FS-A73

PICMG1.3 Full-size CPU Card

User's Manual

Edition: 1.2
2018/01/24

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Packing List

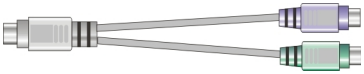
Please check package component before you use our products.

Hardware:

FS-A73 PICMG1.3 Full-size CPU Card motherboard x 1

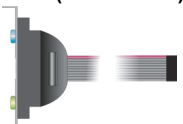
Cable Kit:

SATA-L Cable x 2
(OALSATA-L)/ (1040142)

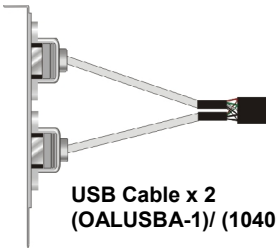


PS/2 Keyboard & Mouse Cable x 1
(OALPS2/MKN)/ (1040551)

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

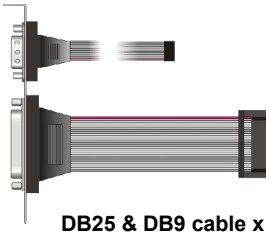


Audio Port Cable x 1
(OAPJ-HD)/ (1040120)

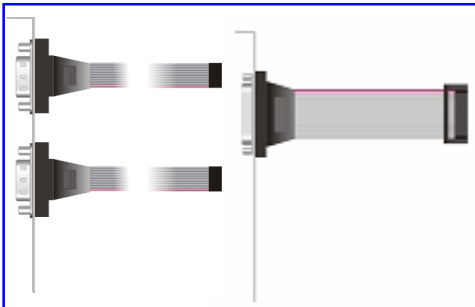


USB Cable x 2
(OALUSBA-1)/ (1040172)

CPU Cooler x 1
(OHS-P-M-H)/ (1190058)



DB25 & DB9 cable x 1
(FS-A73TXG/ TXDG/ T2XG Only)
(OAL1S1P)/ (1040041)



DB25 cable x 2 & DB9 cable x 1
(FS-A73TXG2/ TXDG2/ T2XG2 Only)
(OAL2S1P)/ (1040191)

VGA Cable x 1
(FS-A73T2XG/ T2XG2 only)

DVI Module With DVI Cable x 1
(BADPDVI-A & OALDVI-P)
(4120008021 & 1040075)
(FS-A73TXDG/ TXDG2 only)

Other Accessories:

Divers CD (including User's Manual) x 1

Index

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Chapter1 <Introduction>

1.1 <Product Overview>

FS-A73 is the Full-size single board computer with last Intel desktop technology with PICMG1.3 form factor. Based on Intel® QM57 and PCH, the board integrates a new Intel® Core™ i7, Core™ i5, Core™ i3, Celeron®, and Pentium® Mobile Processor 988A-pin Socket, DDR3 memory slot, Intel® HD Graphic technology, Serial ATA II with RAID function for a Mobile system.

Intel Arrandale and Clarkfield Processor

The board supports Intel Core i7 Core i5 and Core 3 Processors with, 8MB Intel® Smart Cache, to provide more powerful performance than before

New features for Intel QM57 chipset

The board integrates Intel QM57 chipset, to provide new generation of the mobile Solution, supports integrated HD Graphics, DDR3 800/1066 MHz memory, built-in high Speed mass storage interface of serial ATA, High Definition Audio with 2 channels Sound

All in One multimedia solution

Based on Intel QM57 chipset, the board provides high performance onboard graphics, 24-bit dual channel LVDS interface, DVI and 2 channels High Definition Audio, to meet the very requirement of the multimedia application

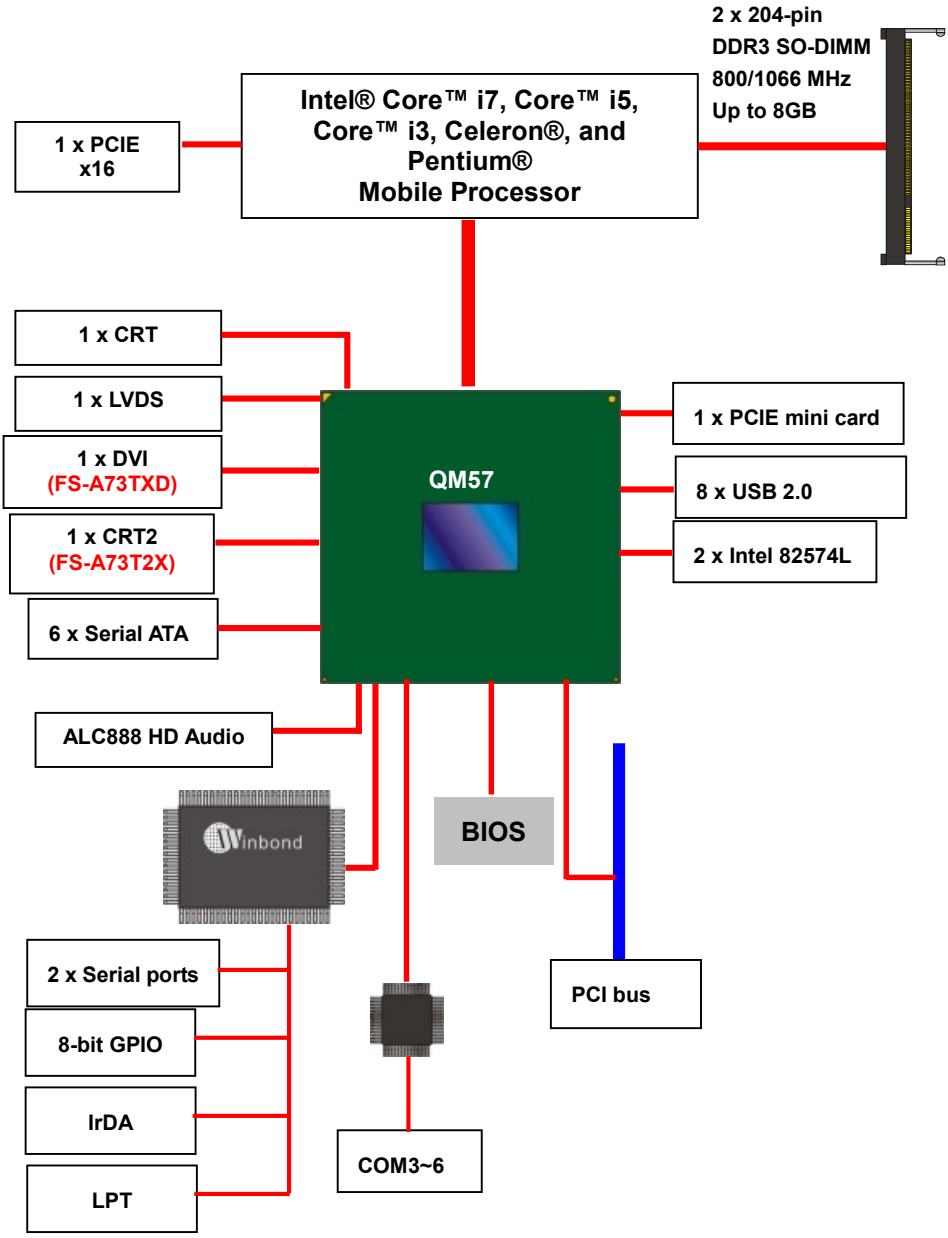
1.2 <Product Specification>

General Specification	
Form Factor	PICMG1.3 Full-size CPU Card motherboard
CPU	Intel® Core™ i7, Core™ i5, Core™ i3, Celeron®, and Pentium® Mobile Processor
Memory	2 x 240-pin DDR3 800/1066MHz SDRAM up to 4GB Unbufferred, none-ECC memory supported only
Chipset	Intel® QM57
BIOS	Phoenix-Award v6.00PG 32Mb SPI flash BIOS
Green Function	Supports ACPI 2.0 compliant.
Watchdog Timer	System reset programmable watchdog timer with 1 ~ 255 sec./min. of timeout value
Real Time Clock	Intel® PCH built-in RTC with lithium battery
Serial ATAII	Intel® PCH integrates 6 Serial ATA II interface RAID 0, 1,5,10 Intel Matrix Storage Technology supported
Multi-I/O Port	
Chipset	Intel® PCH with Winbond® W83627DHG Controller
Serial Port	Five 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® QM57 HD Graphic Technology
Frame Buffer	Up to 1024MB shared with system memory
Display Type	CRT, LCD monitor with analog display
Connector	External DB15 female connector on rear I/O panel
Ethernet Interface	
Controller	Two Intel 82574L Gigabit Ethernet controller
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
Audio Interface	
Chipset	Intel® PCH with 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

