integration with integrity

3301710 User's Manual

SFull-SIze PICMG 1.0 SBC LGA 775

Version 1.0 November 2008

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Chapter 1

Introduction

1.1 Copyright Notice

The information in this document is subject to change without prior notice in order to improve the reliability, design and function. It does not represent a commitment on the part of the manufacturer.
Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.

1.2 About this User's Manual

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

1.3 Warning

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

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

1.4 Replacing the lithium battery

Incorrect replacement of the lithium battery may lead to a risk of explosion. The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.
Do not throw lithium batteries into the trashcan. It must be disposed of in accordance with local requlations concerning special waste.

1.5 Technical Support

If you have any technical difficulites, please consult the user's manual first

Please do not hesitate to call or e-mail our customer service when you still can not find out the answer.

http://www.globalamericaninc.com

1.7 Packing List

1x 3301710 Full Size Intel Pentium D LGA775 SBC

1x 6-in-1 cable kits

1x CD-ROM (For Driver used)

1x Quick Installation Guide

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

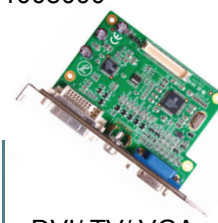
1.8 Ordering Information

3301710A	Full-Size Intel LGA775 Pentium D SBC with CRT, SATA, PCI-Express Gigabit LAN
3301710B	Full-Size Intel LGA775 Core 2 Duo SBC with CRT, SATA, PCI-Express Gigabit LAN
1008040	ALC655 Audio board with bracket
1008050	DVI/ TV/ VGA daughter board with Bracket
1008000	4 x COM/ DIO (60.20 x 46.00 mm)

