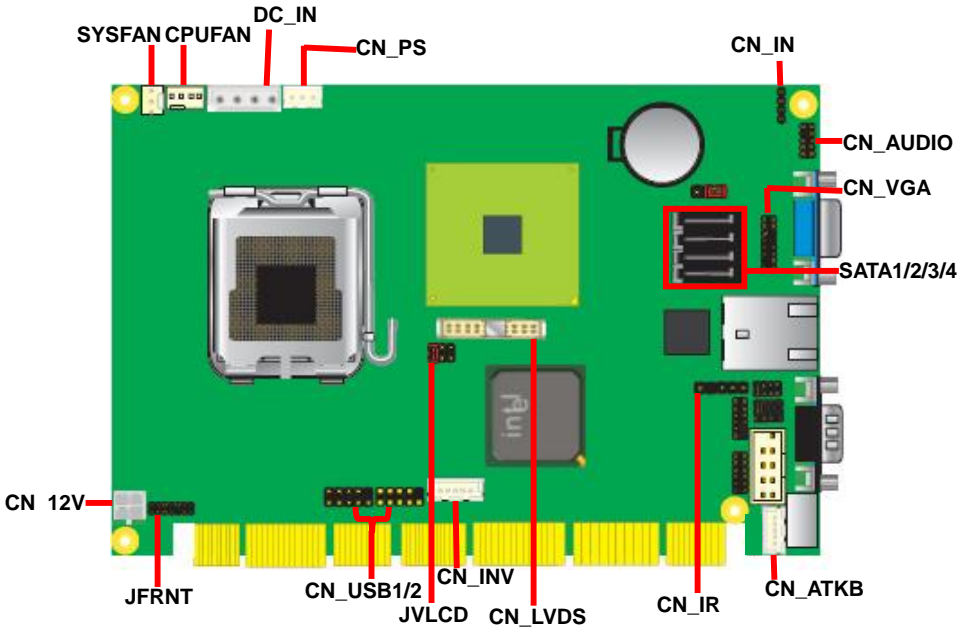


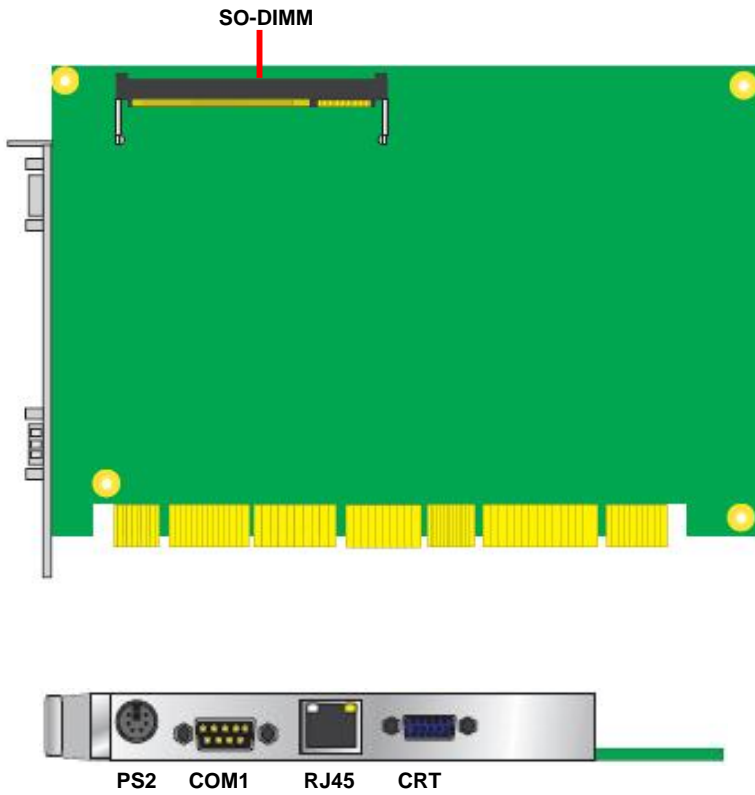
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# Chapter 2 <Hardware Setup>

## 2.1.1 <Connector Location>





## 2.2 <Connector Reference>

### 2.2.1 <Internal Connector>

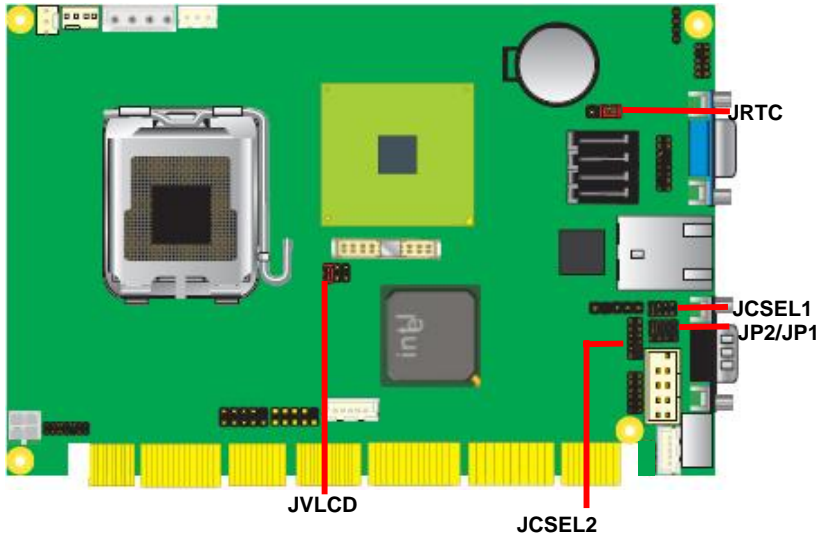
Connector	Function	Remark
DIMM	200 –pin DDR2 SDRAM 200-pin DDR2 SO-DIMM slot	Standard
S_ATA1/2/3/4	7-pin Serial ATA connector	Standard
DC_IN	4-pin AT power supply connector	Standard
CN_12V	4-pin +12V additional power supply connector	Standard
CN_PS	3-pin ATX function connector	Standard
CN_AUDIO	5 x 2-pin audio connector	Standard
CDIN	4-pin CD-ROM audio input connector	Standard
CN_DIO	6 x 2-pin digital I/O connector	Slim
CN_LVDS	20 x 2-pin LVDS connector	(3308240A)
CN_INV	5-pin LCD inverter connector	(3308240A)
CN_USB1/2	5 x 2-pin USB connector	Standard
CPUFAN	4-pin CPU cooler fan connector	Standard
SYSFAN	3-pin system cooler fan connector	Standard
CN_IR	5-pin IrDA connector	Standard
CN_ATKB	5-pin AT keyboard connector	Standard
CN_DVI	26-pin TMDS connector	(3308240B)
JFRNT	14-pin front panel switch/indicator connector	Standard
CN_COM2	10-pin serial port connector	Standard
CN_VGA	8 X 2 pin VGA connector (pitch=2.0mm)	Standard