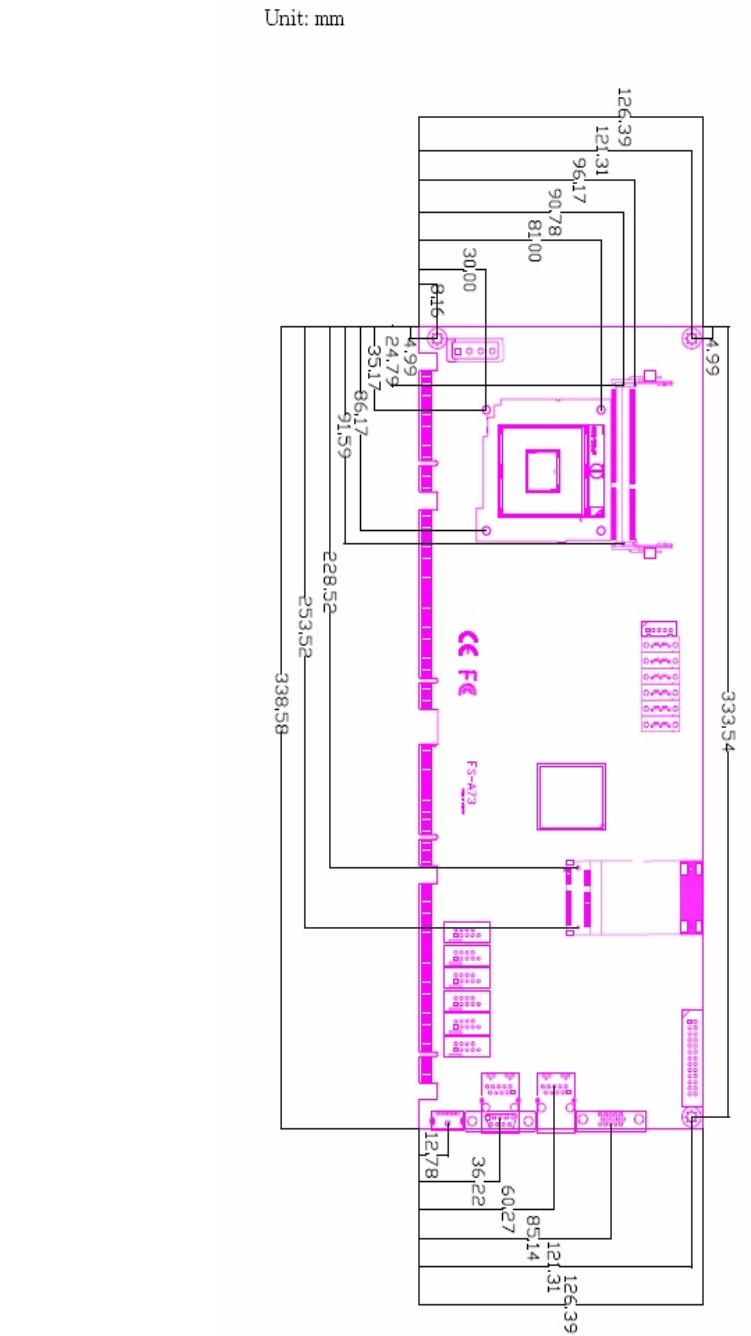
Expansive Interface	
PCI-Express	One X16 and one X4 or four X1 on PICMG 1.3 Interface
PCI	Four PCI bus master on PICMG 1.3 Interface
PCI-E mini card	One fall size PCI-E mini card
Power and Environment	
Power Requirement	+5V, +12 DC input & $5V_{SB}$ Requirement
Dimension	338 (L) x 126 (H) mm
Temperature	Operating within 0 ~ 60^{O}C (32 ~ 140^{O}F) Storage within –20 ~ 85^{O}C (-4 ~ 185^{O}F)
Ordering Code	
FS-A73TXG/G2	Intel PGA988+ QM57 Onboard VGA, LVDS, LAN, USB2.0, HD Audio, SATA, SMBUS,6 COM,
FS-A73TXDG/G2	Same as FS-A73X with 1x DVI Interface
FS-A73T2XG/G2	Same as FS-A73X with secondary CRT

The specifications may be different as the actual production.

1.3 <Block Diagram>

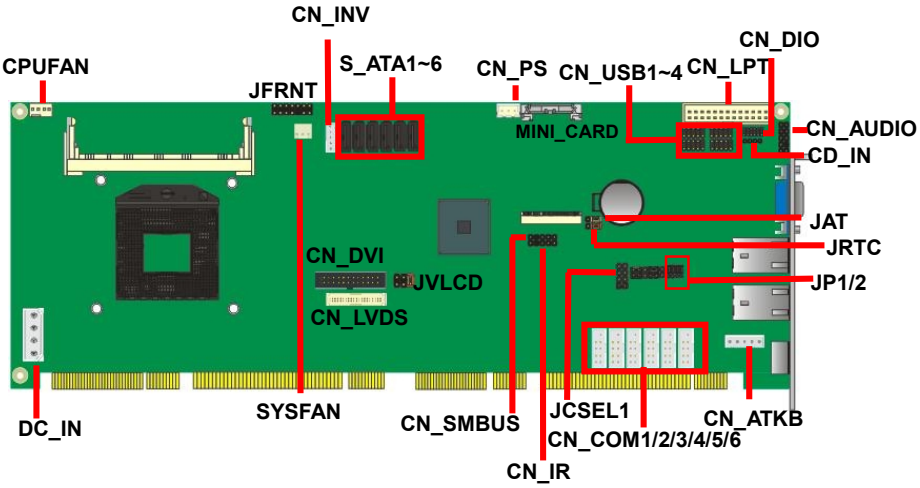


1.4 <Mechanical Drawing >

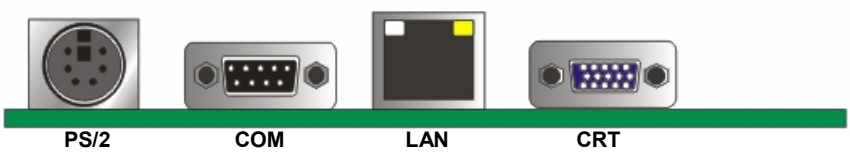


Chapter 2 <Hardware Setup>

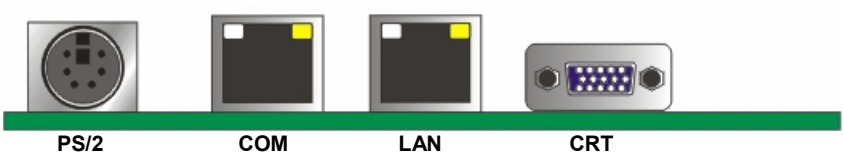
2.1 <Connector Location>



FS-A73TXG / TXDG / T2XG:

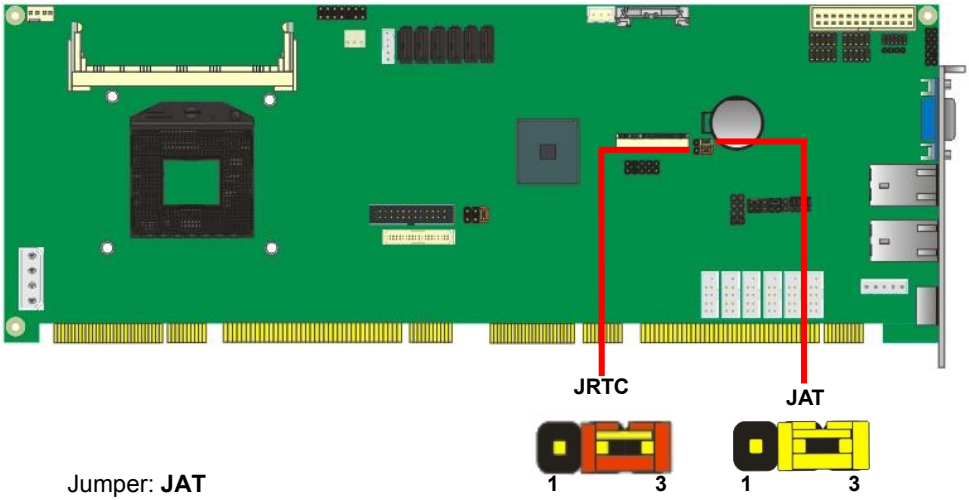


FS-A73TXG2 / TXDG2 / T2XG2:



2.2 <Jumper Reference>

Jumper	Function
JRTC	CMOS Operating/Clear Setting
JVLCD	Panel Voltage Setting
JAT	Power mode select
JP1	Com1 Voltage Setting
JP2	Com2 Voltage Setting