1008040

ALC655 Audio daughter board

1008000



DVI/ TV/ VGA daughter board

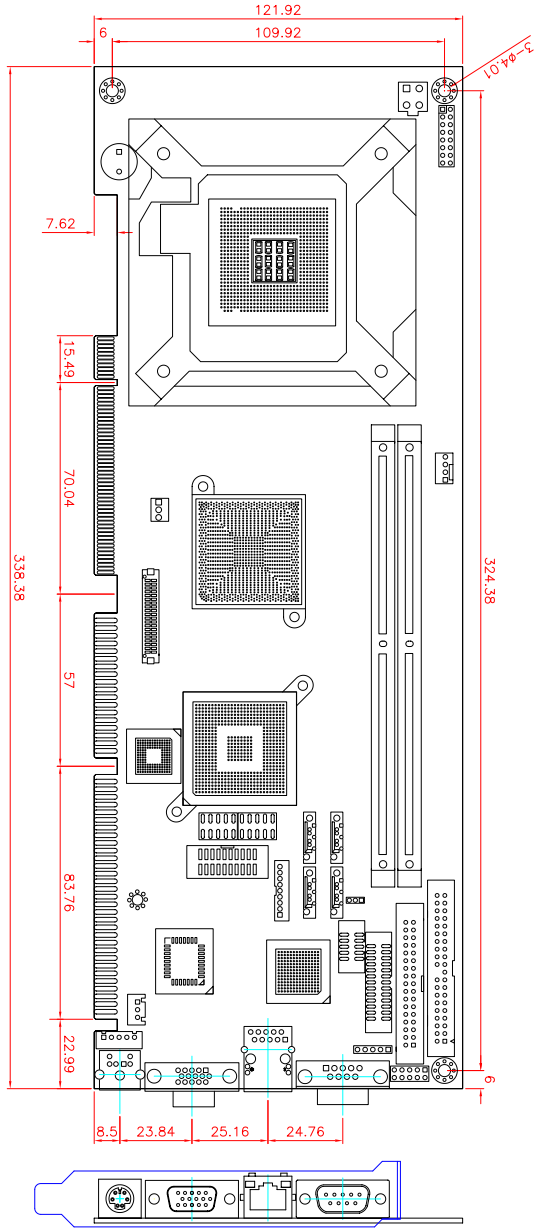
1008050

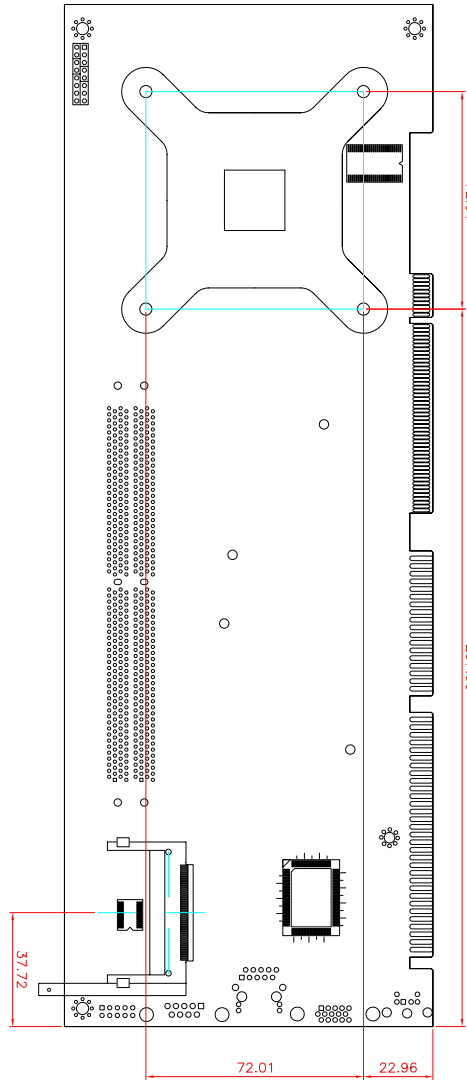
4 x COM/ DIO daughter board

1.9 Specification

Form Factor	Full Size LGA775 SBC
Processor	Intel Core 2 Duo/ Pentium D/ Celeron D/ Pentium 4 processor LGA775 socket, w/ 1066/800/533MHz FSB, w/ HT
Chipset	Intel 945G + Intel ICH7
System Memory	♦ 2 x 240-pin DIMM socket up to 2GB ♦ Dual Channel DDR2 667/533/400MHz SDRAM, supports Non-ECC memory only
VGA/ LCD Controller	Intel® Graphics Media Accelerator (GMA) 950 graphics core w/ CRT (Dual independent display) and DVI (by 1008050)
Ethernet	1 x 82573V 100/1000 base-T PCI-Express Gigabit LAN
I/O Chips	WINBOND W83627HG
BIOS	4MB Phoenix-Award BIOS
Audio	AC'97 2.3 Codec, MIC-in/Line-in/Line-out (by 1008040)
Serial ATA	4 x Serial ATA II with 300MB/s
IDE Interface	1 x Ultra DMA 100, support 2 IDE drives
Flash Disk	1 x Type II CompactFlash
Serial Port	2 x COM port (RS-232)
Expansion COM + DIO	4 x COM + 16-bit DIO (1008000)
Parallel Port	1 x SPP/EPP/ECP mode
FDD	1 x Floppy connector
KBMS	1 x 6-pin Mini-DIN KBMS
Universal Serial Bus	6 x USB 2.0 (by pin header)
Expansion Interface	16-bit ISA + 32-bit PCI (doesn't support ISA master bus device)
Hardware Monitor Chip	♦ CPU/System temperature and over heat Alarm ♦ 12V/5V/3.3V/Vcore/Vbat/5Vsb/3.3Vsb Voltage ♦ CPU/System Fan speed ♦ CPU over heat Protection
RTC	Real Time Clock
Power Input Connector	+12V 4 pin ATX Power Connector
Operating Temp.	0ºC - 50ºC
Watchdog Timer	255-level Reset
Dimension (L x W)	338 x 122mm (13.3" x 4.8")