### 2.2.2 <External Connector>

Connector	Function	Remark
CRT	DB15 VGA connector	Standard
RJ45	One RJ45 LAN connector	Standard
PS2	PS/2 keyboard and mouse connector	Standard
COM1	Serial port connector	Standard

## 2.3 <Jumper Reference>


Jumper	Function
JRTC	CMOS Operating/Clear Setting
JVLCD	LCD Panel Voltage Setting
JCSEL1/2	COM2 RS232/422/485/IR mode setting
JP1/JP2	COM PORT Voltage support






Jumper: **JP1 (COM 1)**

Type: onboard 3 x 2-pin header

Power Mode	JP1
Pin1 with 5V signal	1-3,4-6
Pin9 with 12V signal	2-4,3-5
Default setting: 3-5, 4-6	

Jumper: **JP2 (COM 2)**

Type: onboard 3 x 2-pin header

Power Mode	JP2
Pin1 with 5V signal	1-3,4-6
Pin9 with 12V signal	2-4,3-5
Default setting: 3-5, 4-6	

## 2.4 <CPU and Memory Setup>

### 2.4.1 <CPU installation>

**3308240** has a LGA775 CPU socket onboard; please check following steps to install the processor properly.

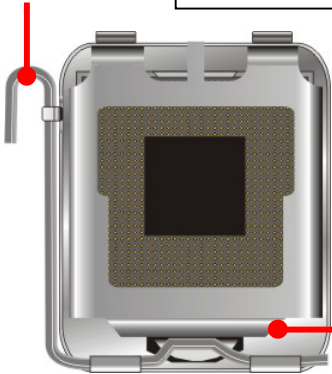
**Attention** If 3308240 needs RMA please Keep CPU socket cover on the CPU Socket.

**Warning** If CPU Socket internal Pin damage We could not provide warranty.



Intel® Core 2 Duo /Quad processor  
Package type: 775 pin PLGA  
L2 Cache: 8 MB  
FSB: 800/1066/1333MHz (266MHz x 4)  
Manufacturing: 65nm, 45nm  
Intel Hyper Threading Technology and  
Core 2 Duo /Quad supported

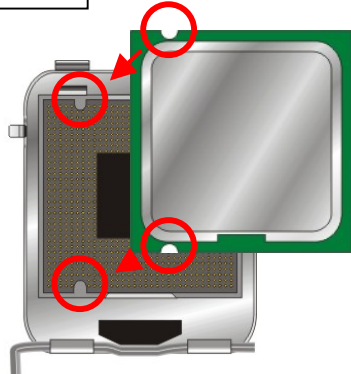
1. Lift this bar



2. Uncover this plate



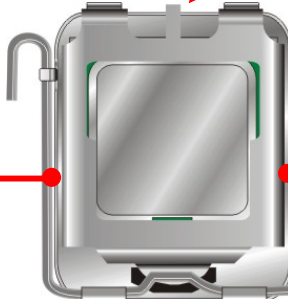
Check point



3. Place the CPU on the top of the pins



4. Lock this bar



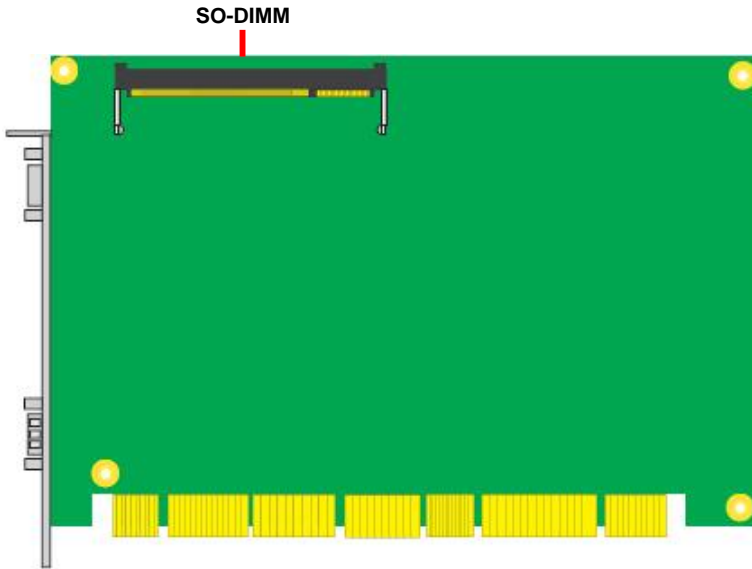
3. Cover this plate

**Notice:** Please place the CPU on the pins tenderly to avoid bending the pins

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### 2.4.2 <Memory Setup>

**3308240** has one 200-pin DDR2 SO-DIMM support up to 2GB of memory capacity. The memory frequency supports 667/800 MHz. Only Non-ECC memory is supported.



