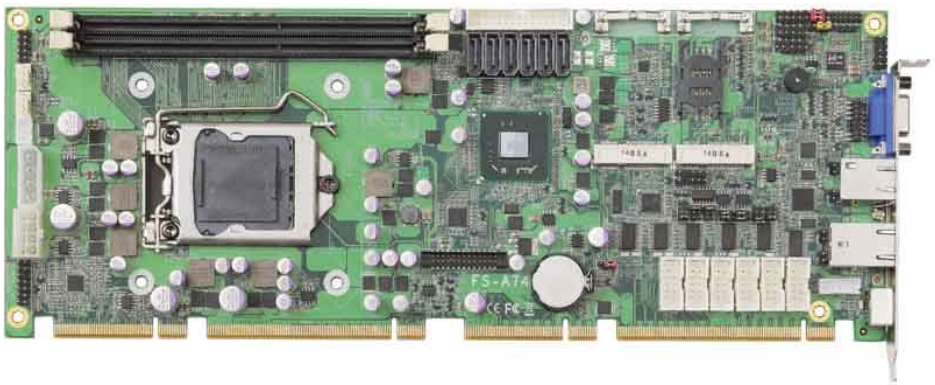
FS-A74

PICMG1.3 Full-size CPU Card

User's Manual

Edition 1.5
2014/05/15



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Packing List:

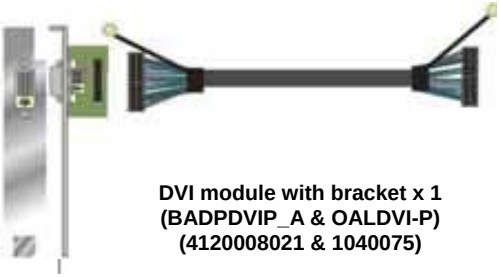
Please check the package content before you starting using the board.

Hardware:

FS-A74 PICMG1.3 Full-size CPU Card motherboard x 1

Cable Kit:

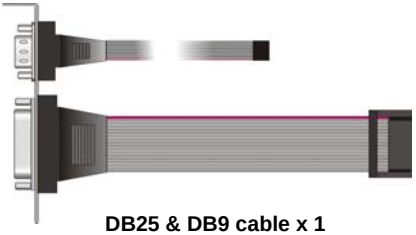
SATA Cable x 2
(OALSATA3-L)/ (1040529)



DVI module with bracket x 1
(BADPDVIP_A & OALDVI-P)
(4120008021 & 1040075)

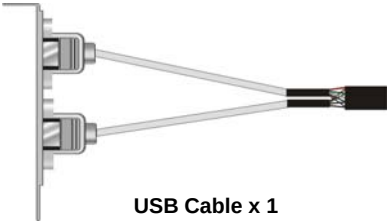
PS/2 Keyboard & Mouse Cable x 1
(OALPS2/MKN)/ (1040551)

4-pin to 3-pin ATX cable x 1
(OAL-ATX-C)/ (1040184)

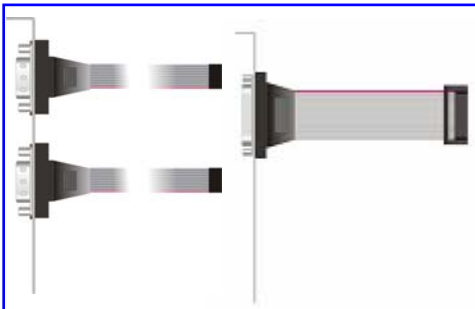


DB25 & DB9 cable x 1
(FS-A74TDG/ FS-A74FTDG Only)
(OAL1S1P)/ (1040041)

Audio Port Cable x 1
(OALPJ-HD)/ (1040120)



USB Cable x 1
(OALUSBA-1)/ (1040172)



DB9 cable x 1 & DB25 cable x 1
(FS-A74TDG2/ FS-A74FTDG2 Only)
(OAL2S1P)/ (1040191)

Printed Matters:

Driver CD (Including User's Manual) x 1

Index

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Chapter 1 <Introduction>

1.1 <Product Overview>

FS-A74 the 2nd Generation Intel of the PICMG1.3 Full-size CPU Card motherboard, supports 2nd Generation Intel® Core™ i7, Core™ i5, Core™ i3 and Pentium/Xeon ® Desktop Processor and features Intel Q67 chipset, integrated HD Graphics, DDR3 memory, REALTEK High Definition Audio, Serial ATA and Intel Gigabit LAN.

Intel® FCLGA1155 processor

The Intel® I3/I5/I7/Pentium/Xeon® processor now comes with a new form factor with 1155-pin FCLGA package, for 1066/1333MHz front-side-bus, 12MB L2 cache, for 65nm and 45nm manufacturing technology, the PLGA processor without pin header on solder side can make user installing the processor on the socket easier.

Intel® Q67 PCH chipset

The Intel Q67 integrates DDR3 1066/1333MHz for memory, and HD Graphic technology for new graphic engine. The Q67 integrates with up to 8 USB2.0 interfaces, and serial ATA II interface with RAID function.