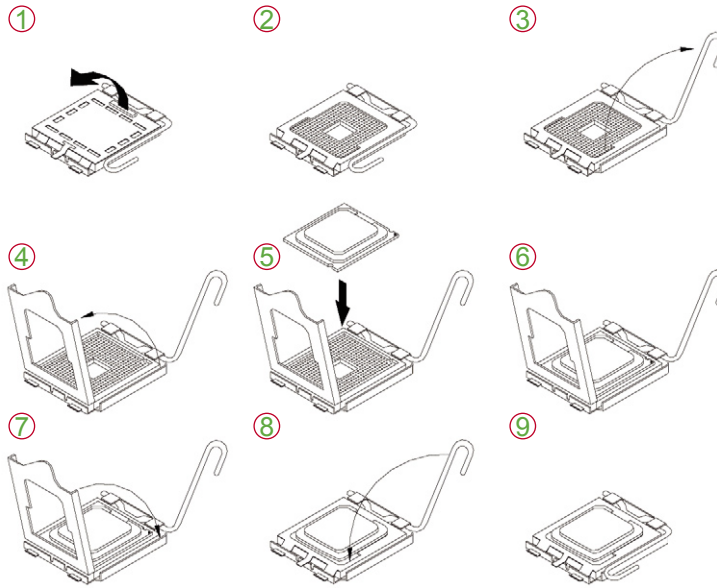
1.10 Board Dimensions




72.01
237.53
37.72
72.01
22.96

1.11 Installing the CPU

The LGA 775 processor socket comes with a lever to secure the processor. Please refer to the pictures step by step as below.
Please note that the cover of the LGA775 socket must always be installed during transport to avoid damage to the socket.

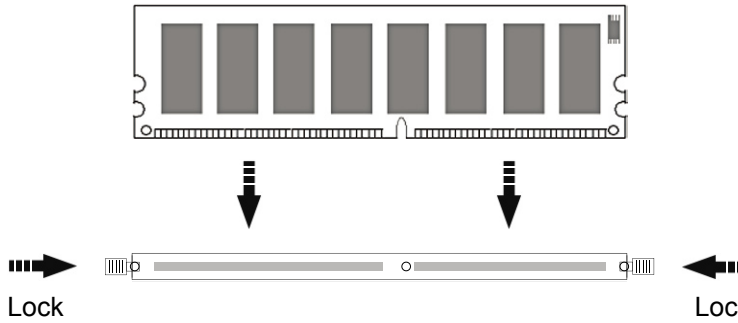


Make sure that heat sink of the CPU top surface is in complete contact to avoid the CPU overheating problem.
If not, it would cause your system or CPU to be hanged, unstable, damaged.

1.12 Installing the Memory

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

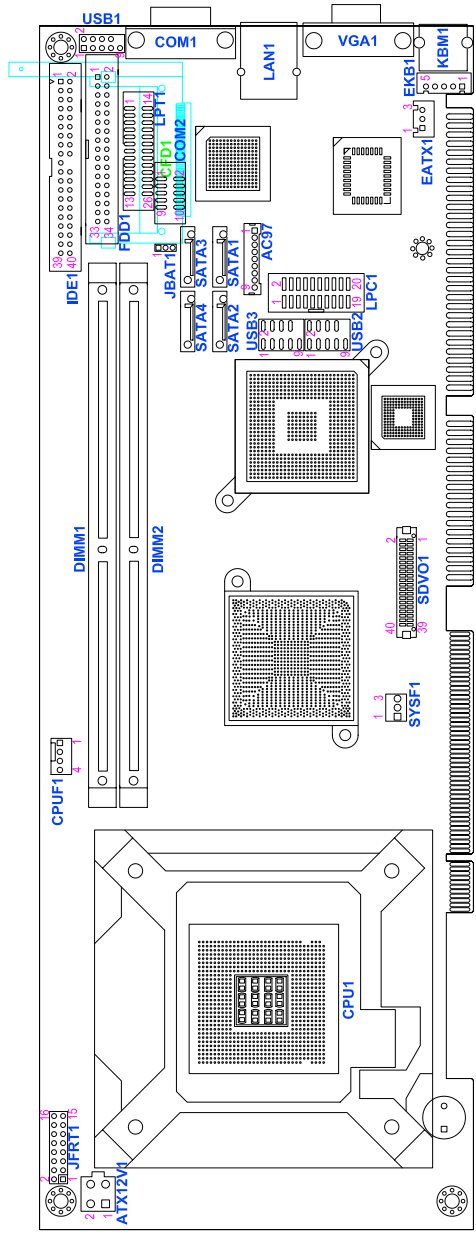
1. Hold the Memory module so that the key of the Memory module align with those on the Memory DIMM slot.
2. Gently push the Memory module in an upright position and a right way until the clips of the DIMM slot close to lock the Memory module in place, when the Memory module touches the bottom of the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