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## 2.5 <CMOS Setup>

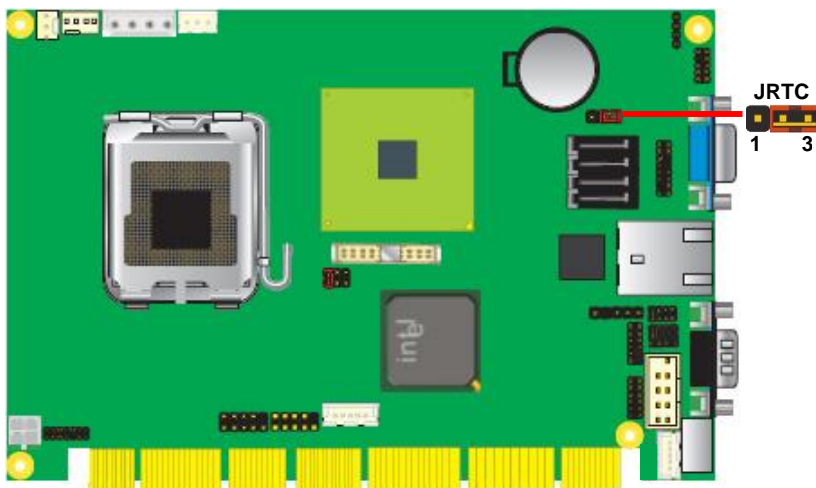
The board's data of CMOS can be setting in BIOS. If the board refuses to boot due to inappropriate CMOS settings, here is how to proceed to clear (reset) the CMOS to its default values.

**Jumper: JRTC**

**Type: Onboard 3-pin jumper**

JRTC	Mode
1-2	Clear CMOS
2-3	Normal Operation

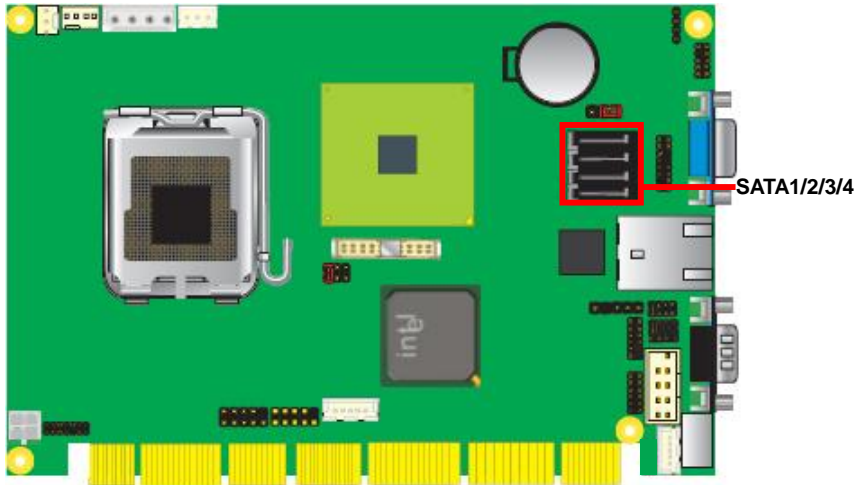
Default setting



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## 2.6 <Serial ATA interface>

Based on Intel ICH9DO, the board provides four Serial ATA interfaces with up to 300MB/s of transfer rate.



## 2.7 <LAN Interface>

The Intel 82573L supports triple speed of 10/100/1000Base-T, with IEEE802.3 compliance and Wake-On-LAN supported.



---

## 2.8 <Onboard Display Interface>

Based on Intel Q35 chipset with built-in GMA (Graphic Media Accelerator) 3100 graphics, the board provides one DB15 connector on real external I/O port, and one 40-pin LVDS interface with 5-pin LCD backlight inverter connector. The board provides dual display function with clone mode and extended desktop mode for CRT and LCD or DVI.

### 2.8.1 <Analog VGA Interface>

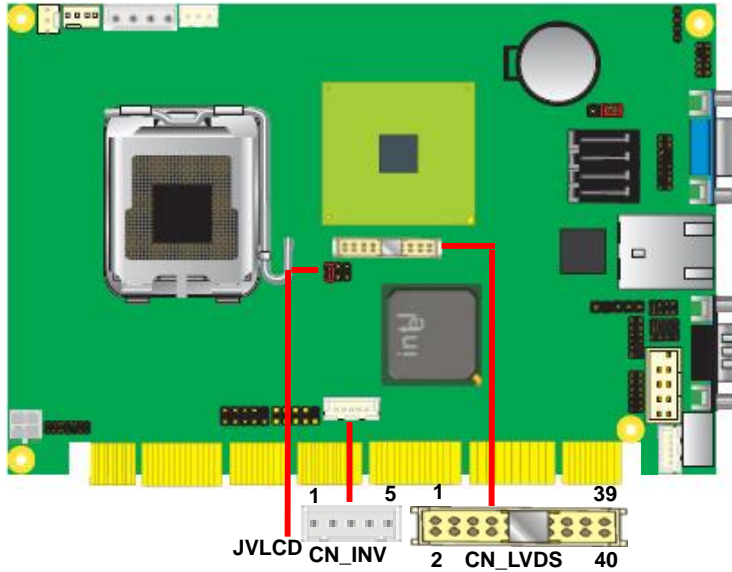
Please connect your CRT or LCD monitor with DB15 male connector to the onboard DB15 female connector on rear I/O port.



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## 2.8.2 <LVDS Display> (3308240A only)

The board provides one 40-pin LVDS connector for 18-bit dual channel panels, supports up to 1600 x 1200 (UXGA) of resolution, with one LCD backlight inverter connector and one jumper for panel voltage setting.



Connector: **CN\_INV**

Type: 5-pin LVDS Power Header

Connector model: **JST B5B-XH-A**

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

Connector: **JVLCD**

Type: 6-pin Power select Header

Pin	Description
1-2	LCDVCC (3.3V)
3-4	LCDVCC (5V)
5-6	LCDVCC (+12V)

Connector: **CN\_LVDS**

Type: onboard 40-pin connector for LVDS connector

Connector model: **HIROSE DF13-40DP-1.25V**

Pin	Signal	Pin	Signal
2	LCDVCC	1	LCDVCC
4	GND	3	GND
6	ATX0-	5	BTX0-
8	ATX0+	7	BTX0+
10	GND	9	GND
12	ATX1-	11	BTX1-
14	ATX1+	13	BTX1+
16	GND	15	GND
18	ATX2-	17	BTX2-
20	ATX2+	19	BTX2+
22	GND	21	GND
24	ACLK-	23	BTX3-
26	ACLK+	25	BTX3+
28	GND	27	GND
30	ATX3-	29	BCLK-
32	ATX3+	31	BCLK+
34	GND	33	GND
36	N/C	35	N/C
38	N/C	37	N/C
40	N/C	39	N/C