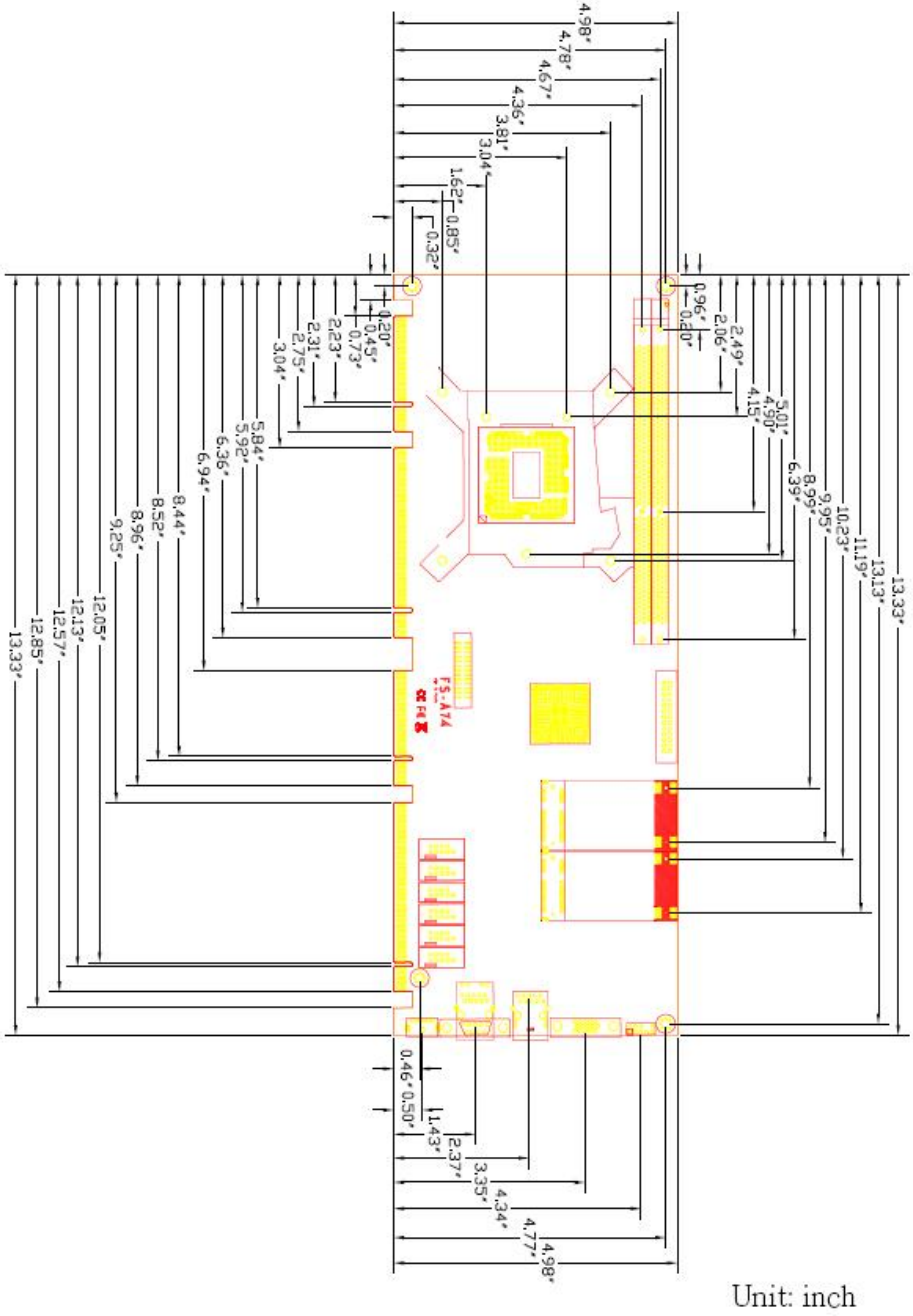
1.2 <Product Specification>

General Specification	
Form Factor	PICMG1.3 Full-size CPU Card
CPU	2nd Generation Intel® Core™ I3/I5/I7/Pentium/Xeon® processor With **LGA1155** socket Package type: FCLGA 1155
Memory	2 x 240-pin DDR3 1066/1333MHz SDRAM up to 16GB Unbufferred, none-ECC memory supported only
Chipset	Intel® BD82Q67 PCH
BIOS	Phoenix 16Mb 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 built-in RTC with lithium battery
Serial ATAII	Intel® Q67 PCH integrates 4 Serial ATA II interface& 2 Serial ATA III RAID 0, 1,5,10 Intel Matrix Storage Technology supported
Multi-I/O Port	
Chipset	Intel® Q67 PCH with Winbond® W83627DHG-P Controller
Serial Port	Four RS-232 and one RS232/422/485 serial ports
USB Port	Eight Hi-Speed USB 2.0 ports with 480Mbps of transfer rate
IrDA Port	One IrDA compliant Infrared interface supports SIR
K/B & Mouse	External PS/2 keyboard and mouse ports on rear I/O panel
GPIO	One 12-pin Digital I/O connector with 8-bit programmable I/O Interface
Smart Fan	One CPU fan connectors for fan speed controllable
VGA Display Interface	
Chipset	Intel® Clear Video integrated HD Graphics Technology
Frame Buffer	Up to 1.7GB shared with system memory
Display Type	CRT, LCD monitor with analog display Onboard DVI interface
Connector	External DB15 female connector on rear I/O panel Onboard 26-pin DVI Connector
Ethernet Interface	
Controller	One Intel 82574L Gigabit Ethernet controller One Intel 82579LM Gigabit Ethernet controller **(FS-A74TDG&FS-A74FTDG Only)**
Type	Triple speed 10/100/1000Base-T Auto-switching Fast Ethernet Full duplex, IEEE802.3U compliant
Connector	Two External RJ45 connectors with LED on rear I/O panel

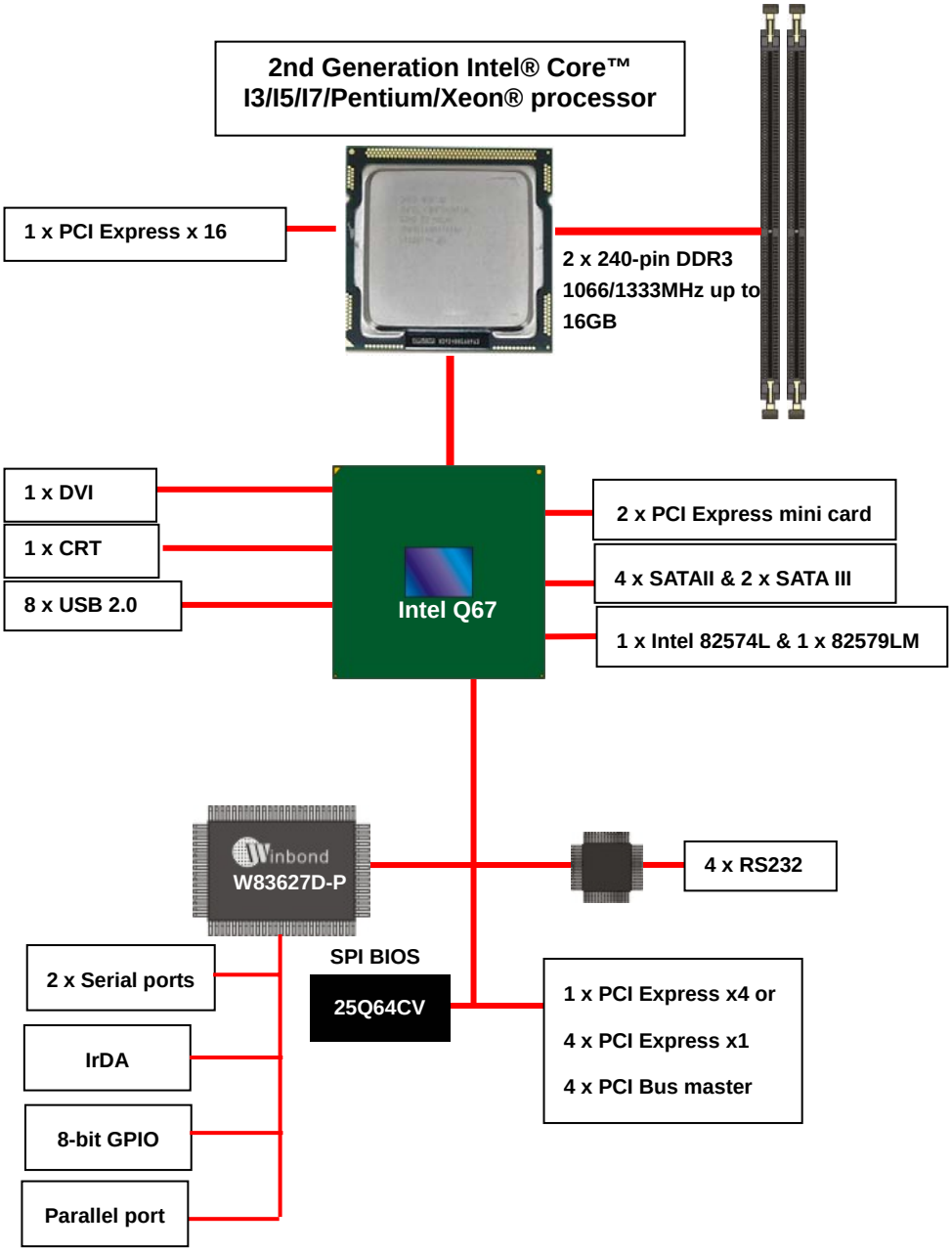
Expansive Interface	
PCI-Express	One X16 and one X4 or X1 on PICMG 1.3 Interface
PCI	Four PCI bus master on PICMG 1.3 Interface
Audio Interface	
Chipset	Intel® integrated Q67with Realtek ALC888HD Audio Intel High Definition Audio compliance
Interface	2 channels sound output
Connector	Internal 10-pin header for line-out, MIC-in, 4-pin header for CD-IN
Power and Environment	
Power Requirement	+5V, +12 DC input & 5VSB Requirement
Dimension	338 (L) x 126 (W) mm
Temperature	Operating within 0 ~ 60^{O}C (32 ~ 140^{O}F) Storage within –20 ~ 85^{O}C (-4 ~ 185^{O}F)
Ordering Code	
FS-A74TDG	Onboard VGA, DVI, 8 x USB2.0, 6 x serial Port, 6 x SATA, HD Audio, GPIO, 2 x PCI Express mini card, 4 x PCI Bus master, 1 x Giga LAN (82579LM) **Support Four X1 & One X16 PCI Express interface**
FS-A74FTDG	Onboard VGA, DVI, 8 x USB2.0, 6 x serial Port, 6 x SATA, HD Audio, GPIO, 2 x PCI Express mini card, 4 x PCI Bus master, 1 x Giga LAN (82579LM) **Support One X4 & One X16 PCI Express interface**
FS-A74TDG2	Onboard VGA, DVI, 8 x USB2.0, 6 x serial Port, 6 x SATA, HD Audio, GPIO, 2 x PCI Express mini card, 4 x PCI Bus master, 2 x Giga LAN **Support Four X1 & One X16 PCI Express interface**
FS-A74FTDG2	Onboard VGA, DVI, 8 x USB2.0, 6 x serial Port, 6 x SATA, HD Audio, GPIO, 2 x PCI Express mini card, 4 x PCI Bus master, 2 x Giga LAN **Support One X4 & One X16 PCI Express interface**

The specifications may be different as the actual production.