Chapter 2

Installation

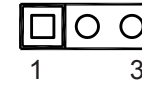
2.1 Jumpers and Connectors



Jumpers

2.2 JBAT1: CMOS Setup

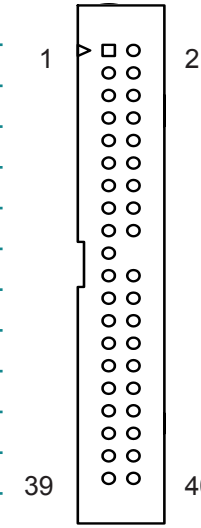
Pin	Mode
1-2	Keep CMOS (Default)
2-3	Clear CMOS



Connectors

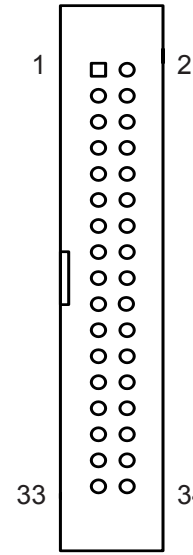
2.3 IDE1: Primary 40-pin IDE Connector

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



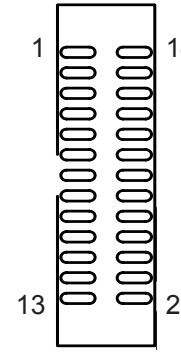
2.4 FDD1: FDD Connector

Pin	Description	Pin	Description
1	GND	2	DRVDEN0
3	GND	4	N/C
5	GND	6	DRVDEN1
7	GND	8	-INDEX
9	GND	10	-MOA
11	GND	12	-DSB
13	GND	14	-DSA
15	GND	16	-MOB
17	GND	18	-DIR
19	GND	20	-STEP
21	GND	22	-WDATA
23	GND	24	-WGATE
25	GND	26	-TRACK0
27	GND	28	-WP
29	GND	30	-RDATA
31	GND	32	-HEAD
33	GND	34	-DSKCHG



2.5 LPT1: Parallel Port Connector

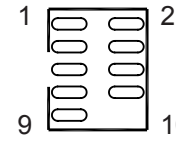
Pin	Description	Pin	Description
1	STROBE	14	AFD
2	PTD0	15	ERROR
3	PTD1	16	INIT
4	PTD2	17	SLIN
5	PTD3	18	GND
6	PTD4	19	GND
7	PTD5	20	GND
8	PTD6	21	GND
9	PTD7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT	26	N/C



2.6 USB1/ USB2/ USB3: USB Connector

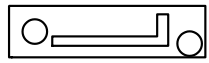
USB1/ USB2/ USB3 supports two USB 2.0 w/ 480MB/s by pin header

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



2.7 SATA1/ 2/ 3/ 4: Serial ATA 1, 2, 3, 4 Connector

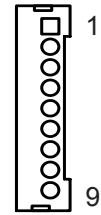
High speed transfer rates (300MB/sec)



2.8 AC97: Audio Daughterboard Connector

AC97 supports SCDB-1110 daughter board

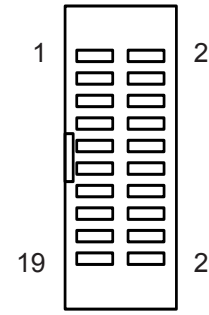
Pin	Description
1	+12V
2	+3.3V
3	AC_SYNC
4	AC_SDOUT
5	GND
6	AC_BITCLK
7	GND
8	AC_RST-
9	AC_SDIN0



2.9 LPC1: External Low Pin Count Connector

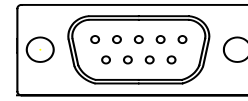
LPC1 supports SCDB-1293 daughter board

Pin	Description	Pin	Description
1	+5V	2	+5V
3	LDRQ-	4	LFRAME-
5	SERIRQ	6	GND
7	LAD2	8	LAD3
9	LAN0	10	LAD1
11	PCIRST-	12	GND
13	SMBUS DATA	14	33MHZ CLOCK
15	GND	16	SMBUS CLOCK
17	48MHZ CLOCK	18	LPC PME-
19	+3.3V	20	+3.3V



2.10 COM1: RS232 Connector

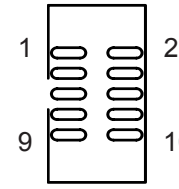
Pin	Description	Pin	Description
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND1	6	DSR1
7	RTS1	8	CTS1
9	RI1		