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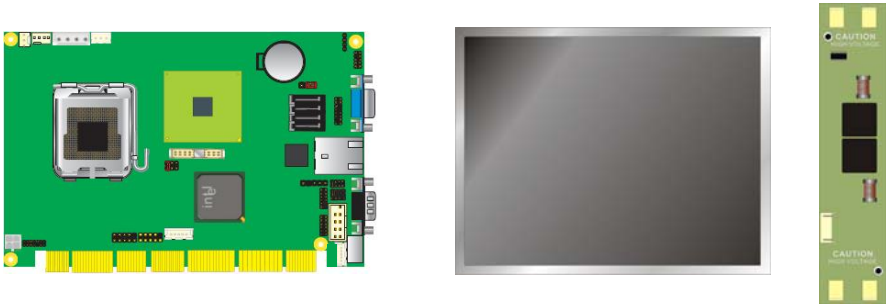
To setup the LCD, you need the component below:

1. A panel with LVDS interfaces.
2. An inverter for panel's backlight power.
3. A LCD cable and an inverter cable.

For the cables, please follow the pin assignment of the connector to make a cable, because every panel has its own pin assignment, so we do not provide a standard cable; please find a local cable manufacture to make cables.

### LCD Installation Guide:

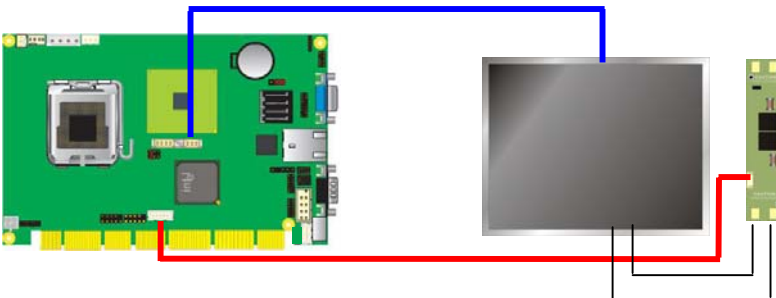
1. Preparing the 3308240A, LCD panel and the backlight inverter.



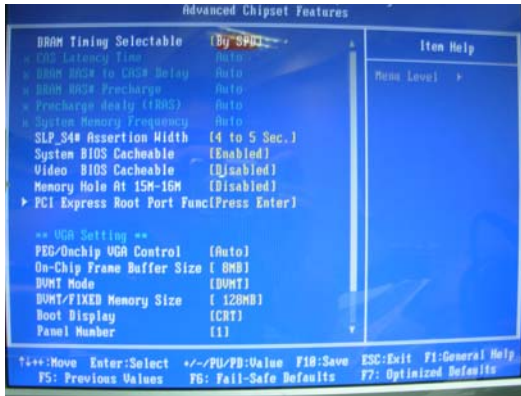
2. Please check the datasheet of the panel to see the voltage of the panel, and set the jumper **JVLCD** to +5V or +3.3V or +12V
3. You would need a LVDS type cable.



4. To connect all of the devices well.



After setup the devices well, you need to select the LCD panel type in the BIOS.



The panel type mapping is list below:

BIOS panel type selection form			
Single channel		Dual channel	
NO.	Output format	NO.	Output format
1	800 x 600 (18bit)	3	1280 x 1024 (24bit)
2	1024 x 768 (24bit)	4	1366 x 768 (24bit)

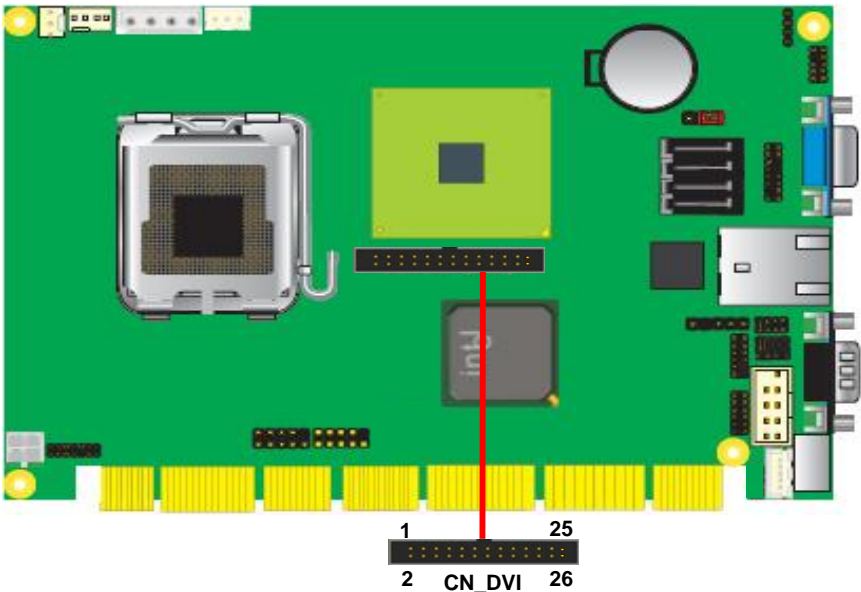
### 2.8.3 <DVI Display> (3308240B only)

The board provides optional DVI-D interface with Intel Q35, compliant with DVI 1.0 standard.

Connector: **CN\_DVI**

Connector type: 26-pin header connector (pitch = 2.0mm)

Pin Number	Assignment	Pin Number	Assignment
1	TX1+	2	TX1-
3	Ground	4	Ground
5	TXC+	6	TXC-
7	Ground	8	PVDD
9	N/C	10	N/C
11	TX2+	12	TX2-
13	Ground	14	Ground
15	TX0+	16	TX0-
17	N/C	18	HPDET
19	DDCDATA	20	DDCCLK
21	GND	22	N/C
23	N/C	24	N/C
25	N/C	26	N/C