1.3 <Mechanical Drawing>

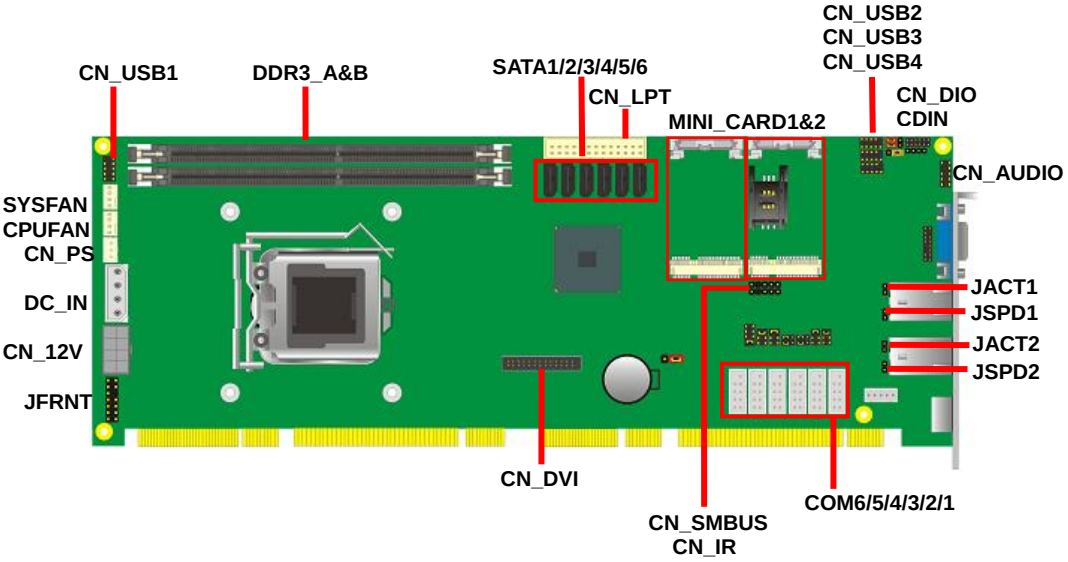


1.4 <Block Diagram>

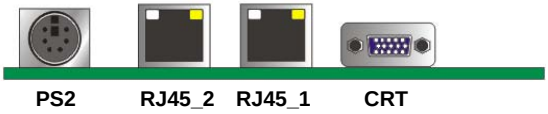


Chapter 2 <Hardware Setup>

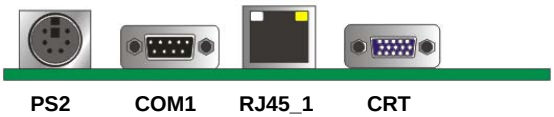
2.1 <Connector Location>



FS-A74TDG2 & FS-A74FTDG2

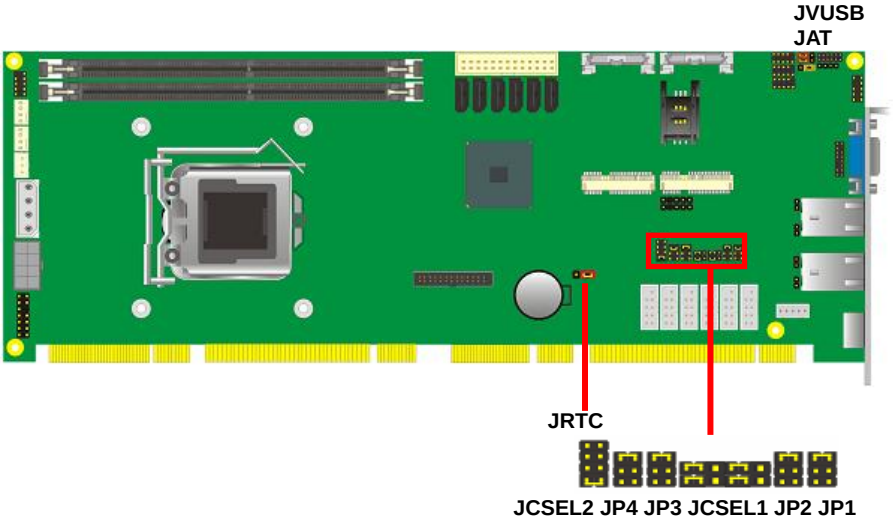


FS-A74TDG & FS-A74FTDG



2.2 <Jumper Location & Reference>

Jumper	Function
JRTC	CMOS Operating/Clear Setting
JAT	Power mode select
JP1	Com1 Voltage Setting (For Pin 9)
JP2	Com2 Voltage Setting (For Pin 9)
JP3	Com3 Voltage Setting (For Pin 9)
JP4	Com4 Voltage Setting (For Pin 9)
JCSEL1 **JCSEL2**	CN_COM2 RS-232 RS422 RS485 Setting CN_IR IrDA Setting
JVUSB	USB Voltage Setting



Jumper**: JAT**
Type: Onboard 3-pin jumper

JAT	Mode
1-2	AT Power mode
2-3	ATX Power mode

Default setting

2.3 <Connector Reference>

2.3.1 <Internal Connectors>

Connector	Function	Remark
CPU	LGA1155 CPU socket	
DDRIIIA&B	240 –pin DDR3 SDRAM DIMM socket	
SATA 1/2	7-pin Serial ATAIII connector	
SATA 3/4/5/6	7-pin Serial ATAII connector	
CN_12V	4-pin +12V additional power supply connector	
CN_AUDIO	5 x 2-pin audio connector	
CDIN	4-pin CD-ROM audio input connector	
CN_DIO	6 x 2-pin digital I/O connector	
CN_USB 1/2/3/4/5/6	5 x 2-pin USB connector	
CPUFAN	4-pin CPU cooler fan connector	
SYSFAN	4-pin system cooler fan connector	
CN_IR	5-pin IrDA connector	
CN_COM1/2/3/4/5/6	9-pin com connector	
JFRNT	14-pin front panel switch/indicator connector	
Mini-Card1/2	2 x 52-pin Mini-PCIE socket	
CN_LPT	13 x 2-pin printer connector	
JSPD 1/2	LAN Speed LED connector	
JACT 1/2	LAN Activity LED connector	
CN_DVI	13 x 2-pin DVI connect	

2.3.2 <External Connectors>

Connector	Function	Remark
RJ45 1/2	1 x RJ45 LAN connector	
CRT	DB15 and analog VGA connector	
PS/2	PS/2 keyboard and mouse connector	

2.4 <CPU and Memory Setup>

2.4.1 <CPU Setup>

FS-A74 has a LGA1155 CPU socket onboard; please check following steps to install the processor properly.

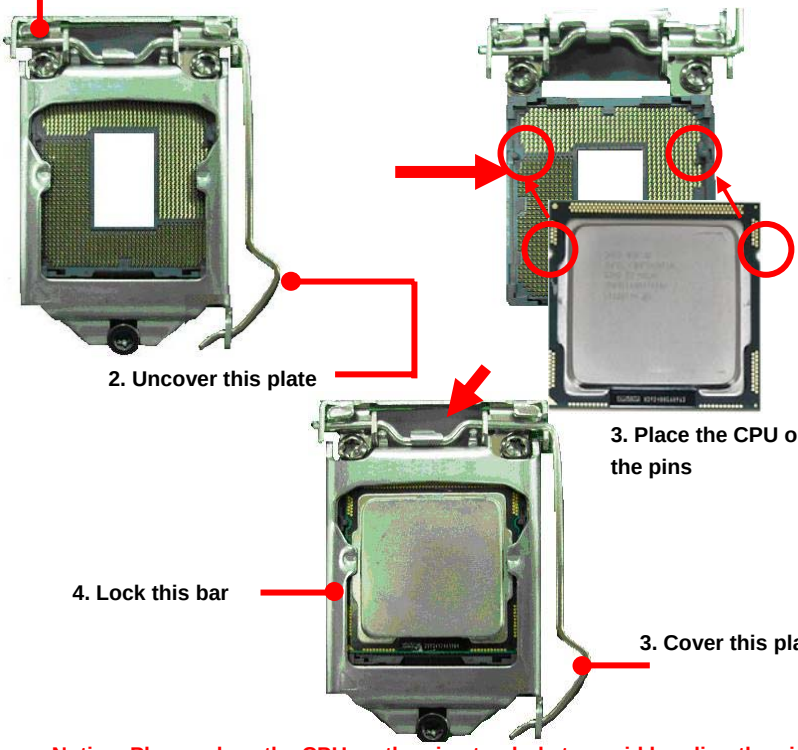
Attention ***If FS-A74 need RMA please Keep CPU socket cover on the CPU Socket.***

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

2nd Generation Intel® Core™ I3/I5/I7/Pentium/Xeon® processor
Package type: 1155 pin FCLGA
FSB: 1066/1333MHz

1. Lift this bar

Checked point



2. Uncover this plate

3. Place the CPU on the top of the pins

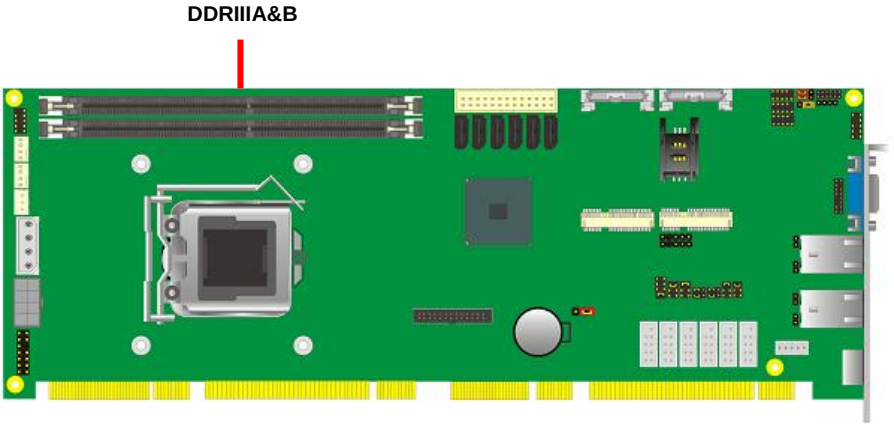
4. Lock this bar

3. Cover this plate

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

2.4.2 <Memory installation>

FS-A74 has two 240-pin DDR3 DIMM support up to 16GB of memory capacity. The memory frequency supports 1066/1333 MHz. Only Non-ECC memory is supported.



