Global AMERICAN

integration with integrity

3307960 User's Manual

5.25" Embedded Controller

Version 1.0

RoHS VERIFIED

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Table of Contents

Chapter 1

Introduction

1.1 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 Global American before further handling.

1.2 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

1.3 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.

1.4 Technical Support

If you have any technical difficulites, please contact Global American at (800) 833-8999.

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1.5 Packing List

Before you begin installing your single board computer, please make sure that the following materials have been shipped:

	1 x 3307960 embedded board
	1 x Quick Installation Guide
	1 x CD-ROM (for Driver used)

1.6 Cable Kit

3307960 (Standard Version) Cable Kit (1208690) contains the followings:

Content

1. 1 x AUDIO Cable
2. 3 x USB 2 port Cable
3. 1 x IDE Cable
4. 1 x FDD Cable
5. 1 x VGA Cable
6. 1 x RJ-45 Ethernet LAN Cable
7. 1 x KB-MS Cable
8. 1 x Parallel Cable
9. 2 x COM Cable

1.7 Ordering Information

3307960A
5.25" Embedded Controller with Socket 478 for an Intel Pentium M / Celeron M Processor, 1 x Intel 10/100 LAN

3307960B
Same as 3307960A, but with an embedded FANLESS Ultra Low Voltage Intel Celeron M 600 MHz Processor

3307960C
Same as 3307960A, but with an embedded FANLESS Ultra Low Voltage Intel Celeron M 600 MHz Processor, 3 x Intel 10/100 LAN

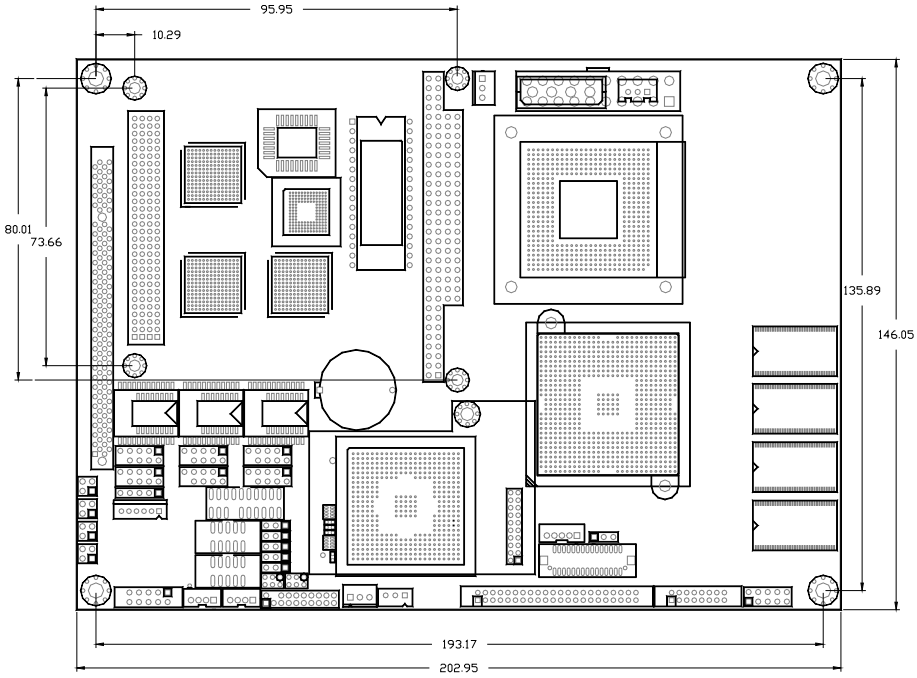
1008000
Digital I/O Daughterboard with 4 X COM