## 2.9 <Onboard Audio Interface>

The board provides the onboard HD 2-channel audio interface with Realtek ALC888

### Connector: CN\_AUDIO

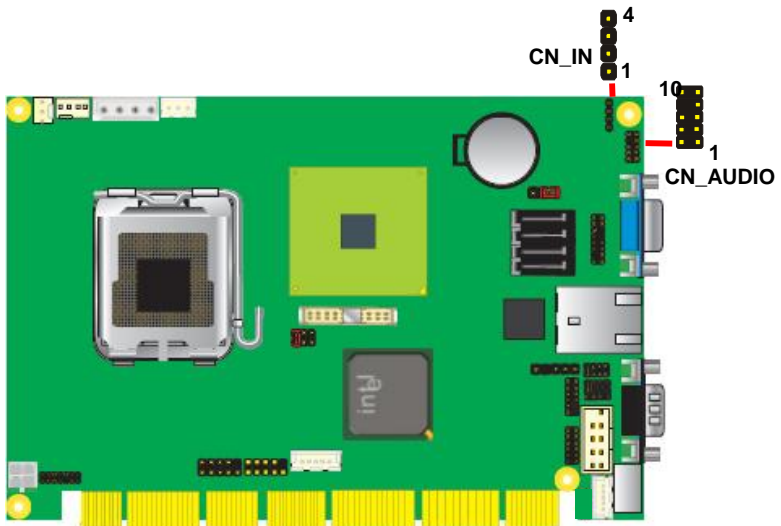
Type: 10-pin (2 x 5) header (pitch-2.54mm)

Pin	Description	Pin	Description
1	LIN_L	2	Ground
3	LIN_R	4	MIC 2
5	MIC 2	6	Ground
7	N/C	8	FRONTL
9	FRONTR	10	Ground

### Connector: CDIN

Type: 4-pin header (pitch = 2.54mm)

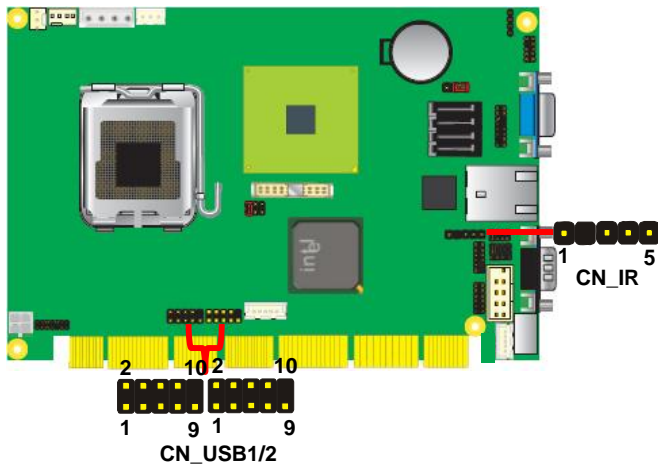
Pin	Description
1	CD – Left
2	Ground
3	Ground
4	CD – Right



## 2.10 <USB2.0 Interface>

Based on Intel ICH9DO, the board provides 4 USB2.0 ports. The USB2.0 interface provides up to 480Mbps of transferring rate.

Interface	USB2.0
Controller	ICH9DO
Transfer Rate	Up to 480Mb/s
Output Voltage	500mA



---

Connector: **CN\_IR**

Type: 5-pin header for SIR Port

Pin	Description
1	Vcc
2	N/C
3	IRRX
4	Ground
5	IRTX

Connector: **CN\_USB1/2**

Type: 10-pin (5 x 2) header for USB Port

Pin	Description	Pin	Description
1	VCC	2	VCC
3	Data0-	4	Data1-
5	Data0+	6	Data1+
7	Ground	8	Ground
9	Ground	10	N/C

PS: The USB2.0 will be only active when you connecting with the USB2.0 devices, if you insert an USB1.1 device, the port will be changed to USB1.1 protocol automatically. The transferring rate of USB2.0 as 480Mbps is depending on device capacity exact transferring rate may not be up to 480Mbps.

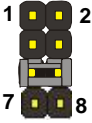






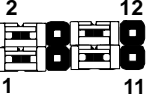
## 2.11 <Serial Port Jumper Setting >

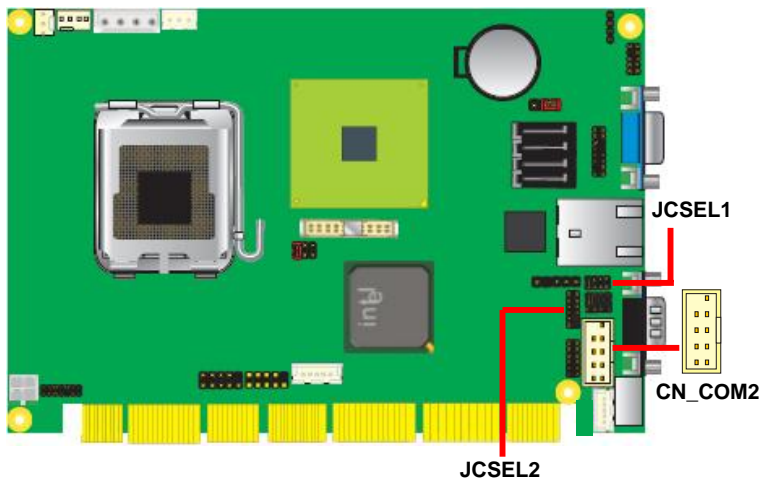
The board supports one RS232 serial port and one jumper selectable RS232/422/485 serial ports. The jumper JCSEL1 & JCSEL2 can let you configure the communicating modes for COM2.

Connector: **CN\_COM2**

Type: 10-pin (5 x 2) 2.54mm x 2.54mm-pitch header for COM2

Pin	Description	Pin	Description
1	DCD/422TX-/485-	2	RXD/422TX+/485+
3	TXD/422RX+	4	DTR/422RX-
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N/C

	JCSEL1	JCSEL2
RS-232		
RS-485		
RS-422		
IR		



## 2.12 <Power and Fan Installation>

The board comes with a 4-pin AT and 4pin 12V power connector for powering the board, three fan connectors for Northbridge, CPU and system. The board also provides a 3-pin ATX function connector. You can just connect the two power connectors without any backplane to work.

