3301130

User's Manual
Version 1.0

Full-size PICMG Socket 478 Pentium 4 CPU SBC, Supports 400MHz FSB, PC133 SDRAM / ECC with 4XAGP VGA, 32MB VRAM, (opt) Dual LAN

Packing List

Hardware

3301130 Single Board Computer ..... X 1

Cable

34-pin FDD Cable ..... X 1
40-pin IDE Flat Cable (UltraDMA/33) ..... X 1
2 x COM Port DB9 Cable ..... X 1
1 x LPT Port DB25 Cable ..... X 1
Dual-USB Port Cable with Bracket ..... X 1
PS/2 Keyboard and Mouse Cable ..... X 1
40-pin UltraATA/100 IDE Cable ..... X 1
3-pin to 4-pin ATX cable ..... X 1

Printed Matter and Software

User's Manual ..... X 1
Driver CD ..... X 1

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Chapter 1. Introduction

1.1 Product Overview

3301130 SBC (Single Board Computer) is an all-in-one industrial full-size PICMG (PCI/ISA)-bus CPU card based on Intel mPGA478 Pentium 4 architecture. With Intel 845 chipset, **3301130** offers the value solution with Intel NetBurst micro-architecture, 400 MHz of FSB, 3GB PC133 SDRAM, **,** SiS315 built-in advanced 3D SVGA, and dual Intel PRO/100+ LAN and USB 1.1 I/O interfaces.
Based on Intel's long term supply chipset, **3301130** should be the ideal solution for long life industrial applied computing platform with high computing capacity and cost effect. The onboard dual Intel PRO/100+ LAN, M-systems DiskOnChip SSD (Solid State Disk), and ISA 64mA high drive capacity also make **3301130** be the value Pentium 4 platform for:

Value Industrial Computing Platform: Intel mPGA478 Pentium 4 / Celeron CPU with 400 MHz FSB and 3GB PC133 SDRAM of system memory, **3301130** offers the high-end industrial computing platform with low cost Intel integrated solution. The long term support, onboard SSD, dual Intel LAN and ISA 64mA high drive capacity also make **3301130** be the ideal solution for industrial server and workstation, CTI (Computer Telephony Integration), VoIP (Voice over IP), and other high-end applications.

Low Cost Multi-media Solution: SiS315 Graphic Controller built-in advanced 3D VGA controller offers the value integration solution for low cost multi-media computing platform. Such as VoD (video on demand), DVR (Digital Video Recorder), digital video broadcasting (DVB), streaming, surveillance, compression (MPEG), interaction server, workstation and terminal appliances.

Redundant Network Reliability: dual Intel PRO/100+ 10/100 Mbps Fast Ethernet interfaces for high reliability of redundant LAN, or external / internal dual direction networking applications.

IDE Raid Interface: The **optional** integrated RAID function will offer the better reliability and flexibility to the system applications. It offers RAID 1 mirroring (for two drives) to protect data. If a drive that is part of a mirrored array fails, the system will use the mirrored drive (which contains identical data) to assume all data handing. When a new replacement drive is later installed, it rebuilds data to the new drive from the mirrored drive to restore fault tolerance.

1.2 Specification

General Specification	
Form Factor	Full-size PICMG-bus CPU Card / Slot PC PICMG version 1.0 (Rev. 2.0), PCI version 2.0 compliant
CPU	Intel mPGA478 Pentium 4, Celeron @ 400 MHz FSB Support Northwood / Willamette Pentium 4 / Celeron CPU
Memory	3GBytes PC133 SDRAM on 3 x 168-pin DIMM sockets. Support ECC function
Chipset	Intel 82845 MCH and 82801BA ICH2
BIOS	Phoenix-Award 2Mb PnP flash BIOS
Green Function	Power saving mode supported in BIOS with DOZE, STANDBY and SUSPEND modes. ACPI version 1.0 and APM version 1.2 compliant
Watchdog Timer	Generates NMI or system reset watchdog timer with 1 to 255 sec. / min. of time out value
Real Time Clock	Intel ICH2 built-in RTC with lithium battery
Enhanced IDE	PCI enhanced IDE interface supports dual ports up to 4 ATAPI devices with UltraATA/100 supported
ISA High Drive	ISA 64mA high Drive capacity with TI 245 buffer on address and data bus