Jumper: **JAT**
Type: onboard 3-pin header

Power Mode	JAT
AT Mode	**1-2**
ATX Mode	**2-3**
Default setting: ATX Mode 	

2.3 <Connector Reference>

2.3.1 <Internal Connectors>

Connector	Function	Remark
CPU	Socket rPGA988A for PGA988 CPU	
SO-DIMM1/2	204 -pin DDR3 SO-DIMM socket	
SATA1/2/3/4/5/6	7-pin Serial ATA connector	
IDE	40-pin primary IDE connector	
CN_AUDIO	5 x 2-pin audio connector	
CD_IN	4-pin CD-ROM audio input connector	
CN_DIO	6 x 2-pin digital I/O connector	
CN_USB 1/2/3/4	5 x 2-pin USB connector	
CPUFAN	4-pin CPU cooler fan connector	
SYSFAN	3-pin system cooler fan connector	
CN_LVDS	20 x 2-pin LVDS connector	
CN_DVI	13 x 2-pin DVI connect	
CN_INV	5-pin LCD inverter connector	
CN_IR	5-pin IrDA connector	
JFRNT	14-pin front panel switch/indicator connector	
MINI_CARD	52-pin Mini-PCIE socket	
CN_COM1/2/3/4/5/6	9-pin RS232	
JAT	3-pin Power mode select	
JPT1/2	3-pin Com Voltage Setting	
CN_LPT	13 x 2-pin printer connector	

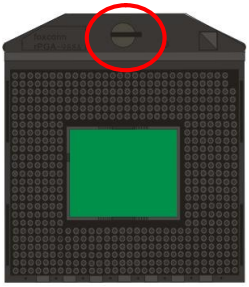
2.3.2 <External Connectors>

Connector	Function	Remark
RJ45_1/2	Two RJ45 LAN connector	
CRT	DB15 VGA connector	
PS2	PS/2 keyboard and mouse connector	

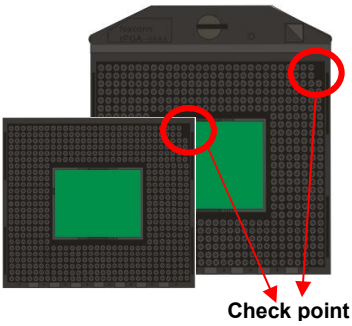
2.4 <CPU and Memory Setup>

2.4.1 <CPU Setup>

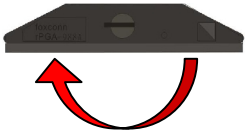
The board comes with the socket rPGA988A for Intel **Arrandale and Clarkfield** Processor, Intel® Smart 8MB Cache. Please follow the instruction to install the CPU properly.



1. Use the flat-type screw drive to unlock the CPU socket

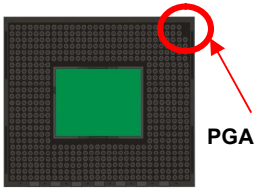


2. Follow the pin direction to install the processor on the socket



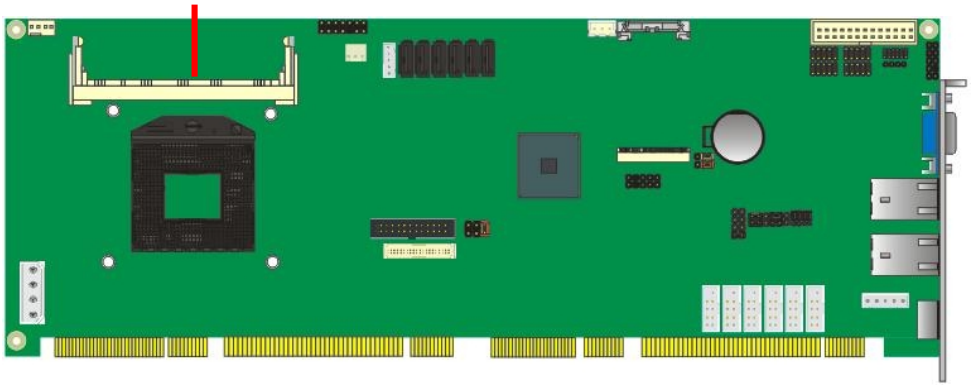
3. Lock the socket

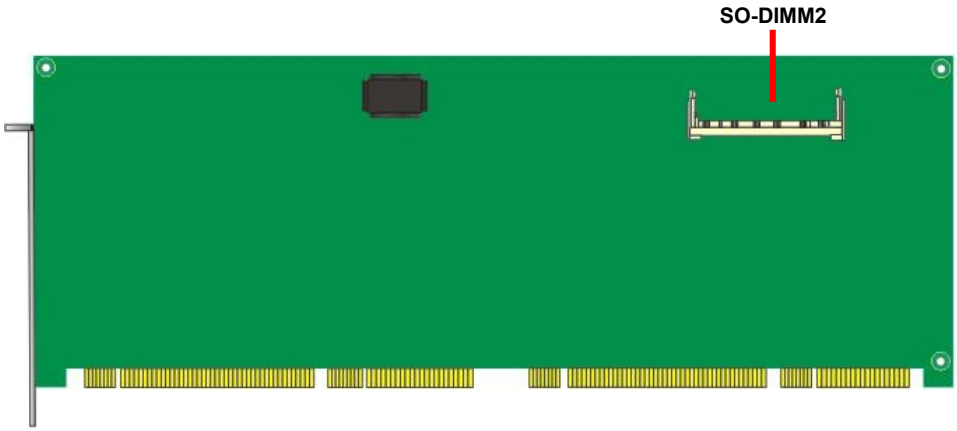
4. CPU socket has 988 pins



2.4.2 <Memory Setup>

The board provides 2 x 204-pin DDR3 SO-DIMM to support 800/1066MHz DDR3 memory module up to 8GB.





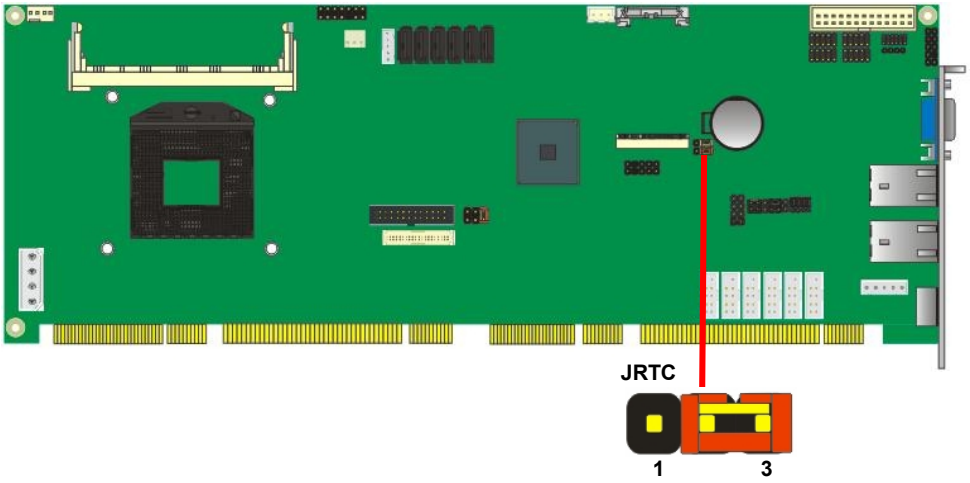
2.5 <CMOS Setup>

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 the 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>

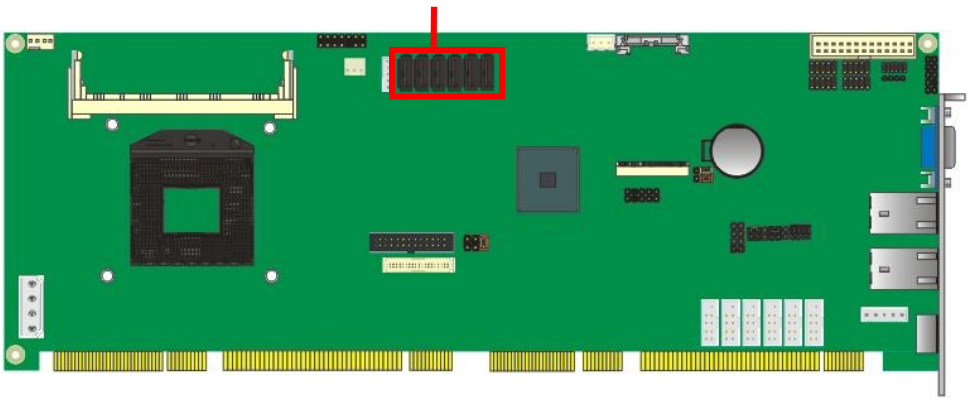
FS-A73 has Six Serial ATA II interfaces with RAID function, the transfer rate of the Serial ATA II can be up to 300MB/s. Please go to http://www.serialata.org/ for more about Serial ATA technology information. Based on Intel® ICH10DO, it supports **Intel® Matrix Storage Technology** with combination of RAID 0, 1, 5 and 10. The main features of RAID on 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.