### 2.12.1 <Power connectors>

Connector: **DC\_IN**

Type: 4-pin P-type connector for +5V/+12V input

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

Connector: **CN\_12V**

Type: 3-pin ATX function connector

Pin	Description	Pin	Description	Pin	Description
1	5V Standby	2	Ground	3	Power On



### 2.12.2 <Fan Connectors>

Connector: **CPUFAN**

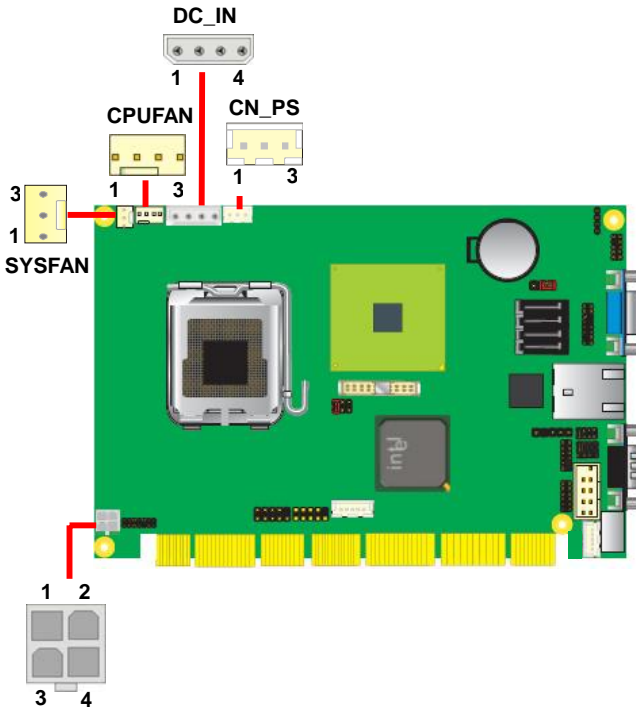
Type: 4-pin fan wafer connector

Pin	Description	Pin	Description
1	Ground	2	+12V
3	Fan Speed Detection	4	Fan Control

Connector: **SYSFAN**

Type: 3-pin fan wafer connector

Pin	Description	Pin	Description	Pin	Description
1	Ground	2	+12V	3	Fan Speed Detection



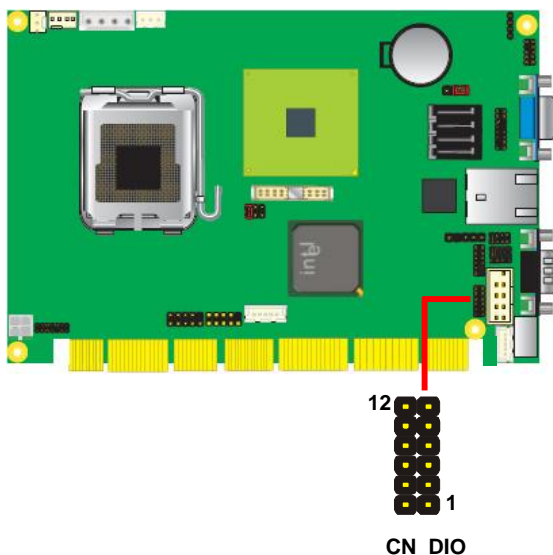
## 2.13 <GPIO Interface>

The board provides a 12-pin General Purpose I/O interface, with programmable 8-bit I/O (4-bit input & 4-bit output).

Connector: **CN\_DIO**

Type: onboard 2 x 6-pin header, pitch=2.0mm

Pin	Description	Pin	Description
1	Ground	2	Ground
3	GP10	4	GP14
5	GP11	6	GP15
7	GP12	8	GP16
9	GP13	10	GP17
11	VCC	12	+12V



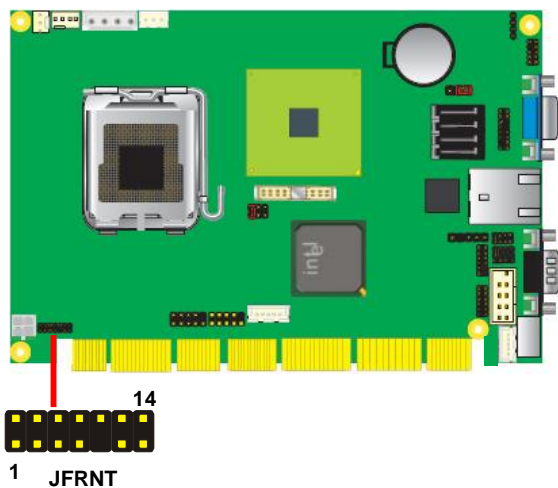
## 2.14 <Switch and Indicator>

The **JFRNT** provides front control panel of the board, such as power button, reset and beeper, etc. Please check well before you connecting the cables on the chassis.

Connector: **JFRNT**

Type: onboard 14-pin (2 x 7) 2.54-pitch header

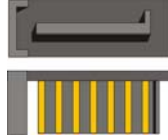
Function	Signal	PIN		Signal	Function
IDE LED	HD LED+	1	2	PWDLED+	Power LED
	HD LED-	3	4	N/C	
Reset	Reset+	5	6	PWDLED-	Speaker
	Reset-	7	8	SPKIN+	
N/C		9	10	N/C	
Power	PWRBT+	11	12	N/C	
Button	PWRBT-	13	14	SPKIN-	



## A.1 <Serial ATA Port>

Connector: **SATA1/2/3/4**

Type: 7-pin wafer connector

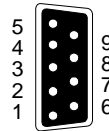


1	2	3	4	5	6	7
GND	RSATA_TXP1	RSATA_TXN1	GND	RSATA_RXN1	RSATA_RXP1	GND

## A.2 <Serial Port>

Connector: **COM1**

Type: 9-pin D-sub male connector on I/O I bracket

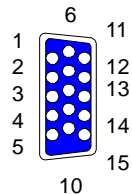


Pin	Description	Pin	Description
1	DCD	6	DSR
2	SIN	7	RTS
3	SO	8	CTS
4	DTR	9	RI
5	Ground		

## A.3 <VGA Port>

Connector: **CRT**

Type: 15-pin D-sub female connector on bracket

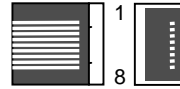


Pin	Description	Pin	Description	Pin	Description
1	RED	6	Ground	11	N/C
2	GREEN	7	Ground	12	5VCDA
3	BLUE	8	Ground	13	HSYNC
4	N/C	9	LVGA5V	14	VSYNC
5	Ground	10	Ground	15	5VCLK