COM1

2.11 COM2: RS232 Connector

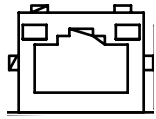
Pin	Description	Pin	Description
1	DCD2	2	RXD2
3	TXD2	4	DTR2
5	GND2	6	DSR2
7	RTS2	8	CTS2
9	RI2	10	N/C



COM2

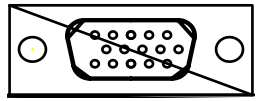
2.12 LAN1: 10/100/1000 RJ-45

LAN1 supports 10/100/1000 Mbps Fast Ethernet



LAN1

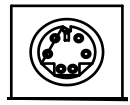
2.13 VGA1: CRT Display



CRT

2.14 KBM1: PS/2 Keyboard & Mouse

Standard Mini-Din PS/2 Keyboard & Mouse connector



KBMS

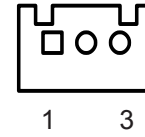
2.15 EKB1: External Keyboard Connector

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

1 5

2.16 EATX1: ATX Feature Connector

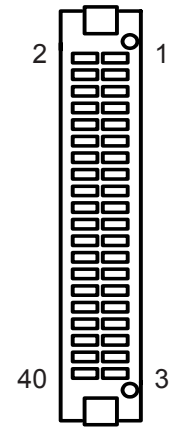
Pin	Description
1	PS-ON
2	GND
3	5V_SB



2.17 SDVO1: SDVO Daughterboard Connector

SDVO1 supports FCDB-1225 daughter board

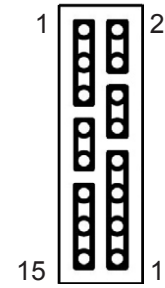
Pin	Description	Pin	Description
2	+5V	1	+5V
4	SDVOB_CLK+	3	SDVOB_R+
6	SDVOB_CLK-	5	SDVOB_R-
8	GND	7	GND
10	SDVOB_INT+	9	SDVOB_G+
12	SDVOB_INT-	11	SDVOB_G-
14	GND	13	GND
16	CRTLCLK	15	SDVOB_B+
18	CRTLDATA	17	SDVOB_B-
20	+3.3V	19	GND
22	+3.3V	21	RESET
24	SDVOC_CLK+	23	SDVOC_R+
26	SDVOC_CLK-	25	SDVOC_R-
28	GND	27	GND
30	SDVO_TVCLK+	29	SDVOC_G+
32	SDVO_ TVCLK -	31	SDVOC_G-
34	GND	33	GND
36	SDVO_STALL+	35	SDVOC_B+
38	SDVO_STALL-	37	SDVOC_B-
40	+2.5V	39	+2.5V



2.18 JFRT1: Switches and Indicators

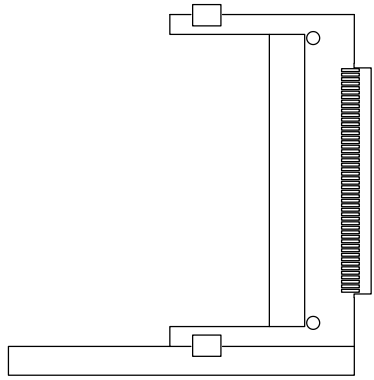
It provides connectors for system indicators that provides light indication of the computer activities and switches to change the computer status.

Pin	Description	Pin	Description
1	Power LED+	2	PWRBTN+
3	GND	4	PWRBTN-
5	GND	6	RESET+
7	HDD LED+	8	RESET-
9	HDD LED-	10	SPEAKER+
11	SMBCLK	12	SPEAKER+
13	SMBDATA	14	SPEAKER-
15	GND	16	SPEAKER-



2.19 CFD1: CompactFlash II Socket

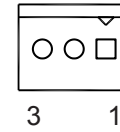
After hot-swapping CF II, you must retart your system for device detecting. Default setting: IDE slave.



2.20 SYSF1: System Fan Power Connector

SYSF1 is a 3-pin header for the system fan. The fan must be a 12V fan.

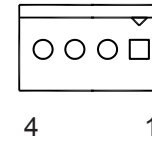
Pin	Description
1	GND
2	+12V
3	FAN_CTL



2.21 CPUF1: CPU Fan Power Connector

CPUF1 is a 4-pin header for the CPU fan. The fan must be a 12V fan.