S_ATA1~6



2.7 <Ethernet Interface>

The board integrates with two Intel 82574L Gigabit Ethernet 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

LAN_2 LAN_1

LAN_1

2.8 <Onboard Display Interface>

Based on Intel Arrandale CPU with built-in HD Graphic, the board provides one DB15 connector on real external I/O port, one 40-pin LVDS interface with 5-pin LCD backlight inverter connector optional or Secondary CRT connector (FS-A73T2XG/G2) and provides optional 26-pin DVI interface. (FS-A73TXDG/G2).

The board provides dual display function with clone mode and extended desktop mode for CRT, LCD and DVI.

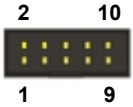
2.8.1 <Analog Display>

Please connect your CRT or LCD monitor with DB15 male connector to the onboard DB15 female connector on rear I/O port or optional Secondary CRT connector Dip 10 Pin (FS-A73T2XG/G2)

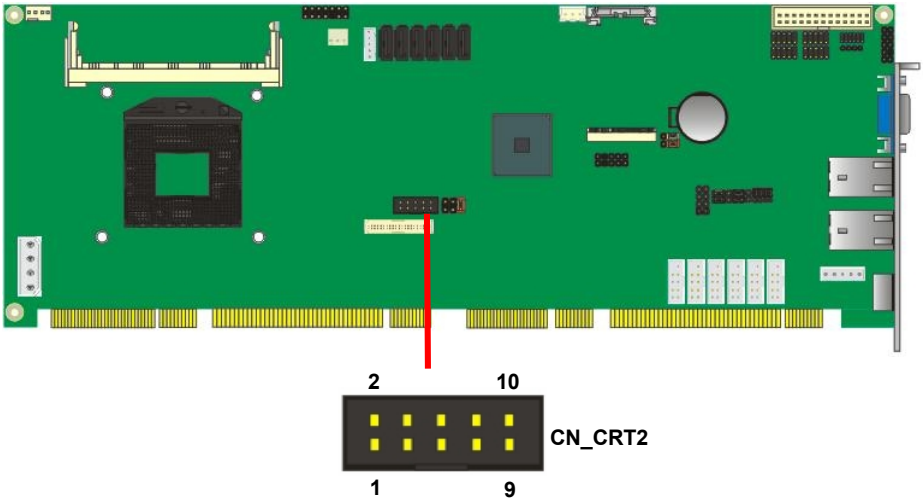
CRT

Connector: **CN_CRT2**

Type: onboard 10-pin connector for CRT2 (Pitch = 2.00mm)

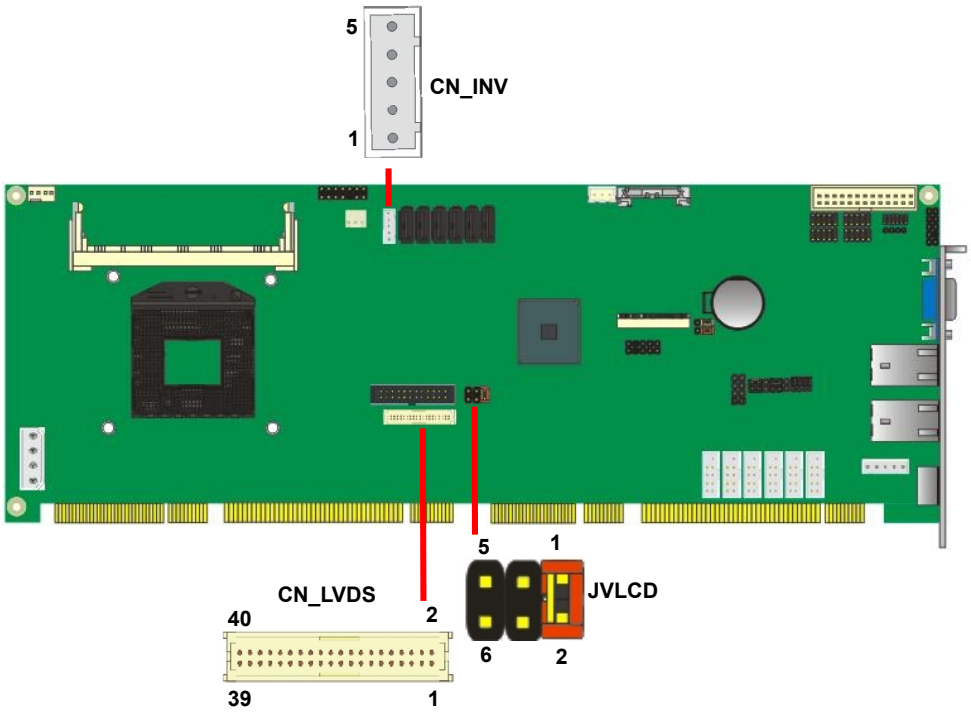


Pin	Signal	Pin	Signal
2	CRT2 DDC_DA	1	CRT2 DDC_DC
4	CRT2 R	3	GND
6	CRT2 G	5	CRT2 B
8	CRT2 HSYNC	7	CRT2 VSYNC
10	GND	9	GND



2.8.2 <Digital Display>

The board provides one 40-pin LVDS connector for 24-bit single/dual channel panels, supports up to 1920 x 1200 (UXGA) resolutions, with one LCD backlight inverter connector and one jumper for panel voltage setting.



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

Warning: others cause damages

Connector: **CN_INV**

Type: 5-pin LVDS Power Header

Pin	Description
1	+12V
2	Reserved (Note)
3	GND
4	GND
5	ENABKL

Note: Reserved for MB internal test
Please treat it as NC.

Connector: **JVLCD**

Type: 6-pin Power select Header

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

Default: 1-2

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	DDCPCLK	35	N/C
38	DDCPDATA	37	N/C
40	N/C	39	N/C

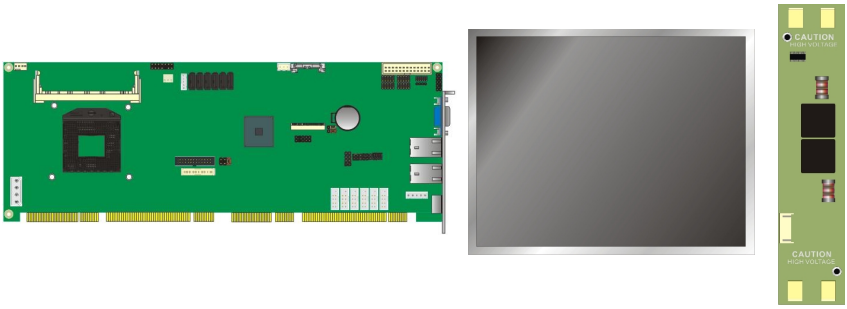
To setup the LCD, you need the component below:

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

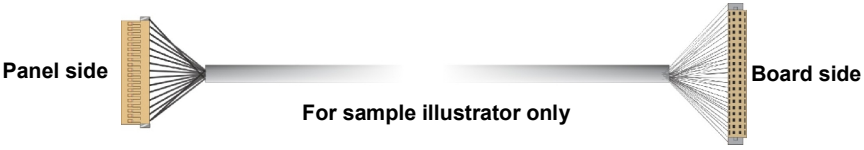
For the cables, please follow the pin assignment of the connector to make a cable, because every panel has its own pin assignment, so we do not provide a standard cable; please find a local cable manufacture to make cables.

LCD Installation Guide:

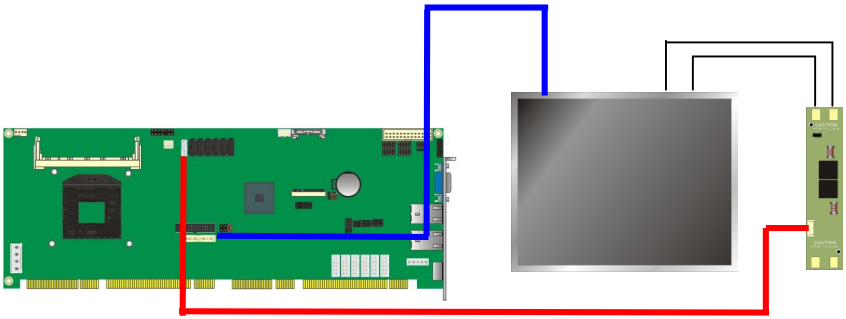
1. Preparing the **FS-A73**, **LCD panel** and the **backlight inverter**.