1208690
Cable Kit for 3307960

1.8 Specification

Product Name	3307960
Form Factor	5.25" Embedded Board Size (203x146mm)
Processor	Intel Ultra-Low Voltage Celeron-M FSB 400MHz,
	Celeron-M FSB 400MHz,
	Low Voltage Pentium-M FSB 400MHz,
	Pentium-M FSB 400MHz Processor.
Chipset	NB : Intel 852GM SB: Intel ICH4
System Memory	On board DDR RAM 256MB (Optional: 512MB Max)
VGA/LCD Controller	UMA 852GM AGP Video Controller with LVDS and
	CRT support (Support Dual Display, Independent
	display)
Ethernet	Intel 82551QM 10/100 Base-T Fast Ethernet LAN
	(Optional: 3 x 82551QM 10/100 Base-T Fast
	Ethernet LAN or Intel 82541PI Giga LAN, Max)
I/O Chips	WINBOUND W83627HF
BIOS	Phoenix-Award BIOS version 6.0PG, Support 4MB
	Flash ROM
Audio	AC'97 Codec Version: 2.3 supports MIC-In/ Line-In/
	Line-out; Optional Stereo Amplifier included (ALC655)
IDE Interface	ATA-33 x 1 channel (Support two ATAPI devices)
	Compact Flash Disk X 1 (Support up to 2GB)
IEEE 1394a-2000	N/A
Serial Port	Six COM ports:
	COM1,2: RS232/422/485 Selectable
	COM3~6: RS-232 (on daughter board SCDB-1293)
Parallel Port	Parallel Port Supports SPP/ EPP/ ECP mode
K/B and Mouse	Support Standard PS/2 K/B and Mouse
Universal Serial Bus	6 x USB 2.0 Port
Expansion Interface	PCI slot, PC104/PC104plus
Watchdog Timer Chipset	Integrated in W83627HF, 1~255 Level (sec or min)
Hardware Monitor Chipset	Integrated in W83627HF
RTC	Support Real Time Clock
Power Input Connector	2 x 10 Pin ATX (AT power can be used)
Operation Temp.	0 ~ 60°C