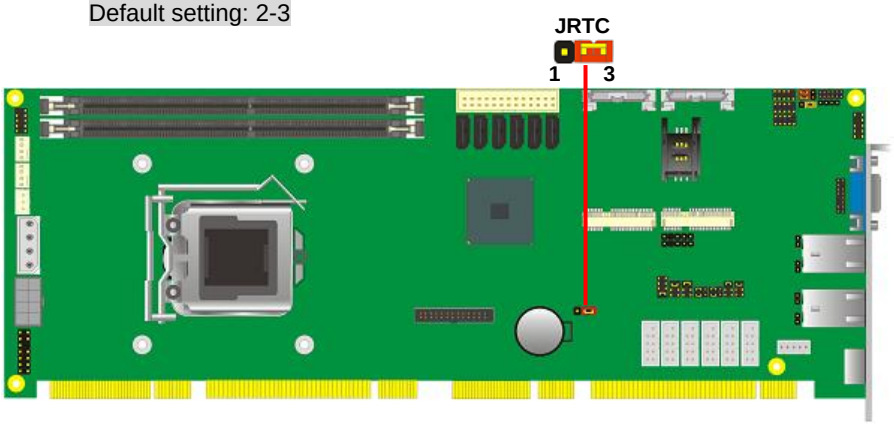
2.5 <CMOS Setup>

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: 2-3



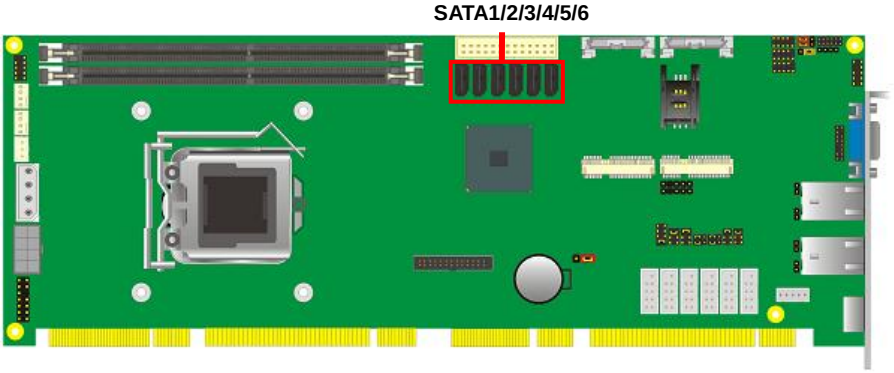
2.6 <Serial ATA Interface>

FS-A74 has Four Serial ATA II & Two Serial ATA III interfaces with RAID function, the transfer rate of the Serial ATA II can be up to 300MB/s & Serial ATA III can be up to 600MB/s. Please go to http://www.serialata.org/ for more about Serial ATA technology information. Based on Intel® PCH, it supports **Intel® Matrix Storage Technology** with combination of RAID 0,1,5 and 10. The main features of RAID on Intel® Q67 PCH are listed below:

1. Supports for up to RAID volumes on a single, two-hard drive RAID array.
2. Supports for two, two-hard drive RAID arrays on any of six Serial ATA ports.
3. Supports for Serial ATA ATAPI devices.
4. Supports for RAID spares and automatic rebuild.
5. Supports on RAID arrays, including NCQ and native hot plug.

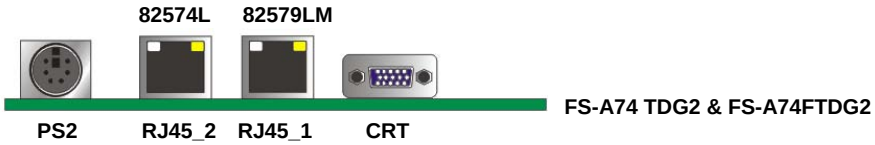
For more information please visit Intel's official website.

For more about the system setup for Serial ATA, please check the chapter of SATA configuration.

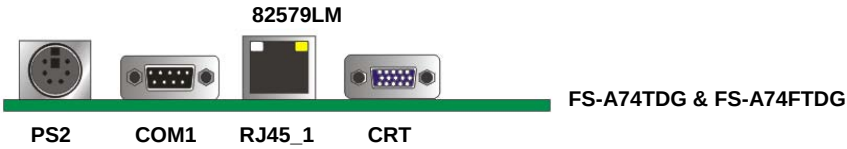


2.7 <Ethernet Interface>

The board integrates with one Intel 82574L Gigabit Ethernet & one Intel 82579LM controllers, as the PCI Express bus. The Intel 82574L supports triple speed of 10/100/1000Base-T, with IEEE802.3 compliance and Wake-On-LAN supported.



FS-A74 TDG2 & FS-A74FTDG2



FS-A74TDG & FS-A74FTDG

2.8 <Onboard Display Interface>

Based on Intel Q67 chipset with built-in graphics, the board provides one DB15 Connector on real external I/O port and the board also provides 26-pin DVI interface

Notice: When you install any PCI Graphic card, the onboard graphics would be disabled automatically.

2.8.1 <Analog Display>

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

FS-A74TDG2 & FS-A74FTDG2

CRT

FS-A74TDG & FS-A74FTDG

CRT

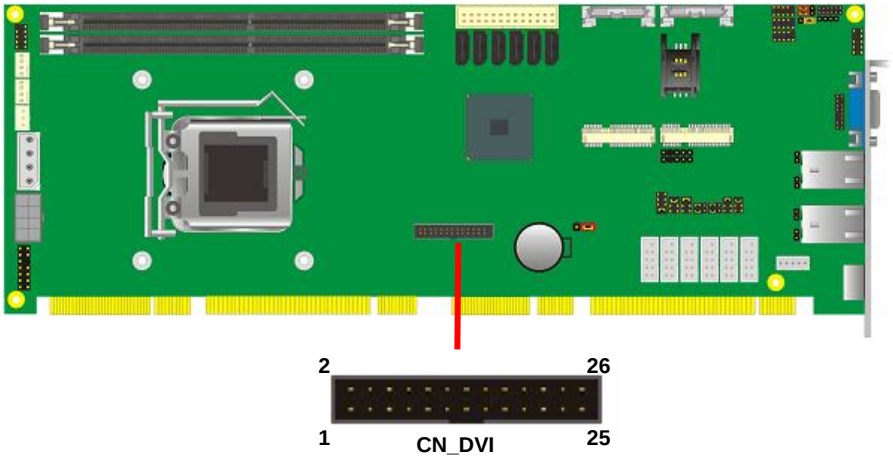
2.8.2 <DVI Display >

The board also comes with a DVI interface with Chrontel for digital video interface.

Connector: **CN_DVI**

Connector type: 26-pin header connector (pitch = 2.00mm)

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



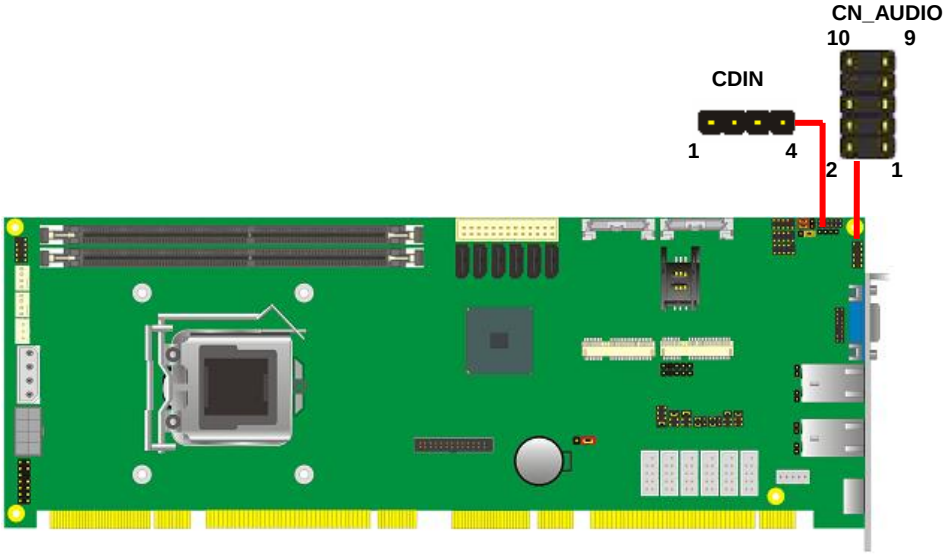
2.9 <Integrated Audio Interface>

The board integrates onboard audio interface with REALTEK ALC888 codec, with Intel next generation of audio standard as High Definition Audio, it offers more vivid sound and other advantages than former HD audio compliance.

The main specifications of ALC888 are:

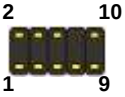
- **High-performance DACs with 100dB S/N ratio**
- **2 DAC channels support 16/20/24-bit PCM format for 2 audio solution**
- **16/20/24-bit S/PDIF-OUT supports 44.1K/48K/96kHz sample rate**
- **Compatible with HD**
- **Meets Microsoft WHQL/WLP 2.0 audio requirements**

The board provides 2 channels audio phone jacks on rear I/O port, Line-in/MIC-in ports for front I/O panel through optional cable.