2. Please check the datasheet of the panel to see the voltage of the panel, and set the jumper **JVLCD** to +12V or +5V or +3.3V.
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 (BIOS Version:1.0)			
18-bit Single channel		24-bit Dual channel	
NO.	Output format	NO.	Output format
1	640 x 480	11	1280 x 768
2	800 x 480	12	1280 x 1024
3	800 x 600	13	1600 x 1200
4	1024 x 768	14	1920 x 1080
5	1280 x 800	15	1920 x 1200
18-bit Dual channel			
6	1280 x 768		
24-bit Single channel			
7	1024 x 768		
8	1280 x 768		
9	1280 x 800		
10	1366 x 768		

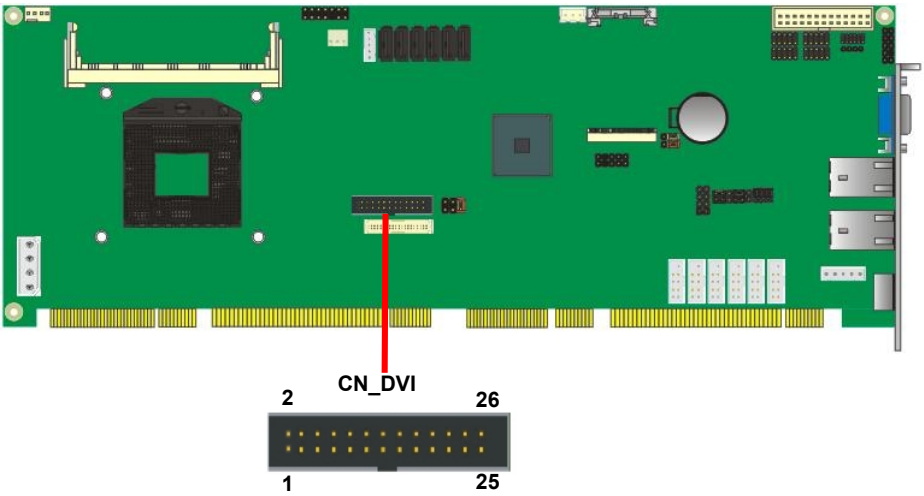
2.8.3 <DVI Interface>

The board provides an option 26-pin DVI interface (FS-A73TXDG2/FS-A73TXDG)

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



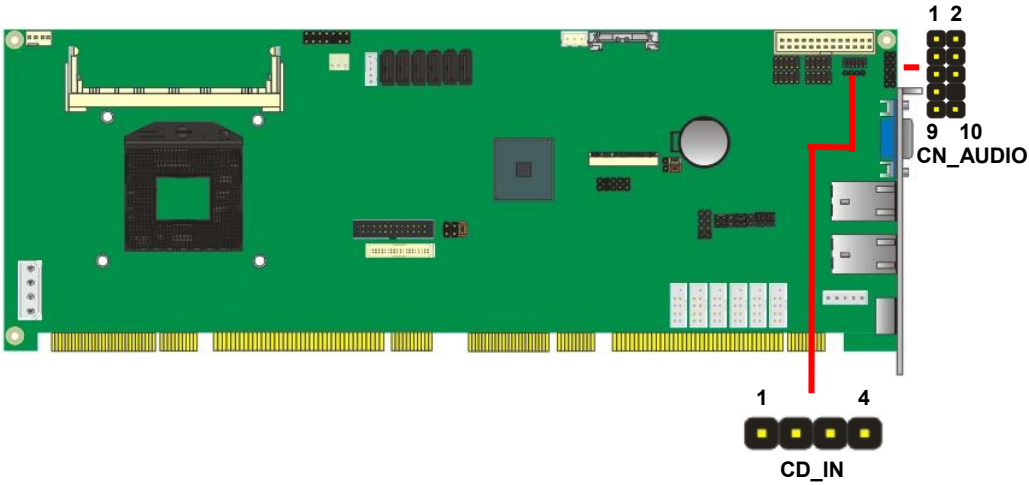
2.9 <Integrated Audio Interface>

The board integrates onboard audio interface with REALTEK ALC888 codec, with Intel next generation of audio standard as High Definition Audio, it offers more 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 AC'97**
- **Meets Microsoft WHQL/WLP 2.0 audio requirements**

The board provides 2 channels audio phone jacks on rear I/O port, and 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	Reserve
5	Speaker_R	6	MIC Detect
7	SENSE	8	N/C
9	Speaker_L	10	Speaker Detect

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

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

2.10 <GPIO and SMBUS Interface>

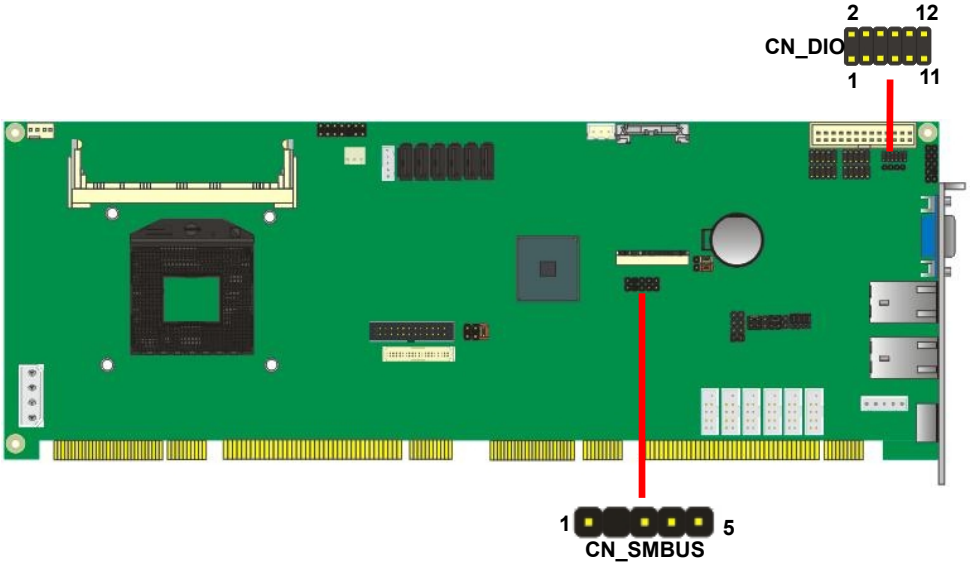
The board provides a programmable 8-bit digital I/O interface; you can use this general purpose I/O port for system control like POS or KIOSK.

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	VCC	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

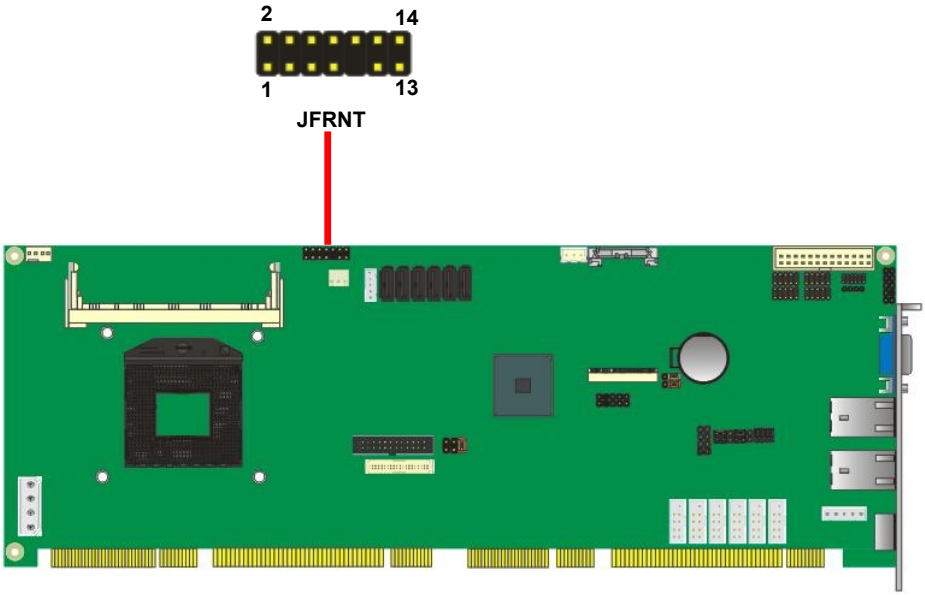


2.11 <Switch and Indicator>

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-	

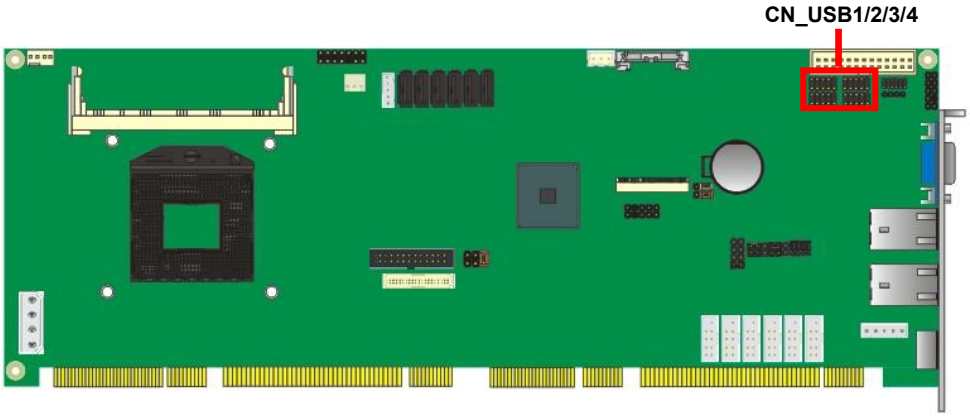


2.12 <USB Installation>

FS-A73 integrates eight USB2.0 ports. The specifications of USB2.0 are listed below:

Interface	USB2.0
Controller	Intel QM57 PCH
Transfer Rate	Up to 480Mb/s
Voltage	5V

The Intel® QM57 PCH contains two Enhanced Host Controller Interface (EHCI) and five Universal Host Controller Interfaces (UHCI), it can determine whether your connected device is for USB1.1 or USB2.0, and change the transfer rate automatically.

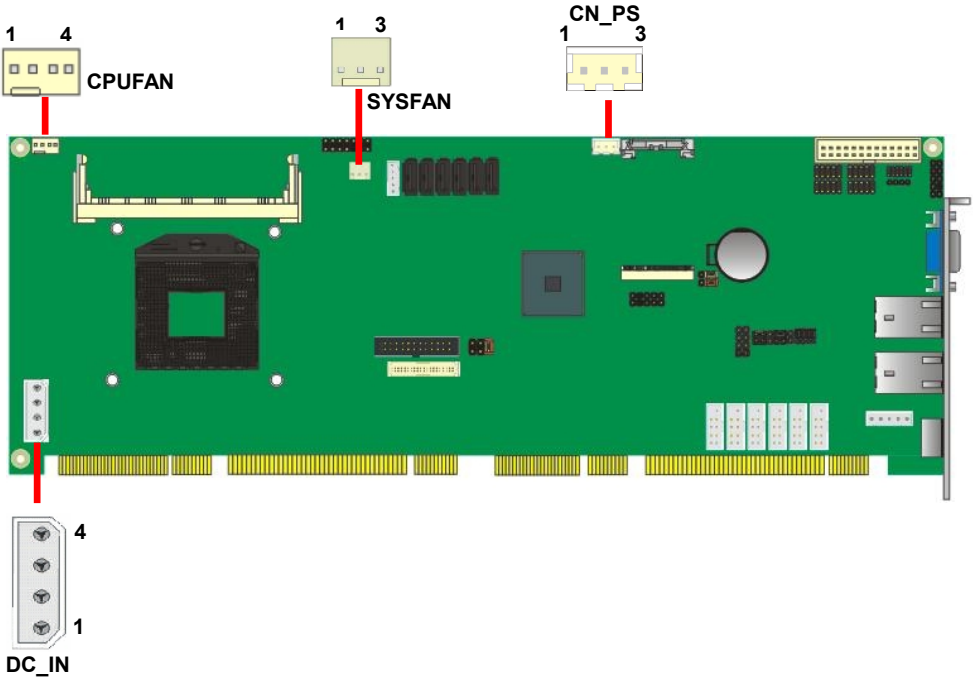


Connector: **CN_USB1/2/3/4**
Type: 10-pin (5 x 2) header for USB1/2/3/4 Ports

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

2.13 <Power and Fan Installation>

The **FS-A73** 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 3-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 P-type connector for +5V/+12V input

Pin	Description	Pin	Description	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

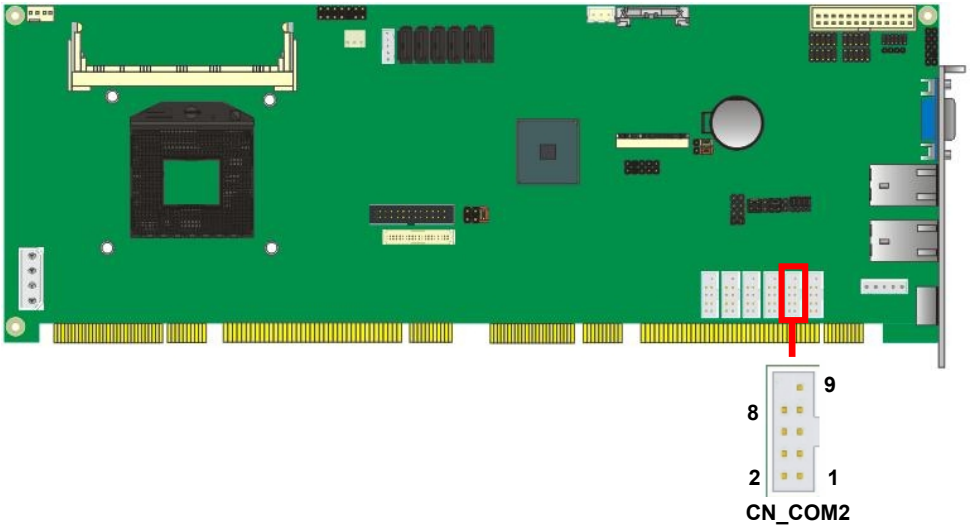
Pin	Description	Pin	Description	Pin	Description
1	Ground	2	+12V	3	Sense

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

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

2.14 <Serial Port>

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

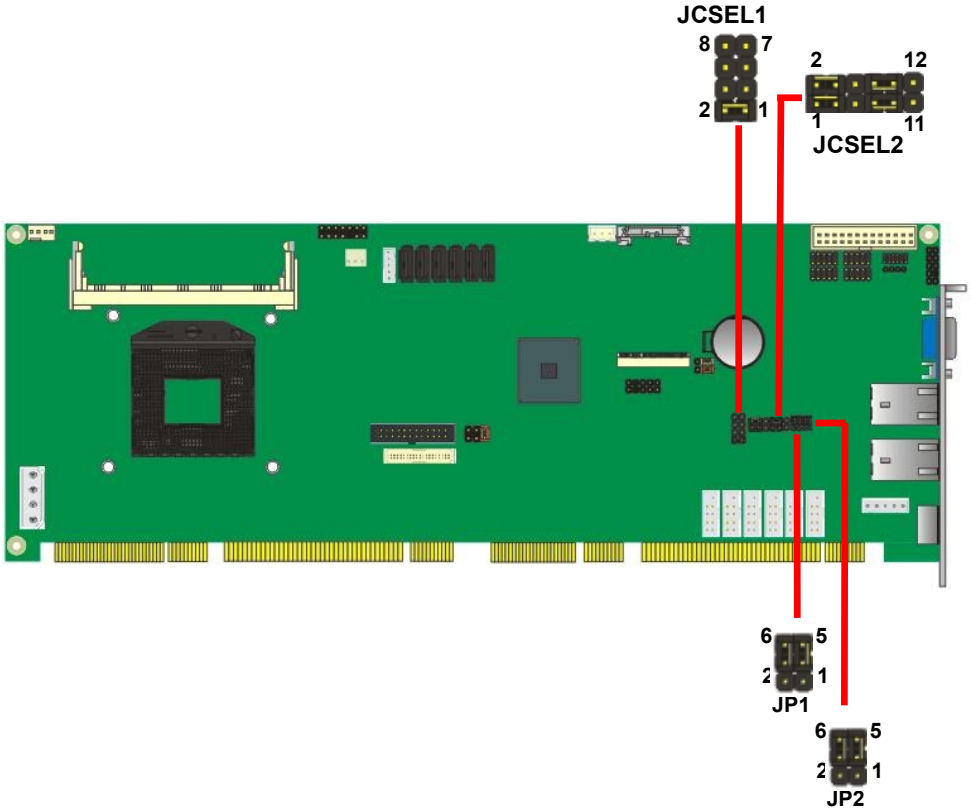


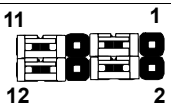
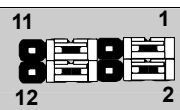
Connector: **CN_COM2**

Type: 9-pin D-sub male connector on bracket 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