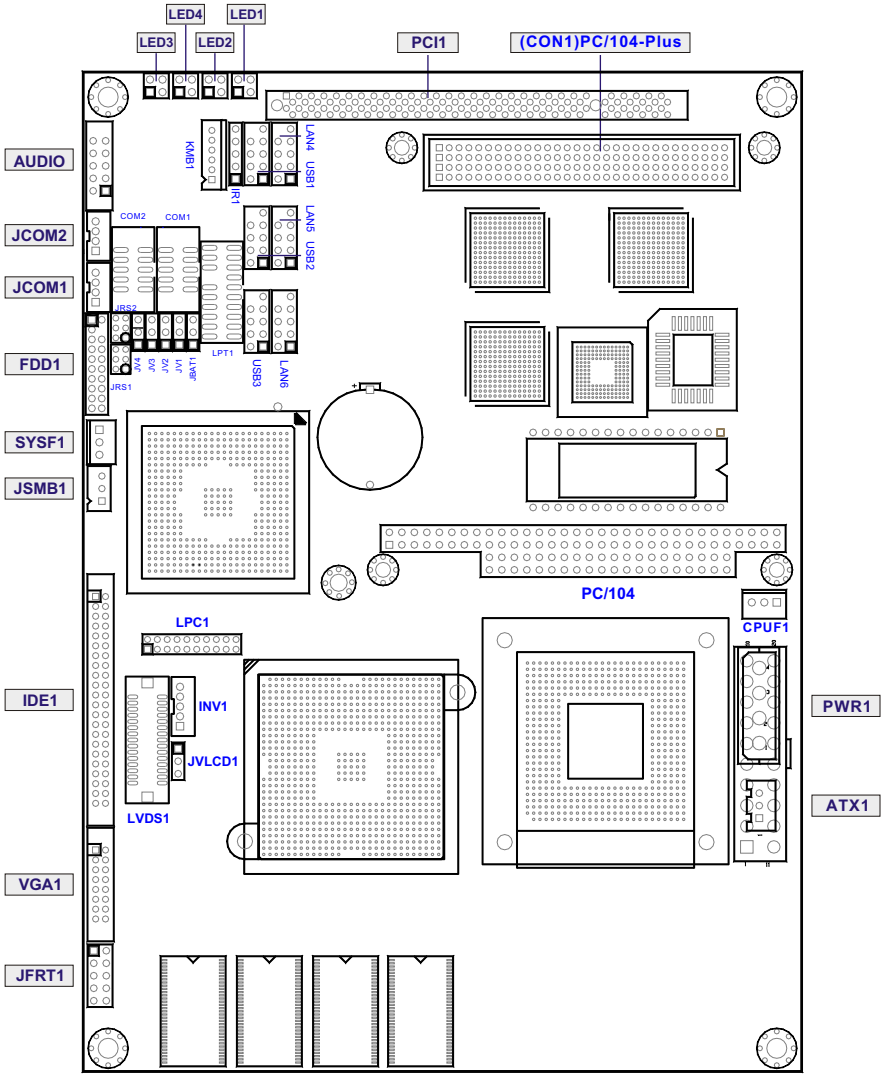
1.9 Board Dimensions



Chapter 2

Installation

2.1 Board layout



2.2 Jumpers and Connectors

Jumpers Setting

Label	Function
JBAT1	CMOS Jumper Settings
	Clear CMOS
JRS1	COM1 RS-232 / 422 / 485 Select
	RS-232/422/485 select
JRS2	COM2 RS-232 / 422 / 485 Select
	RS-232/422/485 select
JV1,JV2,JV3,JV4	COM1 Power Source Special Support
JDOC1	DOC Address select
JVLCD1	LVDS Panel Voltage Selects

CMOS Jumper Settings (JBAT1)

Type: Onboard 3-pin header (JBAT1)

CMOS	JBAT1
Keep CMOS	1-2 ON
Clear CMOS	2-3 ON

Default setting: Keep CMOS

COM1 RS-232 / 422 / 485 Select (JRS1)

Type: Onboard 3-pin header (JCF1)

JRS1 Select	1-2	3-4	5-6
RS-232	ON	OFF	OFF
RS-422	OFF	ON	OFF
RS-485	OFF	OFF	ON

Default setting:RS-232 mode

COM2 RS-232 / 422 / 485 Select (JRS2)

Type: onboard 6-pin (2*3) header

JRS1 Select	1-2	3-4	5-6
RS-232	ON	OFF	OFF
RS-422	OFF	ON	OFF
RS-485	OFF	OFF	ON

Default setting: RS-232 mode

COM1 Power Source Special Support (JV1,JV3)

Type: onboard 2*3-pin header

COM1 Power Source Special Support	JV3	JV1
Standard	1-2	1-2
POS:5V on Pin1	2-3	1-2
POS:12V on Pin9	1-2	2-3
POS:5V on Pin1,12V on Pin9	2-3	2-3

Default setting: Standard

COM2 Power Source Special Support(JV2,JV4)

Type: onboard 2*3-pin header

COM1 Power Source Special Support	JV4	JV2
Standard	1-2	1-2
POS:5V on Pin1	2-3	1-2
POS:12V on Pin9	1-2	2-3
POS:5V on Pin1,12V on Pin9	2-3	2-3

Default setting: Standard

DOC Address Selects(JDOC1)

Type: onboard 4-pin header

Address	JDOC1
D000	1-2
D800	3-4

LVDS Panel Voltage Selects (JVLCD1)

Type: onboard 3-pin header

LCD Voltage	LCD Voltage
5V	3.3V
3.3V	5.0V

JVLCD1

Default setting:3.3V

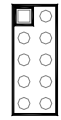
Connectors

Label	Function
JFRT1	Front Panel (Switches and Indicators)
VGA1	CRT Display
IDE1	Primary IDE Connector
LPC1	Low Pin Connector
U50(DOC)	DOC connector
JSMB1	SM BUS
FDD1	Floppy Disk Drive Connector
CPUF1	CPU Fan connector
SYSF1	System Fan connector
COM1	Serial Port 1
COM2	Serial Port 2
JCOM1	RS-422 / 485 Output
JCOM2	RS-422 / 485 Output
KBM1	PS/2 Keyboard and Mouse
LPT1	Parallel Port
USB1	USB 1/2 Connector
USB2	USB 3/4 Connector
USB3	USB 5/6 Connector
TV1	TV OUT Connector
INV1	LCD Inverter Connector
LVDS1	LVDS LCD Panel Connector
TMDS1	DVI Connector
IR1	Infrared (IR) Connector
LAN1	Ethernet Connector
LLED1	LAN LED Connector
AUDIO1	Audio Interface Port
CFD1	Compact Flash Socket
PC104	PC104 for ISA Interface
MPCI1	Mini PCI Slot
CON1	PC104 + Connector
PCI1	PCI Slot
ATX1	ATX Power Connector