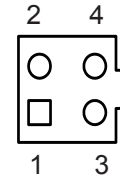
Pin	Description
1	GND
2	+12V
3	Fan_ DETECT
4	Fan Speed Control



2.22 ATX12V1: CPU Power Connector

ATX12V1 supplies the CPU operation ATX 12V (Vcore).

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



Chapter 3

Appendix

4.1 I/O Port Address Map

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

Address	Device Description
00000000 - 00000CF7	PCI bus
00000060 - 00000060	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
00000064 - 00000064	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
00000070 - 00000073	System CMOS/real time clock
000001F0 - 000001F7	Primary IDE Channel
00000274 - 00000277	ISAPNP Read Data Port
00000279 - 00000279	ISAPNP Read Data Port
000002F8 - 000002FF	Communications Port
00000378 - 0000037F	Printer Port
000003B0 - 000003BB	Intel(R) 82945G Express Chipset Family
000003C0 - 000003DF	Intel(R) 82945G Express Chipset Family
000003F0 - 000003F5	Standard floppy disk controller
000003F6 - 000003F6	Primary IDE Channel
000003F7 - 000003F7	Standard floppy disk controller
000003F8 - 000003FF	Communications Port
00000778 - 0000077B	Printer Port
00000A79 - 00000A79	ISAPNP Read Data Port
00000D00 - 0000FFFF	PCI bus
0000D000 - 0000DFFF	Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D0
0000DF00 - 0000DF1F	Intel(R) PRO/1000 PM Network Connection
0000F500 - 0000F50F	Intel(R) 82801GB/GR/GH (ICH7 Family) Serial ATA Storage Controller - 27C0
0000F600 - 0000F603	Intel(R) 82801GB/GR/GH (ICH7 Family) Serial ATA Storage Controller - 27C0

0000F700 - 0000F707	Intel(R) 82801GB/GR/GH (ICH7 Family) Serial ATA Storage Controller - 27C0
0000F800 - 0000F803	Intel(R) 82801GB/GR/GH (ICH7 Family) Serial ATA Storage Controller - 27C0
0000F900 - 0000F907	Intel(R) 82801GB/GR/GH (ICH7 Family) Serial ATA Storage Controller - 27C0
0000FA00 - 0000FA0F	Intel(R) 82801G (ICH7 Family) Ultra ATA Storage Controllers - 27DF
0000FB00 - 0000FB1F	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB
0000FC00 - 0000FC1F	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CA
0000FD00 - 0000FD1F	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C9
0000FE00 - 0000FE1F	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8
0000FF00 - 0000FF07	Intel(R) 82945G Express Chipset Family
D0000000 - DFFFFFFF	Intel(R) 82945G Express Chipset Family
FDD00000 - FDDFFFFF	Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D0
FDDE0000 - FDDFFFFF	Intel(R) PRO/1000 PM Network Connection
FDE00000 - FDEFFFFF	Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D0
FDF00000 - FDF7FFFF	Intel(R) 82945G Express Chipset Family
FDF80000 - FDFBFFFF	Intel(R) 82945G Express Chipset Family
FDFFF000 - FDFFF3FF	Intel EHCI Compliance Test Tool
000A0000 - 000BFFFF	Intel(R) 82945G Express Chipset Family
000A0000 - 000BFFFF	PCI bus
000C0000 - 000DFFFF	PCI bus
3F700000 - FEBFFFFF	PCI bus

4.2 Interrupt Request Lines (IRQ)

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

Level	Function
IRQ 1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
IRQ 3	Communications Port
IRQ 4	Communications Port
IRQ 6	Standard floppy disk controller
IRQ 8	System CMOS/real time clock
IRQ 9	Microsoft ACPI-Compliant System
IRQ 12	PS/2 Compatible Mouse
IRQ 14	Primary IDE Channel
IRQ 16	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB
IRQ 16	Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D0
IRQ 16	Intel(R) 82945G Express Chipset Family
IRQ 16	Intel(R) PRO/1000 PM Network Connection
IRQ 18	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CA
IRQ 19	Intel(R) 82801GB/GR/GH (ICH7 Family) Serial ATA Storage Controller - 27C0
IRQ 19	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C9
IRQ 23	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8
IRQ 23	Intel EHCI Compliance Test Tool

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