## A.4 <LAN Port>

Connector: **RJ45**

Type: RJ45 connector with LED on bracket

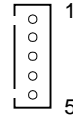


Pin	1	2	3	4	5	6	7	8
Description	TRD0+	TRD0-	TRD1+	TRD2+	TRD2-	TRD1-	TRD3+	TRD3-

## A.5 <AT Keyboard Port>

Connector: **CN\_ATKB**

Type: 5-pin box header

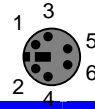


Pin	1	2	3	4	5
Description	VCC	Ground	N/C	DATA	CLK

## A.6 <PS/2 Keyboard & Mouse Port>

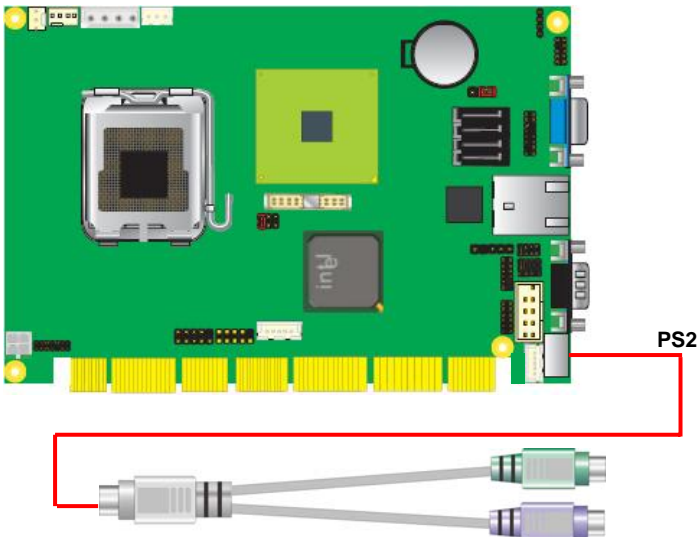
Connector: **PS2**

Type: 6-pin Mini-DIN connector on bracket



Pin	1	2	3	4	5	6
Description	KBD	MSD	Ground	VCC	KBC	MSC

Note: The PS/2 connector supports standard PS/2 keyboard directly or both PS/2 keyboard and mouse through the PS/2 Y-type cable.



---

## Appendix B <System Resources>

### B1. <I/O Port Address Map>

[00000000 - 0000000F]	Direct memory access controller
[00000000 - 00000CF7]	PCI bus
[00000010 - 0000001F]	Motherboard resources
[00000020 - 00000021]	Programmable interrupt controller
[00000022 - 0000003F]	Motherboard resources
[00000040 - 00000043]	System timer
[00000044 - 0000005F]	Motherboard resources
[00000060 - 00000060]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000061 - 00000061]	System speaker
[00000062 - 00000063]	Motherboard resources
[00000064 - 00000064]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000065 - 0000006F]	Motherboard resources
[00000070 - 00000073]	System CMOS/real time clock
[00000074 - 0000007F]	Motherboard resources
[00000080 - 00000090]	Direct memory access controller
[00000091 - 00000093]	Motherboard resources
[00000094 - 0000009F]	Direct memory access controller
[000000A0 - 000000A1]	Programmable interrupt controller
[000000A2 - 000000BF]	Motherboard resources
[000000C0 - 000000DF]	Direct memory access controller
[000000E0 - 000000EF]	Motherboard resources
[000000F0 - 000000FF]	Numeric data processor
[00000274 - 00000277]	ISAPNP Read Data Port
[00000279 - 00000279]	ISAPNP Read Data Port
[000002F8 - 000002FF]	Communications Port (COM2)
[00000378 - 0000037F]	Printer Port (LPT1)
[00000380 - 0000038B]	Intel(R) Q35 Express Chipset Family
[000003C0 - 000003DF]	Intel(R) Q35 Express Chipset Family
[000003F0 - 000003F5]	Standard floppy disk controller
[000003F7 - 000003F7]	Standard floppy disk controller
[000003F8 - 000003FF]	Communications Port (COM1)
[00000400 - 000004BF]	Motherboard resources
[000004D0 - 000004D1]	Motherboard resources

---

[00000500 - 0000051F] Intel(R) ICH9 Family SMBus Controller - 2930  
[00000778 - 0000077B] Printer Port (LPT1)  
[00000800 - 0000087F] Motherboard resources  
[00000880 - 0000088F] Motherboard resources  
[00000A79 - 00000A79] ISAPNP Read Data Port  
[00000D00 - 0000FFFF] PCI bus  
[0000C000 - 0000CFFF] Intel(R) ICH9 Family PCI Express Root Port 1 - 2940  
[0000CF00 - 0000CF1F] Intel(R) PRO/1000 PL Network Connection  
[0000EC00 - 0000EC0F] Intel(R) ICH9 2 port Serial ATA Storage Controller 2 - 2926  
[0000ED00 - 0000ED0F] Intel(R) ICH9 2 port Serial ATA Storage Controller 2 - 2926  
[0000EE00 - 0000EE03] Intel(R) ICH9 2 port Serial ATA Storage Controller 2 - 2926  
[0000EF00 - 0000EF07] Intel(R) ICH9 2 port Serial ATA Storage Controller 2 - 2926  
[0000F000 - 0000F003] Intel(R) ICH9 2 port Serial ATA Storage Controller 2 - 2926  
[0000F100 - 0000F107] Intel(R) ICH9 2 port Serial ATA Storage Controller 2 - 2926  
[0000F300 - 0000F30F] Intel(R) ICH9 4 port Serial ATA Storage Controller 1 - 2920  
[0000F400 - 0000F40F] Intel(R) ICH9 4 port Serial ATA Storage Controller 1 - 2920  
[0000F500 - 0000F503] Intel(R) ICH9 4 port Serial ATA Storage Controller 1 - 2920  
[0000F600 - 0000F607] Intel(R) ICH9 4 port Serial ATA Storage Controller 1 - 2920  
[0000F700 - 0000F703] Intel(R) ICH9 4 port Serial ATA Storage Controller 1 - 2920  
[0000F800 - 0000F807] Intel(R) ICH9 4 port Serial ATA Storage Controller 1 - 2920  
[0000F900 - 0000F91F] Intel(R) ICH9 Family USB Universal Host Controller - 2936  
[0000FA00 - 0000FA1F] Intel(R) ICH9 Family USB Universal Host Controller - 2935  
[0000FB00 - 0000FB1F] Intel(R) ICH9 Family USB Universal Host Controller - 2934  
[0000FC00 - 0000FC1F] Intel(R) ICH9 Family USB Universal Host Controller - 2939  
[0000FD00 - 0000FD1F] Intel(R) ICH9 Family USB Universal Host Controller - 2938  
[0000FE00 - 0000FE1F] Intel(R) ICH9 Family USB Universal Host Controller - 2937  
[0000FF00 - 0000FF07] Intel(R) Q35 Express Chipset Family