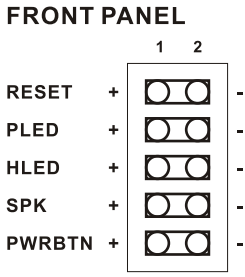
JFRT1

Type: onboard 2.54 pitch 10-pin (2*5) header

Pin	Description	Pin	Description
1	RESET +	2	RESET -
3	Power LED+	4	Power LED-
5	HD LED+	6	HD LED-
7	Speak+	8	Speak-
9	PSON+	10	PSON-



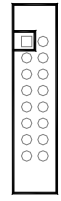
JFRT1



CRT Display Connector(VGA1)

Type：Onboard 2.0mm 2X8 Pin Box Header

Pin	Description	Pin	Description
1	RED	2	GREEN
3	BLUE	4	N/C
5	GND	6	GND
7	GND	8	GND
9	+5V(Poly S/W)	10	GND
11	N/C	12	VDDAT
13	HSYNC	14	VSYNC
15	VDCLK	16	N/C

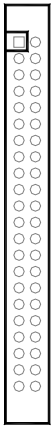


VGA1

Enhanced IDE Connector(IDE1)

Type：onboard 44-pin 2.0mm box headers

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 RWITE	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	CS#2	38	CS#3
39	IDEACTP	40	GND
41	+5V	42	+5V
43	GND	44	NC

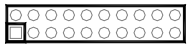


IDE1

LOW PIN CONNECTOR (LPC1)

Type：onboard 2*10pin 2.0mm PIN headers

Pin	Description	Pin	Description
1	VCC	2	VCC
3	#LDRQ1	4	GND
5	SERIRQ	6	LAD3
7	LAD2	8	LAD2
9	LAD0	10	LAD1
11	#PCIRST	12	GND
13	SMBDATA	14	PCLK
15	GND	16	SMBCLK
17	48MHZ	18	#LPC_PME
19	VCC3	20	VCC3

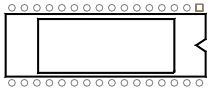


LPC1

DOC CONNECTOR (DOC1)

Type：onboard 2*10pin 2.0mm PIN headers

Pin	Description	Pin	Description
1	NC	32	VCC
2	SA16	31	#SMEMW
3	SA15	30	VCC
4	SA12	29	SA14
5	SA7	28	SA18
6	SA6	27	SA8
7	SA5	26	SA9
8	SA4	25	SA11
9	SA3	24	#SMEMR
10	SA2	23	SA10
11	SA1	22	#CE
12	SA0	21	SD7
13	SD0	20	SD6
14	SD1	19	SD5
15	SD2	18	SD4
16	GND	17	SD3



DOC1

External SMBus Connector (SMBUS1)

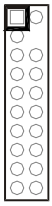
Type: onboard 2.54pitch 3-pin wafer

Pin	Description
1	DATA
2	CLK
3	GND

Floppy Disk Drive Connector (FDD1)

Type: onboard standard 2.00pitch 34-pin (2*17) holes

Pin	Description	Pin	Description
1	GND	2	#RWC
3	GND	4	N.C
5	GND	6	#DS1
7	#WD	8	#INDEX
9	#WE	10	#MOA
11	#TRAK0	12	#DSB
13	#WP	14	#DSA
15	#RDATA	16	#MOB
17	#HEAD	18	#DIR
19	#DSKCHG	20	#STEP



FDD1

FAN Connector (CPUF1)

Type: onboard 3-pin wafer connector

Pin	Description
1	GND
2	+12V
3	Fan_Detect

CPUF1

FAN Connector (SYSF1)

Type: onboard 3-pin wafer connector

Pin	Description
1	GND
2	+12V
3	Fan_Detect

SYSF1

RS-232 Serial Port (COM1)

Type: onboard 2X5-BOX HEADER(2.0mm)

Pin	Description	Pin	Description
1	DCDA	2	SINA
3	SOUTA	4	DTRA
5	GND	6	DSRA
7	RTSA	8	CTSA
9	RI A	10	NC

RS-232 Serial Port (COM2)

Type: onboard 2X5BOX HEADER(2.0mm)

Pin	Description	Pin	Description
1	DCDB	2	SINB
3	SOUTB	4	DTRB
5	GND	6	DSRB
7	RTSB	8	CTSB
9	RI B	10	NC

RS422/485 Output Connector (JCOM1)

Type: onboard 2.0pitch 4-pin header

Pin	RS-422	RS-485
1	TX+	DATA+
2	TX-	DATA-
3	RX+	N.C
4	RX-	N.C

RS-422/RS-485 Select by JRS1, share COM1 resource.