Connector: CN_AUDIO

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



Pin	Description	Pin	Description
1	MIC_L	2	Ground
3	MIC_R	4	N/C
5	Speaker_R	6	MIC Detect
7	SENSE	8	N/C
9	Speaker_L	10	Speaker Detect

Connector: CDIN

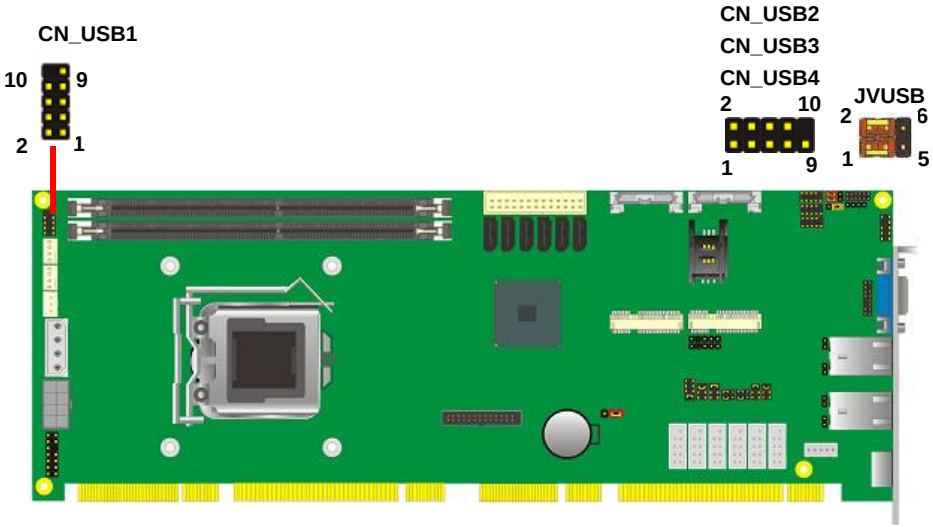
Type: 4-pin header (pitch = 2.54mm)

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

2.10 <USB Interface>

FS-A74 integrates eight USB2.0 ports. The specifications of USB2.0 are listed below:

Interface	USB2.0
Controller	Intel® Q67
Transfer Rate	Up to 480Mb/s
Voltage	5V



Connector: **CN_USB1/2/3/4**

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

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

Jumper**: JVUSB**
Type: Onboard 6-pin jumper

JAT	Mode
4-6 & 3-5	+5V_SB
2-4 & 1-3	+5V

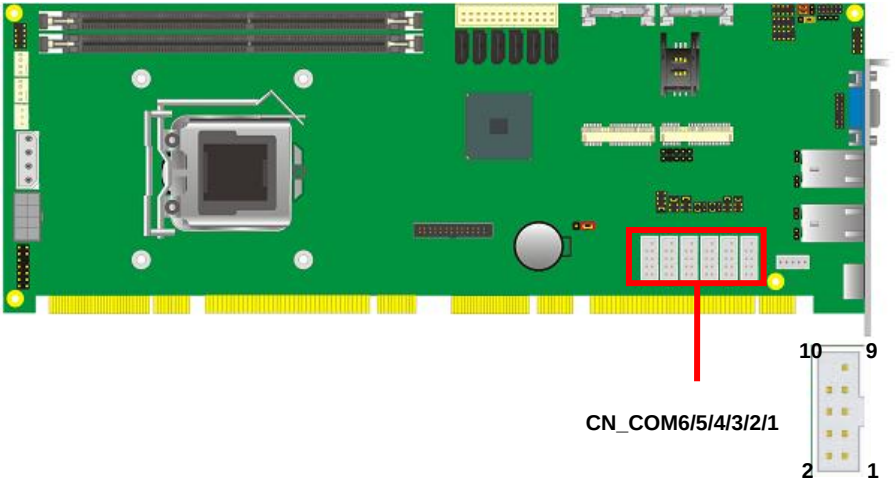
Default setting

Effective patterns of connection: 1-3 & 2-4 or 3-5 & 4-6

Warning: others cause damages

2.11 <Serial Port>

The board supports five 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.



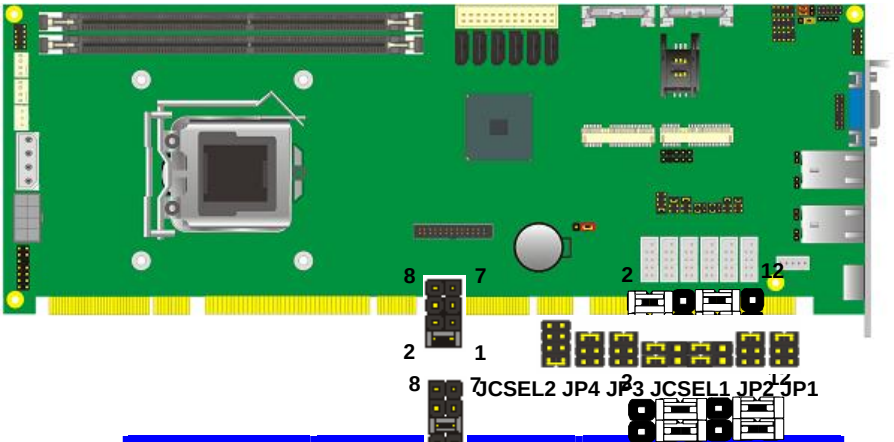
Connector: **CN_COM1/3/4/5/6**
Type: 9-Pin box header

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

Connector: **CN_COM2**
Type: 9-Pin box header

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

Setting RS-232 & RS-422 & RS-485 for COM2



Function	JCSEL2	JCSEL1
IrDA	8 7 2 1	2 12 1 11
RS-422 RS-232	8 7 2 1	2 12 1 11

Default setting:

RS-485

JCSEL1: (1-3, 2-4, 7-9, 8-10) JCSEL2: (1-2)

Jumper: **JP1/JP2/JP3/JP4 (COM1/2/3/4)**

Type: onboard 6-pin header

Power Mode	JP1/2/3/4
Pin 9 with 5V Power	1-2
Pin 9 with 12V Power	3-4
Standard COM port	**5-6**
Default setting (5-6)	

2.12 <GPIO and SMBUS Interface>

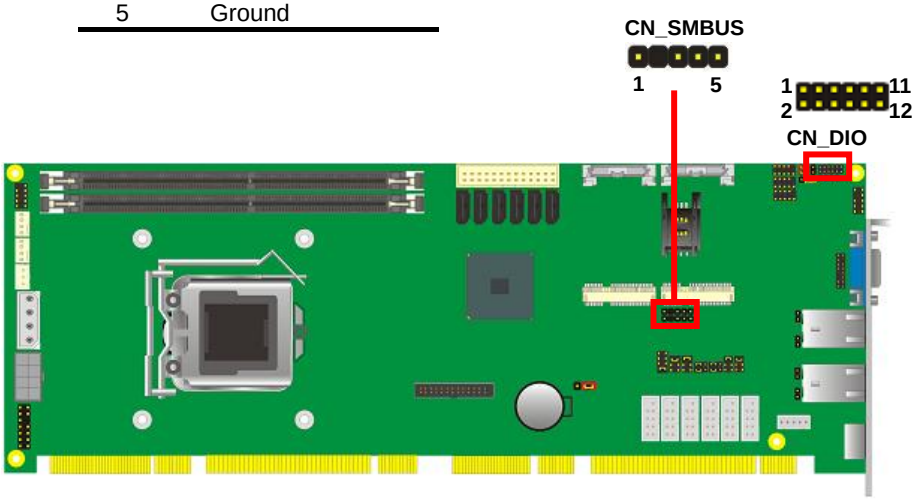
The board provides a programmable 8-bit digital I/O interface; you can use this general purpose I/O port for system control like POS or KIOSK.

Connector: **CN_DIO**
Type: 12-pin (6 x 2) 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	5V	12	12V

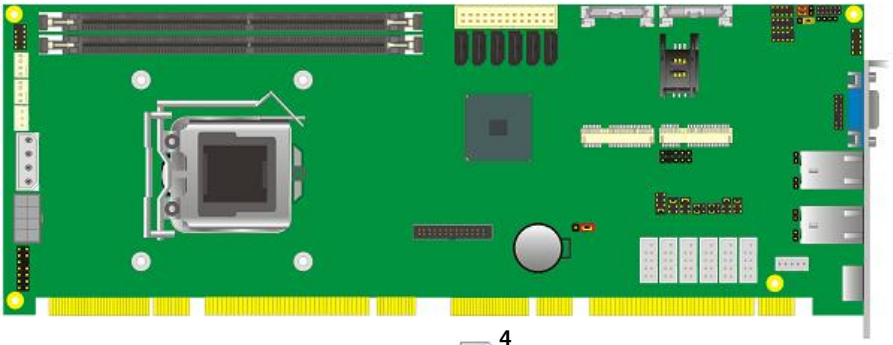
Connector: **CN_SMBUS**
Type: 5-pin header for SMBUS Ports

Pin	Description
1	VCC
2	N/C
3	SMBDATA
4	SMBCLK
5	Ground



2.13 <Power Supply and Fan Interface >

The **FS-A74** provides a standard ATX power supply with **4-pin** ATX connector and the board provides one 4-**pin** fan connector supporting smart fan for CPU cooler and one 4-pin cooler fan connectors for system and Northbridge chip. please connect this well before you finishing the system setup.