---

## B2. <Memory Address Map>

[00000000 - 0009FFFF]	System board
[0000046E - 0000056D]	System board
[000A0000 - 000BFFFF]	Intel(R) Q35 Express Chipset Family
[000A0000 - 000BFFFF]	PCI bus
[000C0000 - 000DFFFF]	PCI bus
[000E0000 - 000EFFFF]	System board
[000F0000 - 000FFFFF]	System board
[00100000 - 7F5DFFFF]	System board
[7F5E0000 - 7F5FFFFF]	System board
[7F600000 - 7F6FFFFF]	System board
[7F650000 - FEBFFFFF]	PCI bus
[D0000000 - DFFFFFFF]	Intel(R) Q35 Express Chipset Family
[E0000000 - EFFFFFFF]	Motherboard resources
[FD900000 - FD9FFFFF]	Intel(R) ICH9 Family PCI Express Root Port 1 - 2940
[FDA00000 - FDAFFFFF]	Intel(R) ICH9 Family PCI Express Root Port 1 - 2940
[FDAE0000 - FDAFFFFF]	Intel(R) PRO/1000 PL Network Connection
[FDD00000 - FDDFFFFF]	Intel(R) Q35 Express Chipset Family
[FDE80000 - FDEFFFFF]	Intel(R) Q35 Express Chipset Family
[FDFF8000 - FDFFBFFF]	Microsoft UAA Bus Driver for High Definition Audio
[FDFFD000 - FDFFD0FF]	Intel(R) ICH9 Family SMBus Controller - 2930
[FDFFE000 - FDFFE3FF]	Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293A
[FDFFF000 - FDFFF3FF]	Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293C
[FEB80000 - FEBFFFFF]	Intel(R) Q35 Express Chipset Family
[FEC00000 - FEC00FFF]	System board
[FED00000 - FED000FF]	System board
[FED00000 - FED003FF]	High precision event timer
[FED13000 - FED1FFFF]	System board
[FED20000 - FED9FFFF]	System board
[FEE00000 - FEE00FFF]	System board
[FFB00000 - FFB7FFFF]	System board
[FFB80000 - FFBFFFFF]	Intel(R) 82802 Firmware Hub Device
[FFF00000 - FFFFFFFF]	System board



---

### B3. <System IRQ Resources>

- (ISA) 0 High precision event timer
- (ISA) 1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
- (ISA) 3 Communications Port (COM2)
- (ISA) 4 Communications Port (COM1)
- (ISA) 6 Standard floppy disk controller
- (ISA) 8 High precision event timer
- (ISA) 9 Microsoft ACPI-Compliant System
- (ISA) 12 PS/2 Compatible Mouse
- (ISA) 13 Numeric data processor
- (PCI) 11 Intel(R) ICH9 Family SMBus Controller - 2930
- (PCI) 16 Intel(R) ICH9 Family PCI Express Root Port 1 - 2940
- (PCI) 16 Intel(R) ICH9 Family USB Universal Host Controller - 2937
- (PCI) 16 Intel(R) PRO/1000 PL Network Connection
- (PCI) 16 Intel(R) Q35 Express Chipset Family
- (PCI) 18 Intel(R) ICH9 Family USB Universal Host Controller - 2939
- (PCI) 18 Intel(R) ICH9 Family USB Universal Host Controller - 2936
- (PCI) 18 Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293C
- (PCI) 19 Intel(R) ICH9 2 port Serial ATA Storage Controller 2 - 2926
- (PCI) 19 Intel(R) ICH9 4 port Serial ATA Storage Controller 1 - 2920
- (PCI) 19 Intel(R) ICH9 Family USB Universal Host Controller - 2935
- (PCI) 21 Intel(R) ICH9 Family USB Universal Host Controller - 2938
- (PCI) 22 Microsoft UAA Bus Driver for High Definition Audio
- (PCI) 23 Intel(R) ICH9 Family USB Universal Host Controller - 2934
- (PCI) 23 Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293A

---

## Appendix C <Programming GPIO's>

The GPIO can be programmed with the MSDOS debug program using simple IN/OUT commands. The following lines show an example how to do this.

GPIO0...GPIO7 bit0.....bit7

```
-o 2E 87                ;enter configuration
-o 2E 87
-o 2E 2A
-o 2F FD                ;enable GPIO function
-o 2E 07
-o 2F 07                ;enable GPIO configuration
-o 2E F0
-o 2F xx                ;set GPIO as input/output; set '1' for input,'0'for output
-o 2E F1
-o 2F xx                ;if set GPIO's as output, in this register its value can be set
```

Optional :

```
-o 2E F2
-o 2F xx                ; Data inversion register ; '1' inverts the current value of the
                        bits ,'0' leaves them as they are
-o 2E 30
-o 2F 01                ; active GPIO's
```

For further information, please refer to Winbond W83627DHG datasheet.

# Appendix D <Watch Dog timer Setting >

The watchdog timer makes the system auto-reset while it stops to work for a period. The integrated watchdog timer can be setup as system reset mode by program.

### Timeout Value Range

- 1 to 255
- Second or Minute

### Program Sample

Watchdog timer setup as system reset with 5 second of timeout

---

2E, 87	
2E, 87	
2E, 07	
2F, 08	Logical Device 8
2E, 30	
2F, 01	Activate
2E, F5	
2F, 00	Set as Second*
2E, F6	
2F, 05	Set as 5

---

\* Minute: bit 3 = 0; Second: bit 3 = 1

You can select Timer setting in the BIOS, after setting the time options, the system will reset according to the period of your selection.



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