RS422/485 Output Connector (JCOM2)

Type: onboard 2.0pitch 4-pin header

Pin	RS-422	RS-485
1	TX+	DATA+
2	TX-	DATA-
3	RX+	N.C
4	RX-	N.C

RS-422/RS-485 Select by JRS2, share COM2 resource.

PS/2 Keyboard & Mouse Connector (KBM1)

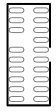
Type: One onboard 2x4pin Header

Pin	Description
1	KB_DAT
2	GND
3	MS_DAT
4	KB_CLK
5	VCC
6	MS_CLK

Parallel Port (LPT1)

Type: onboard 2X13BOX HEADER(2.0mm)

Pin	Description	Pin	Description
1	#STB	2	#AFD
3	PD0	4	#ERR
5	PD1	6	#INIT
7	PD2	8	#SLIN
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	NC
15	PD6	16	BUSY
17	PD7	18	PE
19	#ACK	20	SLCT



USB Connector (USB1)

Type: onboard 2.54pitch 10-pin header for two USB ports

Pin	Description	Pin	Description
1	+5V	1	+5V
3	USBD0-	3	USBD0-
5	USBD0+	5	USBD0+
7	GND	7	GND
9	GND	9	GND

USB Connector (USB2)

Type: onboard 2.54pitch 10-pin header for two USB ports

Pin	Description	Pin	Description
1	+5V	1	+5V
3	USBD2-	3	USBD3-
5	USBD2+	5	USBD3+
7	GND	7	GND
9	GND	9	N.C

USB Connector (USB3)

Type: onboard 2.54pitch 10-pin header for two USB ports

Pin	Description	Pin	Description
1	+5V	1	+5V
3	USBD4-	3	USBD5-
5	USBD4+	5	USBD5+
7	GND	7	GND
9	GND	9	N.C

LVDS Panel Inverter Connector (INV1)

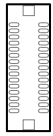
Type: onboard 2.0pitch 5-pin wafer

Pin	Description
1	+12V
2	GND
3	Backlight on/off
4	Brightness control
5	GND

LVDS LCD Connector (LVDS1)

Type: onboard DF13 30-pin header

Pin	Description	Pin	Description
1	VDD	2	VDD
3	TX1CLK+	4	TX2CLK+
5	TX1CLK-	6	TX2CLK-
7	GND	8	GND
9	TX1D0+	10	TX2D0+
11	TX1D0-	12	TX2D0-
13	GND	14	GND
15	TX1D1+	16	TX2D1+
17	TX1D1-	18	TX2D1-
19	GND	20	GND
21	TX1D2+	22	TX2D2+
23	TX1D2-	24	TX2D2-
25	GND	26	GND
27	TX1D3+	28	TX2D3+
29	TX1D3-	30	TX2D3-



VDD could be selected by JVLCD1 in +5V or +3.3V

DVI CONNECTOR (TMSDS1)

Type: onboard DF13 20-pin header

Pin	Description	Pin	Description
1	DVI_VCC	2	DVI_VCC
3	TX0P	4	TXCP
5	TX0M	6	TXCM
7	GND	8	GND
9	TX1P	10	5VDDCCLK
11	TX1M	12	5VDDCDATA
13	GND	14	GND
15	TX2P	16	DVI_HPD
17	TX2M	18	NC
19	GND	20	NC

Infrared (IR) Connector (IR1)

Type: onboard 2.54pitch 5-pin header

Pin	Description
1	+5V
2	N.C
3	IRRX
4	GND
5	IRTX

Fast Ethernet Connector (LAN1)

Type: onboard 2.54pitch 10-pin header

Pin	Description	Pin	Description
1	TX+	2	TX-
3	RX+	4	D2+
5	D2-	6	RX-
7	D3+	8	D3-
9	LAN_GND	10	Key