Connector: **DC_IN**
Type: 4-pin DC power connector

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

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
1	Ground	2	+12V
3	Fan Speed Detection	4	Will be defined

Connector: **CN_PS**
Type: 3-pin connector

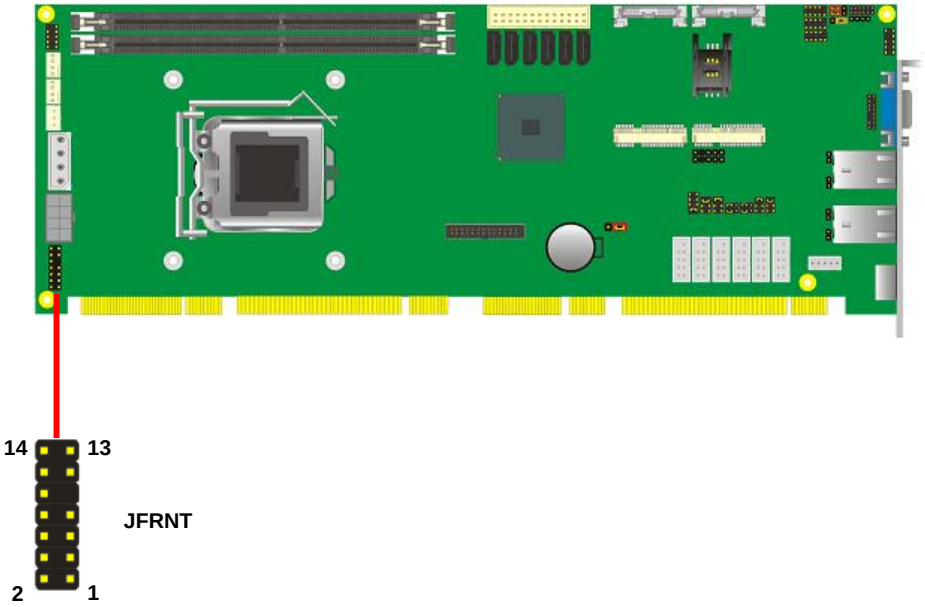
Pin	Description	Pin	Description	Pin	Description
1	5VSTBY	2	Ground	3	PSON

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	HDLED+	1	2	PWRLED+	**Power LED**
	HDLED-	3	4	N/C	
Reset	Reset+	5	6	PWRLED-	
	Reset-	7	8	SPK+	**Speaker**
	N/C	9	10	N/C	
Power Button	PWRBT+	11	12	N/C	
	PWRBT-	13	14	SPK-	

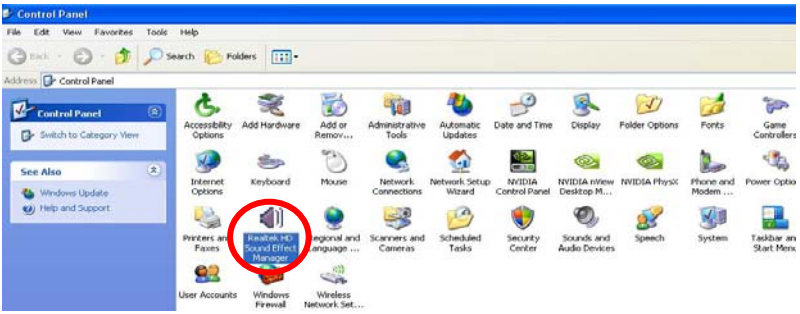


Chapter 3 <System Setup>

3.1 <Audio Configuration>

The board integrates Intel® Q67 with REALTEK® ALC888 code. It can support 2-channel sound under system configuration. Please follow the steps below to setup your sound system.

1. Install REALTEK HD Audio driver.
2. Lunch the control panel and Sound Effect Manager.



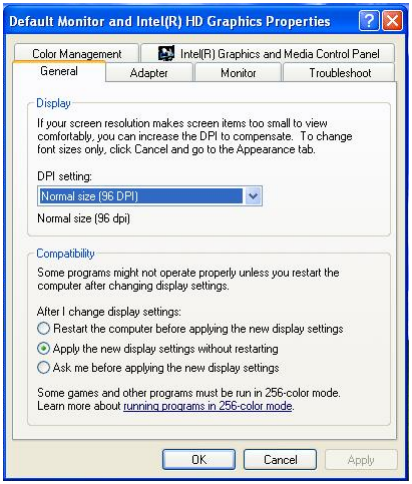
3. Select Speaker Configuration

3.2 <Display Properties Setting>

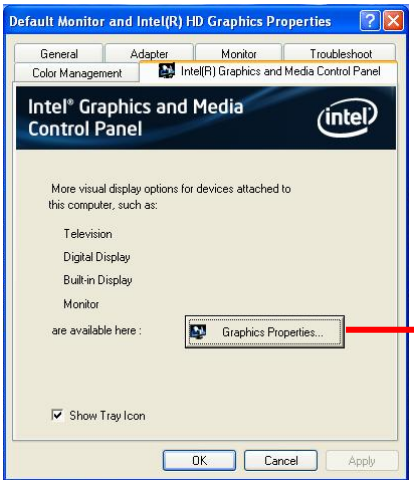
Based on Intel Q67 with HD Graphic, the board supports two DACs for display device as different resolution and color bit.

Please install the Intel Graphic Driver before you starting setup display devices.

1. Click right button on the desktop to lunch **display properties**



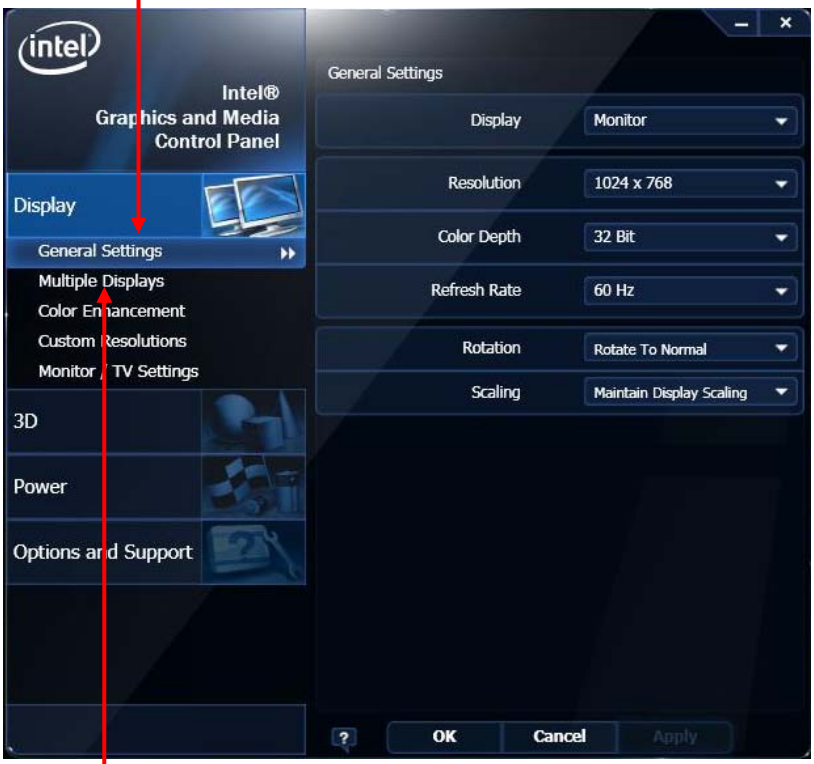
2. Click **Advanced** button for more specificity setup.



Click Graphics Properties... for advanced setup

3. This setup options can let you define each device settings.

Click Monitor to setup the CRT monitor for Resolution and Refresh Rate



Click Intel® Dual Display Clone to setup the dual display mode as same screen

Chapter 4 <BIOS Setup>

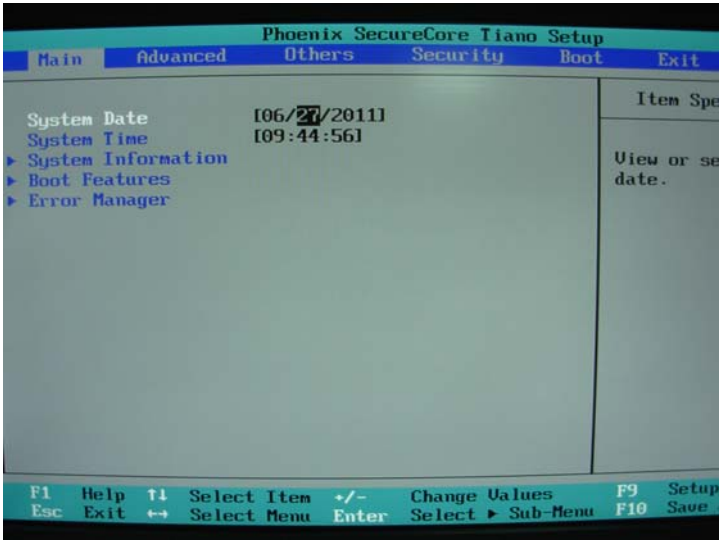
The motherboard uses the Phoenix BIOS for the system configuration. The Phoenix BIOS in the single board computer is a customized version of the industrial standard BIOS for IBM PC AT-compatible computers. It supports Intel x86 and compatible CPU architecture based processors and computers. The BIOS provides critical low-level support for the system central processing, memory and I/O sub-systems.

The BIOS setup program of the single board computer let the customers modify the basic configuration setting. The settings are stored in a dedicated battery-backed memory, NVRAM, retains the information when the power is turned off. If the battery runs out of the power, then the settings of BIOS will come back to the default setting.

The BIOS section of the manual is subject to change without notice and is provided here for reference purpose only. The settings and configurations of the BIOS are current at the time of print, and therefore they may not be exactly the same as that displayed on your screen.