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



Function	JCSEL1	JCSEL2
SIR		
RS-422		
RS-485		
RS-232		

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

Jumper: **JP1/JP2 (COM1/2)**
Type: onboard 6-pin header

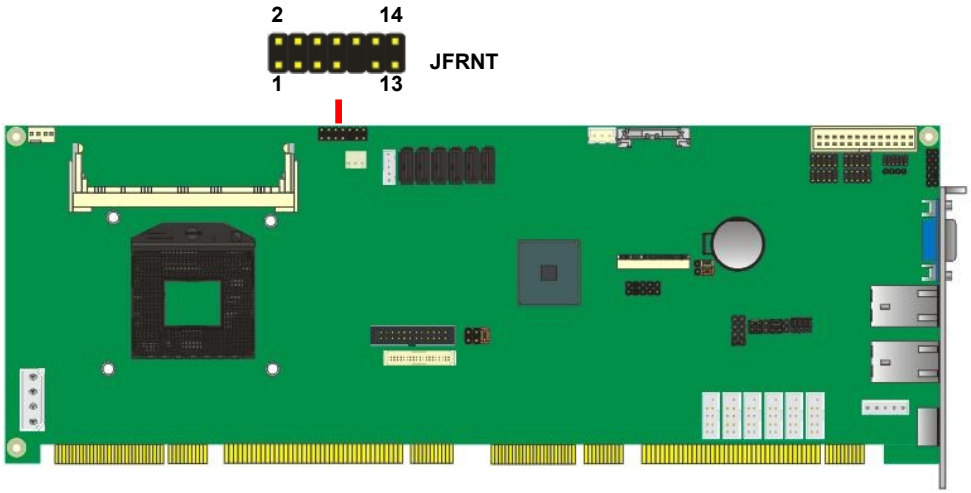
Power Mode	JP1/JP2
Pin 1 with 5V Power	1-3,4-6
Pin 9 with 12V Power	2-4,3-5
Default setting: 3-5, 4-6	

2.15 <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	PWDLED+	Power LED
	HDLED-	3	4	N/C	
Reset	Reset+	5	6	PWDLED-	
	Reset-	7	8	SPKIN+	Speaker
N/C		9	10	N/C	
Power Button	PWRBT+	11	12	N/C	
	PWRBT-	13	14	SPKIN-	



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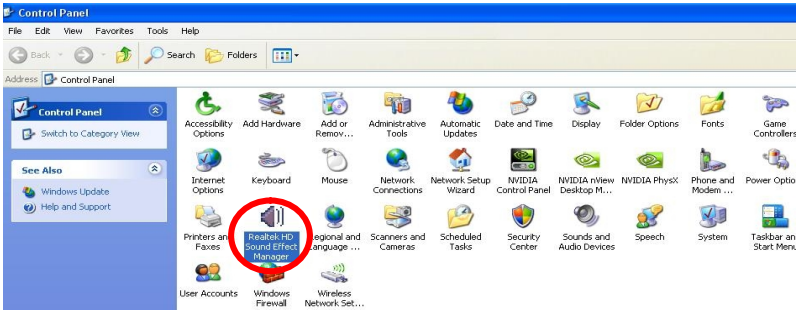
Chapter 3 <System Setup>

3.1 <Audio Configuration>

The board integrates Intel® QM57 with REALTEK® ALC888 codec. 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.



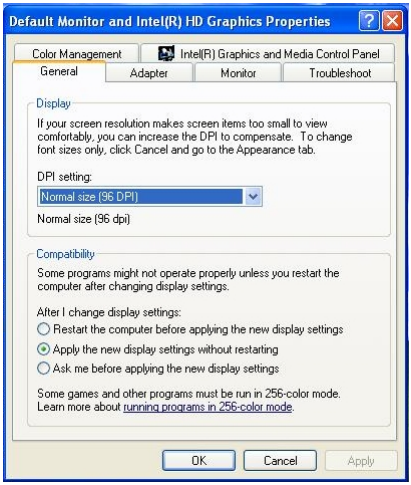
3. Select Speaker Configuration

3.2 <Display Properties Setting>

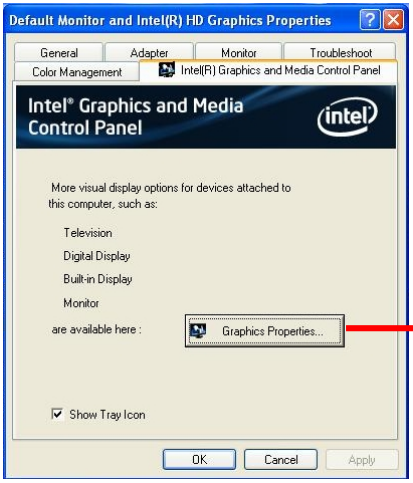
Based on Intel HD Graphic, the board supports two DACs for display device as different resolution and color bit.

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

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



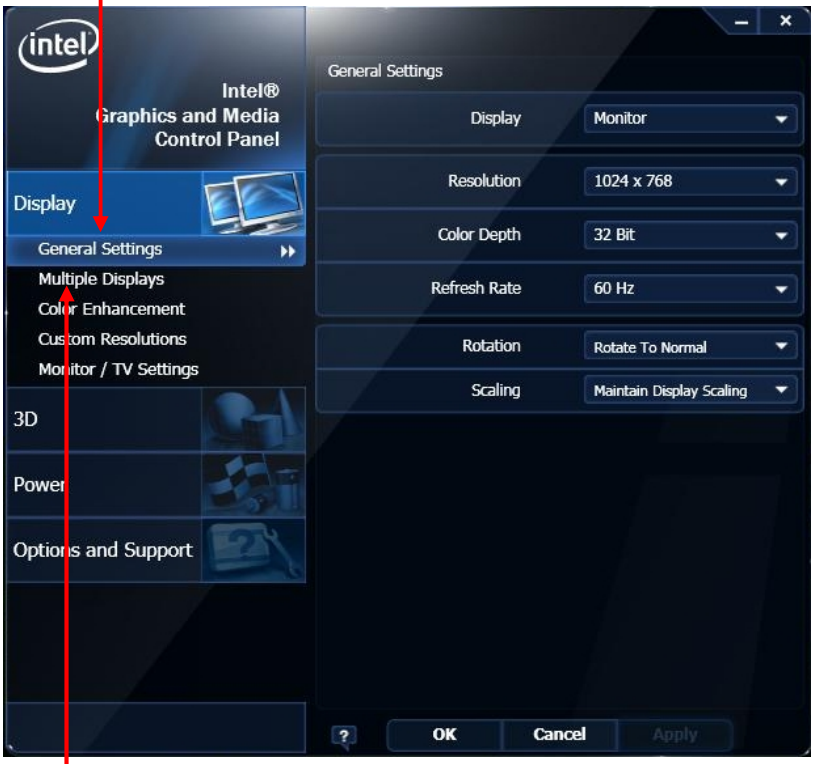
2. Click **Advanced** button for more specificity setup.



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>

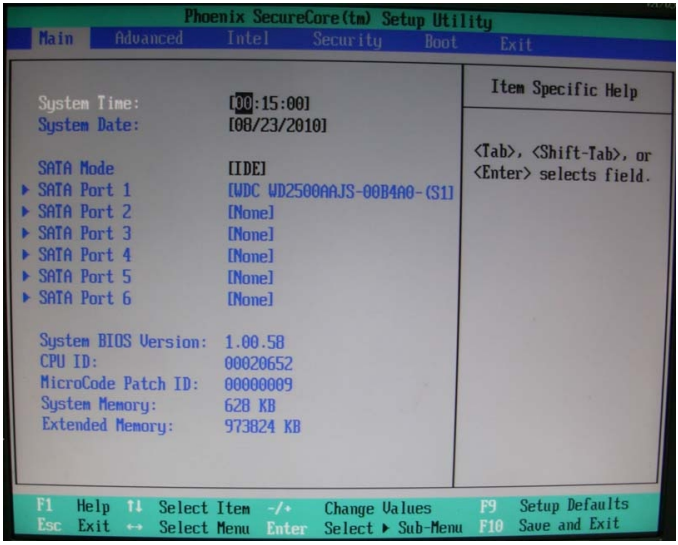
The motherboard uses the Phoenix BIOS for the system configuration. The Phoenix BIOS in the single board computer is a customized version of the industrial standard BIOS for IBM PC AT-compatible computers. It supports Intel x86 and compatible CPU architecture based processors and computers. The BIOS 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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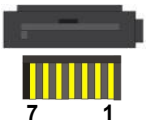
Appendix A <I/O Port Pin Assignment>

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

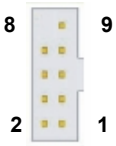
JCSEL1 must jump to "SIR"