LAN LED Indicator (LLED1)

Type :onboard 1*4pin 2mm header

Pin	Description
1	ACT-
2	ACT+
3	LILED-
4	LILED+

Audio Port (Audio1):

Audio Interface Port

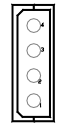
Type: onboard 2*5pin 2.0mm BOX header

Pin	Description	Pin	Description
1	GND	2	Line Right in
3	Line Left in	4	MIC1
5	GND	6	MIC2
7	NC	8	LOUT_L
9	GND	10	LOUT_R

Power Connector (PWR1)

Type : onboard 2*10-pin connector

Pin	Description	Pin	Description
1	NC	11	NC
2	NC	12	-12V
3	GND	13	GND
4	VCC	14	PSON#
5	GND	15	GND
6	VCC	16	GND
7	GND	17	GND
8	NC	18	-5V
9	5VSB	19	VCC
10	+12V	20	VCC



Compact Flash Connector (CFD1)

Pin	Description	Pin	Description
1	GND	26	GND
2	DATA3	27	DATA11
3	DATA4	28	DATA12
4	DATA5	29	DATA13
5	DATA6	30	DATA14
6	DATA7	31	DATA15
7	CS#1	32	CS#3
8	GND	33	GND
9	GND	34	IO READ
10	GND	35	IO WRITE
11	GND	36	+5V
12	GND	37	IRQ15
13	+5V	38	+5V
14	GND	39	CSEL
15	GND	40	N/C
16	GND	41	IDE RESET
17	GND	42	IO READY
18	ADDR2	43	N/C
19	ADDR1	44	+5V
20	ADDR0	45	DASP
21	DATA0	46	DIAG
22	DATA1	47	DATA8
23	DATA2	48	DATA9
24	N/C	49	DATA10
25	GND	50	GND

Chapter 3

Appendix

3.1 I/O Map

Item	Address	Description
1	0000h-0000Fh	Direct memory access controller
	0080h-009Fh	
	00C0h-00DFh	
2	0020h , 0021h	Programmable interrupt Controller
	00A0h , 00A1h	
3	0040h-0043h	System timer
	0044h-0047h	
4	0060h-0064h	Keyboard controller
5	0070h-0073h	System CMOS/real time clock
6	00F0h-00FFh	Math Co-Processor
7	01F0h-01F7h	Primary IDE
8	0274h-0277h	ISAPNP Read Data Port
9	0279h , 0A79h	ISAPnP Configuration
10	04E8h-04EFh	COM_6 (If use)
11	02E8h-02EFh	COM_4 (If use)
12	02F8h-02FFh	COM_2 (If use)
13	0378h-037Ah	Parallel Port (If use)
14	03B0h-03BFh	MDA/MGA
15	03C0h-03CFh	EGA/VGA
16	03D4h-03D9h	CGA CRT 暫存器
17	04F8h-04FFh	COM_5 (If use)
18	03E8h-03EFh	COM_3 (If use)
19	03F0h-03F7h	Floppy Diskette
20	03F6h-03F6h	Primary IDE
21	03F8h-03FFh	COM_1 (If use)
22	0400h-041F	South Bridge SMB
23	04D0h-04D1h	IRQ Edge/level control ports
24	0500h-053Fh	South Bridge GPIO
25	0800h-087Fh	ACPI
26	0A00h-0A07h	PME
27	0A10h-0A17h	Hardware Monitor
28	0CF8h	PCI Configuration address
29	0CFCh	PCI Configuration Data
30		

3.2 IRQ Map

Item	IRQ	Description
1	IRQ_0	System Timer
2	IRQ_1	Keyboard Controller
3	IRQ_2	VGA and Link to Secondary PIC
4	IRQ_3	COM 2
5	IRQ_4	COM 1
6	IRQ_5	PCI Device
7	IRQ_6	Floppy Controller
8	IRQ_7	Parallel Port
9	IRQ_8	CMOS/RTC Timer
10	IRQ_9	ACPI
11	IRQ_10	COM 4/6
12	IRQ_11	COM 3/5
13	IRQ_12	PS/2 Mouse
14	IRQ_13	FPU exception
15	IRQ_14	IDE Controller
16	IRQ_15	PCI Express Controller

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

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