To activate CMOS Setup program, press ＜DEL＞ key immediately after you turn on the system. The following message "Press DEL to enter SETUP" should appear in the lower left hand corner of your screen. When you enter the CMOS Setup Utility, the Main Menu will be displayed as **Figure 4-1**. You can use arrow keys to select your function, press ＜Enter＞ key to accept the selection and enter the sub-menu.

Figure 4-1 CMOS Setup Utility Main Screen



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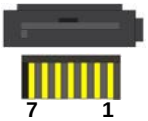
Appendix A <I/O Port Pin Assignment>

A.1 <Serial ATA Port>

Connector: **SATA1/2/3/4/5/6**

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 <IrDA Port>

Connector: **CN_IR**

Type: 5-pin header for SIR Ports

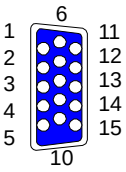
JCSEL1 must jump to "SIR"

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

A.3 <VGA Port>

Connector: **CRT**

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

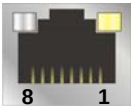


Pin	Description	Pin	Description	Pin	Description
1	RED	6	Ground	11	N/C
2	GREEN	7	Ground	12	DDCDA
3	BLUE	8	Ground	13	HSYNC
4	N/C	9	N/C	14	VSYNC
5	Ground	10	Ground	15	DDCCLK

A.4 <LAN Port>

Connector: **RJ45**

Type: RJ45 connector with LED on bracket



Pin	1	2	3	4	5	6	7	8
Description	MI0+	MI0-	MI1+	MI2+	MI2-	MI1-	MI3+	MI3-

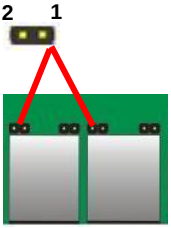
A.5 <LAN LED Port>

Connector: **JSPD1/2**

Type: 5-pin header for LAN Speed LED connector

When Lan speed 10/100Mbps

Pin	Description
1	LED-
2	LED+



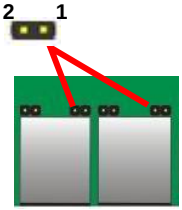
When Lan speed 1Gbps

Pin	Description
1	LED+
2	LED-

Connector: **JATC1/2**

Type: 5-pin header for LAN Activity LED connector

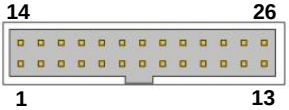
Pin	Description
1	LED-
2	LED+



A.6 <Parallel Port>

Connector: **LPT**

Type: 26-Pin box header



Pin	Description	Pin	Description
1	-PSTB	14	AFD-
2	PRO0	15	ERR-
3	PRO1	16	INT-
4	PRO2	17	SLIN-
5	PRO3	18	Ground
6	PRO4	19	Ground
7	PRO5	20	Ground
8	PRO6	21	Ground
9	PRO7	22	Ground
10	ACK-	23	Ground
11	BUSY	24	Ground
12	PE	25	Ground
13	SLCT	26	N/C

Appendix B <Flash BIOS>

B.1 <Flash Tool>

The board is based on Phoenix BIOS and can be updated easily by the BIOS auto flash tool. You can download the tool online at the address below:

http://www.phoenix.com/en/home/
http://www.commell.com.tw/Support/Support_SBC.htm

File name of the tool is "Pflash.exe", it's the utility that can write the data into the BIOS flash ship and update the BIOS.

B.2 <Flash BIOS Procedure>

1. Please make a bootable floppy disk.
2. Get the last .bin files you want to update and copy it into the disk.
3. Copy Pflash.exe to the disk.
4. Power on the system and flash the BIOS.

(Example: C:/Pflash/bbl/cvar/sa XXX.bin)

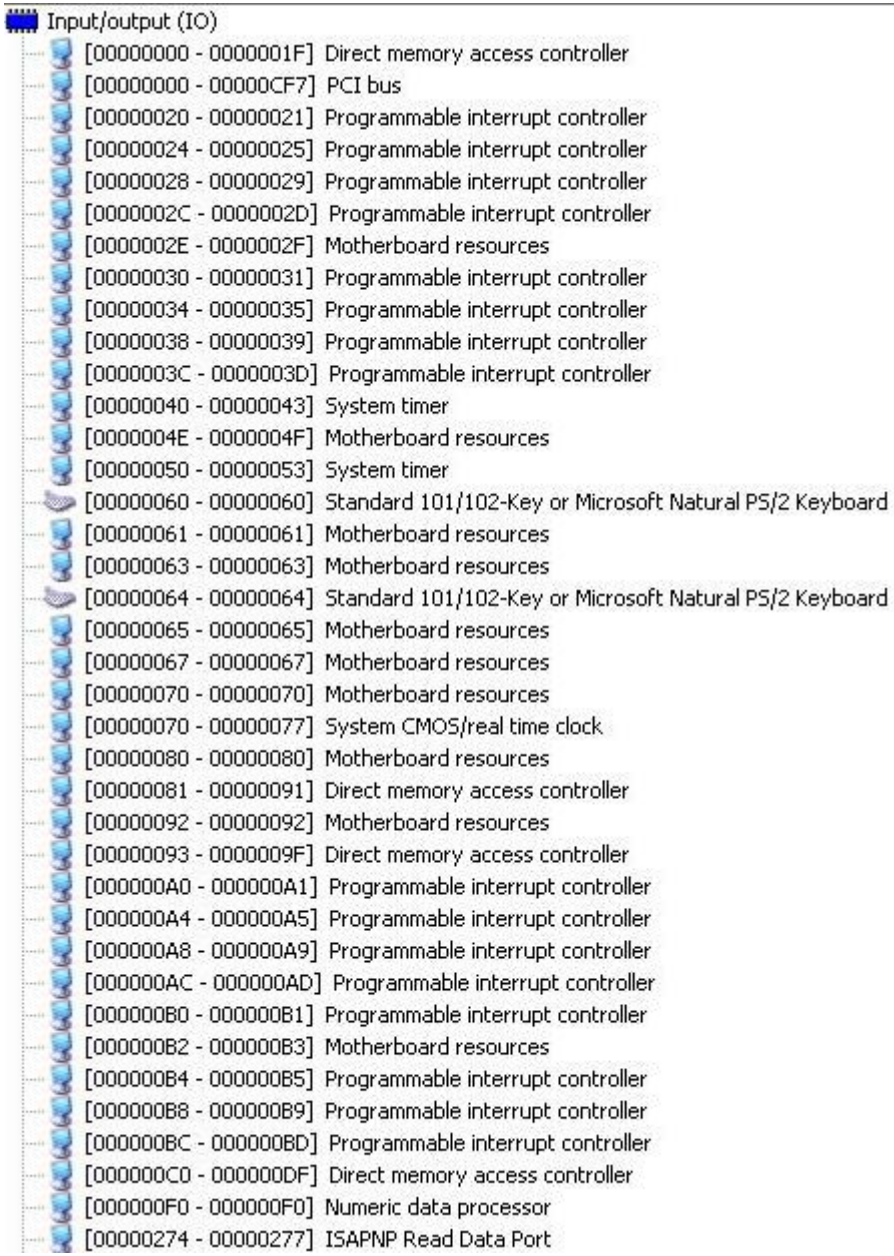
5. Restart the system.

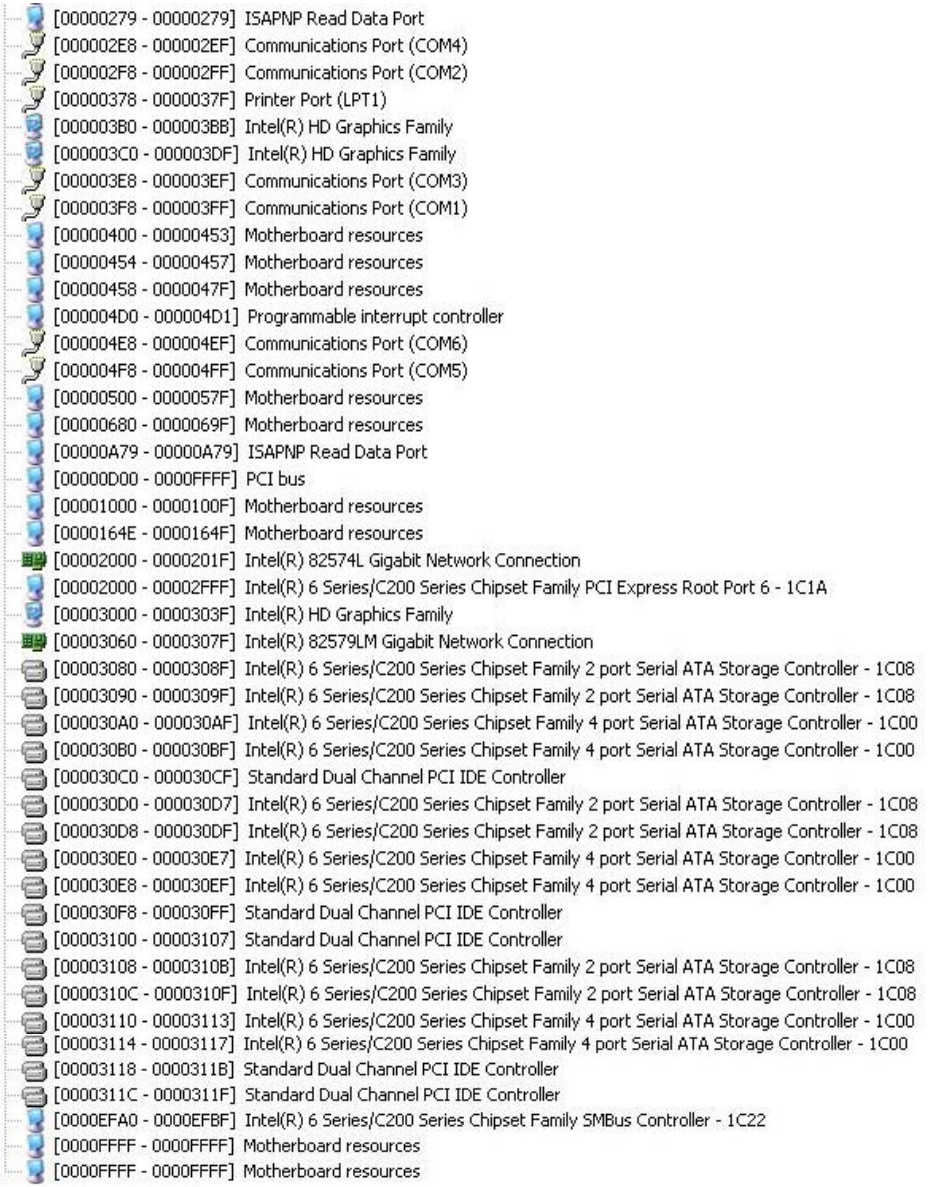
Any question about the BIOS re-flash please contact your distributors or visit the web-site at below:

http://www.commell.com.tw/support/support.htm

Appendix C <System Resources>

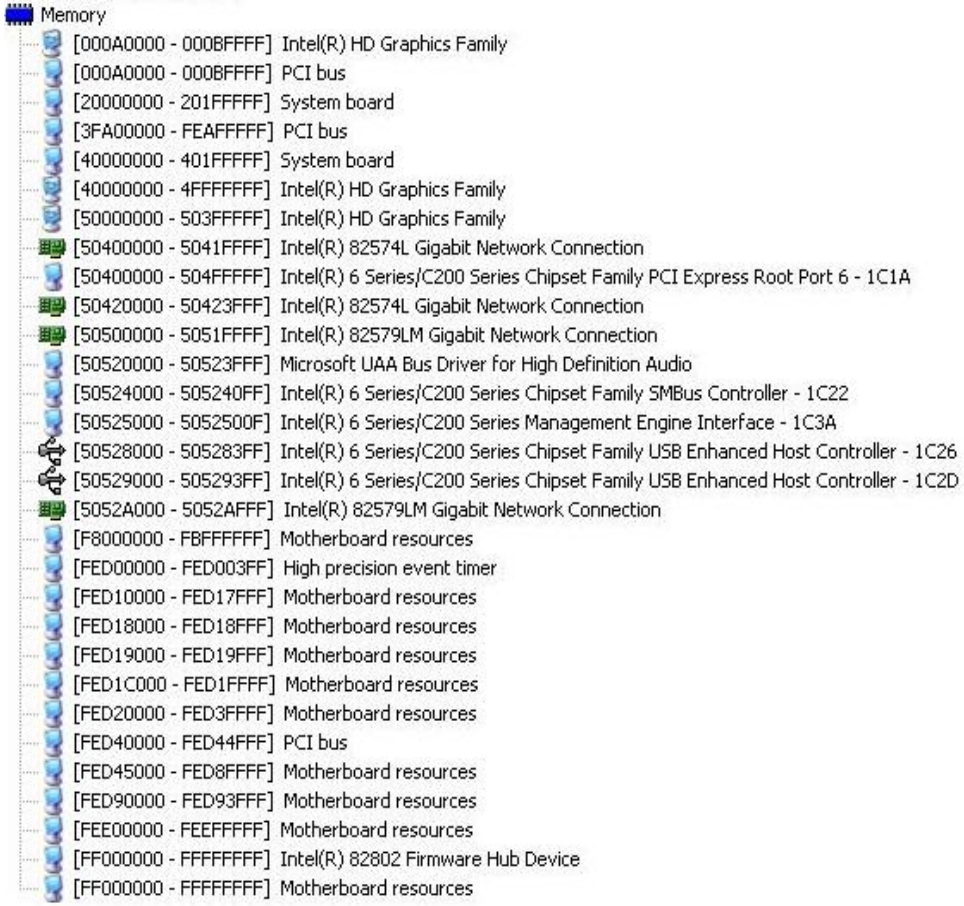
C.1 <I/O Port Address Map>




[00000279 - 00000279] ISAPNP Read Data Port
[000002E8 - 000002EF] Communications Port (COM4)
[000002F8 - 000002FF] Communications Port (COM2)
[00000378 - 0000037F] Printer Port (LPT1)
[000003B0 - 000003BB] Intel(R) HD Graphics Family
[000003C0 - 000003DF] Intel(R) HD Graphics Family
[000003E8 - 000003EF] Communications Port (COM3)
[000003F8 - 000003FF] Communications Port (COM1)
[00000400 - 00000453] Motherboard resources
[00000454 - 00000457] Motherboard resources
[00000458 - 0000047F] Motherboard resources
[000004D0 - 000004D1] Programmable interrupt controller
[000004E8 - 000004EF] Communications Port (COM6)
[000004F8 - 000004FF] Communications Port (COM5)
[00000500 - 0000057F] Motherboard resources
[00000680 - 0000069F] Motherboard resources
[00000A79 - 00000A79] ISAPNP Read Data Port
[00000D00 - 0000FFFF] PCI bus
[00001000 - 0000100F] Motherboard resources
[0000164E - 0000164F] Motherboard resources
[00002000 - 0000201F] Intel(R) 82574L Gigabit Network Connection
[00002000 - 00002FFF] Intel(R) 6 Series/C200 Series Chipset Family PCI Express Root Port 6 - 1C1A
[00003000 - 0000303F] Intel(R) HD Graphics Family
[00003060 - 0000307F] Intel(R) 82579LM Gigabit Network Connection
[00003080 - 0000308F] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[00003090 - 0000309F] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[000030A0 - 000030AF] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[000030B0 - 000030BF] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[000030C0 - 000030CF] Standard Dual Channel PCI IDE Controller
[000030D0 - 000030D7] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[000030D8 - 000030DF] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[000030E0 - 000030E7] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[000030E8 - 000030EF] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[000030F8 - 000030FF] Standard Dual Channel PCI IDE Controller
[00003100 - 00003107] Standard Dual Channel PCI IDE Controller
[00003108 - 0000310B] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[0000310C - 0000310F] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[00003110 - 00003113] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[00003114 - 00003117] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[00003118 - 0000311B] Standard Dual Channel PCI IDE Controller
[0000311C - 0000311F] Standard Dual Channel PCI IDE Controller
[0000EFA0 - 0000EFBF] Intel(R) 6 Series/C200 Series Chipset Family SMBus Controller - 1C22
[0000FFFF - 0000FFFF] Motherboard resources
[0000FFFF - 0000FFFF] Motherboard resources

C.2 <Memory Address Map>

Memory:



C.3 <System IRQ Resources>

IRQ:

Appendix D <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 2 E 87 ;enter configuration

-o 2E 87

-o 2E 07

-o 2F 09 ;enale GPIO function

-o 2E 30

-o 2F 02 ;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 valus of the bits ,'0' leaves them as they are

-o 2E 30

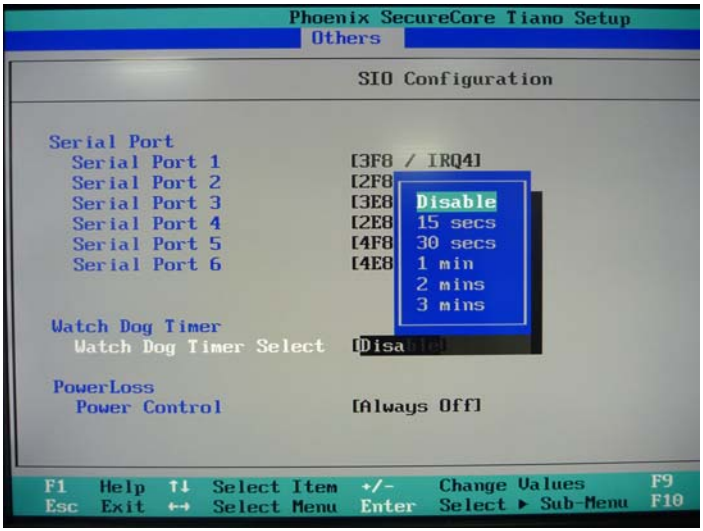
-o 2F 01 ; active GPIO's

For further information, please refer to Winbond W83627DHG-P datasheet.

Appendix E <Programming Watchdog Timer >

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	Activate
2F, 01	
2E, F5	Set as Second*
2F, 00	
2E, F6	Set as 5
2F, 05	

* 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.

Contact Information

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

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Twitter	https://twitter.com/Taiwan_Commate

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