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

A.3 <Serial Port >

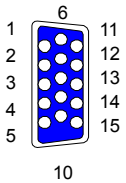
Connector: **COM1/2/3/4/5/6**

Type: 9-pin header connector for COM4/5/6



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

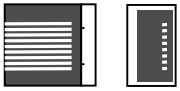
A.4 <VGA Port>



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

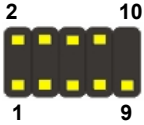
A.5 <LAN Port>



Connector: **RJ45_1/2**
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.6 < USB Interface >

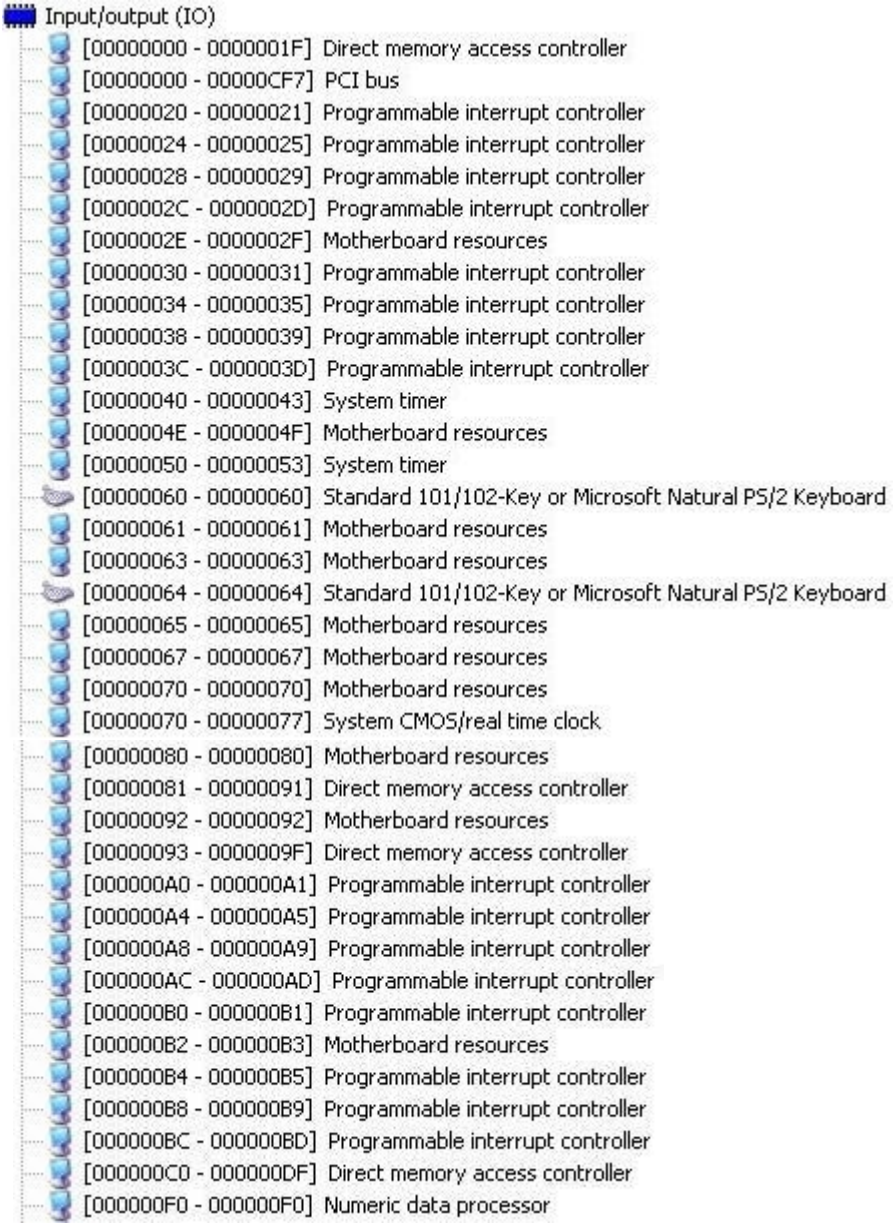


Connector: **CN_USB 1/2/3/4**
Type: 10-pin (5 x 2) header for dual USB Ports

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

Appedix B <System Resources>

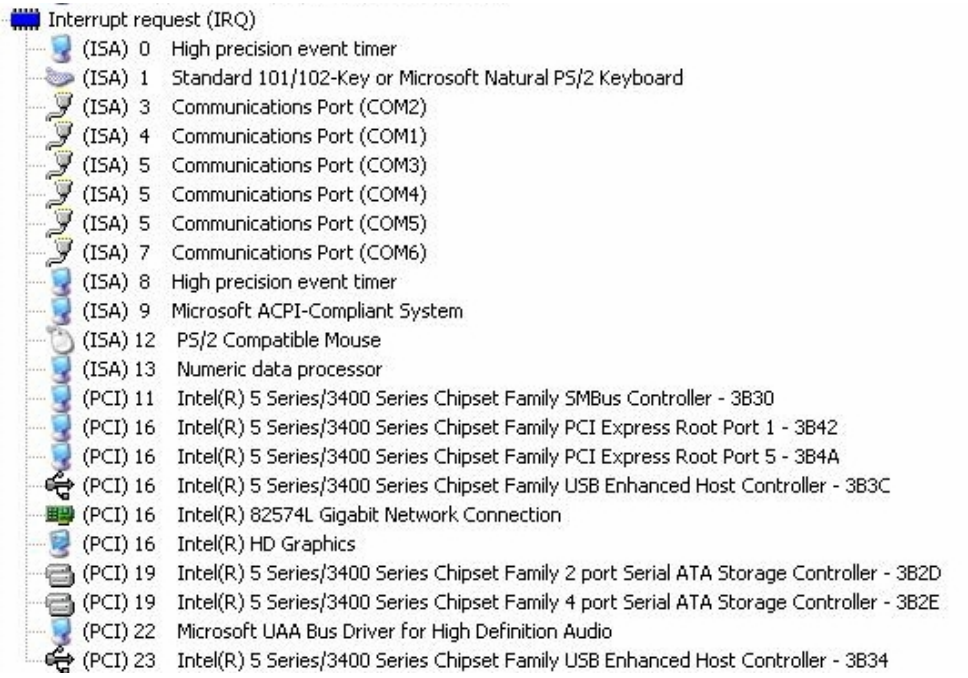
B.1 <I/O Port Address Map>



[00000274 - 00000277] ISAPNP Read Data Port
[00000279 - 00000279] ISAPNP Read Data Port
[000002E8 - 000002EF] Communications Port (COM4)
[000002F8 - 000002FF] Communications Port (COM2)
[00000378 - 0000037F] ECP Printer Port (LPT1)
[000003B0 - 000003BB] Intel(R) HD Graphics
[000003C0 - 000003DF] Intel(R) HD Graphics
[000003E8 - 000003EF] Communications Port (COM3)
[000003F8 - 000003FF] Communications Port (COM1)
[00000400 - 0000047F] Motherboard resources
[000004D0 - 000004D1] Programmable interrupt controller
[000004E8 - 000004EF] Communications Port (COM6)
[000004F8 - 000004FF] Communications Port (COM5)
[00000500 - 0000050F] Motherboard resources
[00000600 - 00000603] Motherboard resources
[00000680 - 0000069F] Motherboard resources
[000006A0 - 000006AF] Motherboard resources
[000006B0 - 000006FF] Motherboard resources
[00000778 - 0000077F] ECP Printer Port (LPT1)
[00000A79 - 00000A79] ISAPNP Read Data Port
[00000D00 - 0000FFFF] PCI bus
[00001180 - 000011FF] Motherboard resources
[0000164E - 0000164F] Motherboard resources
[00006800 - 00006807] Intel(R) HD Graphics
[00006810 - 0000681F] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[00006820 - 0000682F] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[00006830 - 00006833] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[00006834 - 00006837] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[00006838 - 0000683F] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[00006840 - 00006847] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[00006848 - 0000684B] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[0000684C - 0000684F] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[00006850 - 0000685F] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[00006860 - 0000687F] Intel(R) 5 Series/3400 Series Chipset Family SMBus Controller - 3B30
[00006880 - 0000688F] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[00006890 - 00006897] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[00006898 - 0000689F] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[00007000 - 0000701F] Intel(R) 82574L Gigabit Network Connection
[00007000 - 00007FFF] Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 5 - 3B4A
[0000FFFF - 0000FFFF] Motherboard resources

B.2 <Memory Address Map>

B.3 <System IRQ Resources>



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 07

-o 2F 09 ; enable 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 datasheet.

Appendix E <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	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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Commell is a brand name of Taiwan commate computer Inc.