Multi-I/O Port	
Chipset	Intel 82801BA ICH2 and Winbond W83627HF-AW LPC super-I/O controller
Serial Port	One RS-232C COM1 and one jumper selectable RS-232C/422/485 COM2. Both with 16C550 compatible UART and 16 bytes FIFO
USB Port	Two USB 1.1 ports with 480 Mbps of data transfer rate
Parallel Port	One bi-direction parallel port with SPP/ECP/EPP mode
Floppy	One floppy port supports up to two FDD
IrDA Port	One IrDA compliant Infrared interface supports SIR
K/B & Mouse	PS/2 keyboard and mouse ports, AT keyboard port

Solid State Disk Interface	
Flash Type	M-systems DiskOnChip 2000, DiskOnChip Millennium, IDE Pro and DiskOnModule (DOM) solid state flash disk
Package	32-pin DIP JEDEC (DiskOnChip) 40-pin IDE port (IDE Pro, DiskOnModule)
Capacity	576 MB of DiskOnChip and 512 MB of DiskOnModule

VGA Display Interface	
Chipset	SiS315 Graphic Controller built-in AGP 4X 256-bit 3D VGA
Video Memory	Onboard 32MB physical video memory
Display Type	CRT, LCD monitor and analog display
Connector	External DB15 female connector on bracket for CRT

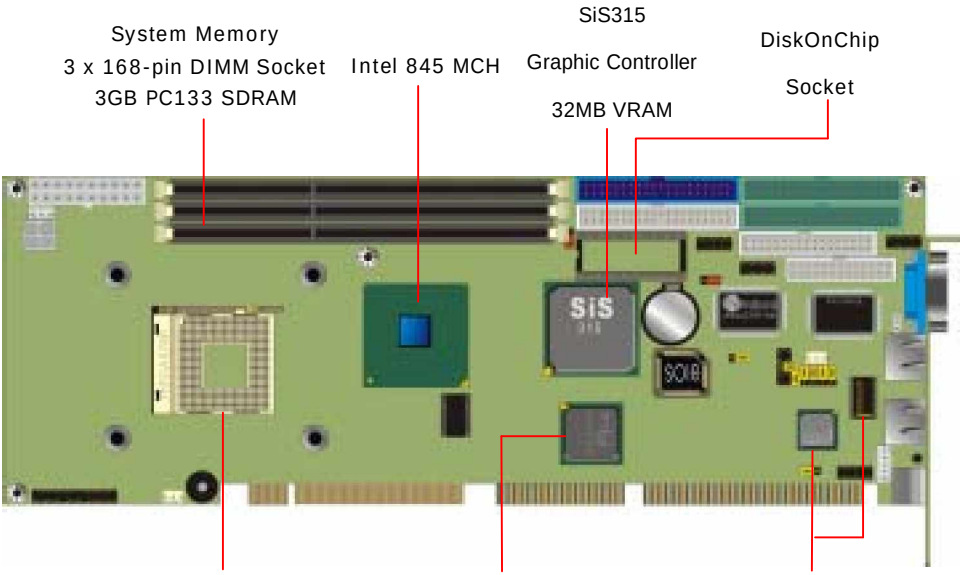
Ethernet Interface	
Chipset	Dual Intel PRO/100+ LAN interface Primary LAN (LAN1): Intel ICH2 and Intel 82562ET Optional secondary LAN (LAN2): Intel 82559ER
Type	10Base-T / 100Base-TX, auto-switching Fast Ethernet Full duplex, IEEE802.3U compliant
Connector	External dual RJ45 with LED on bracket

IDE Raid Interface	
Chipset	Promise PDC20265R hardware PCI to UltraATA/100 IDE RAID controller
Raid Level	RAID Level 0 striping and level 1 mirroring
Connector	IDE3/4 dual UltraATA/100 IDE master interfaces

Power and Environment	
Power Req.	+5V, +12V, -12V DC input from PICMG backplane Onboard 20-pin ATX power connector Additional +12V on 4-pin connector for Pentium 4 PSU
ATX Function	3-pin ATX interface with 5V standby and power-on
Dimension	338 (L) x 122 (H) mm, standard PICMG form factor
Temperature	Operating within 0 ~ 60°C (32 ~ 140°F) Storage within -20 ~ 85°C (-4 ~ 185°F)
EMI	

Ordering Code	
3301130	Full-size PICMG-bus Socket 478 Pentium-4 CPU Card with 4xAGP SVGA / 32 MB, Dual Intel PRO/100+ LAN, DiskOnChip Interfaces and ISA 64mA High Drive Capacity

1.3 Component Placement



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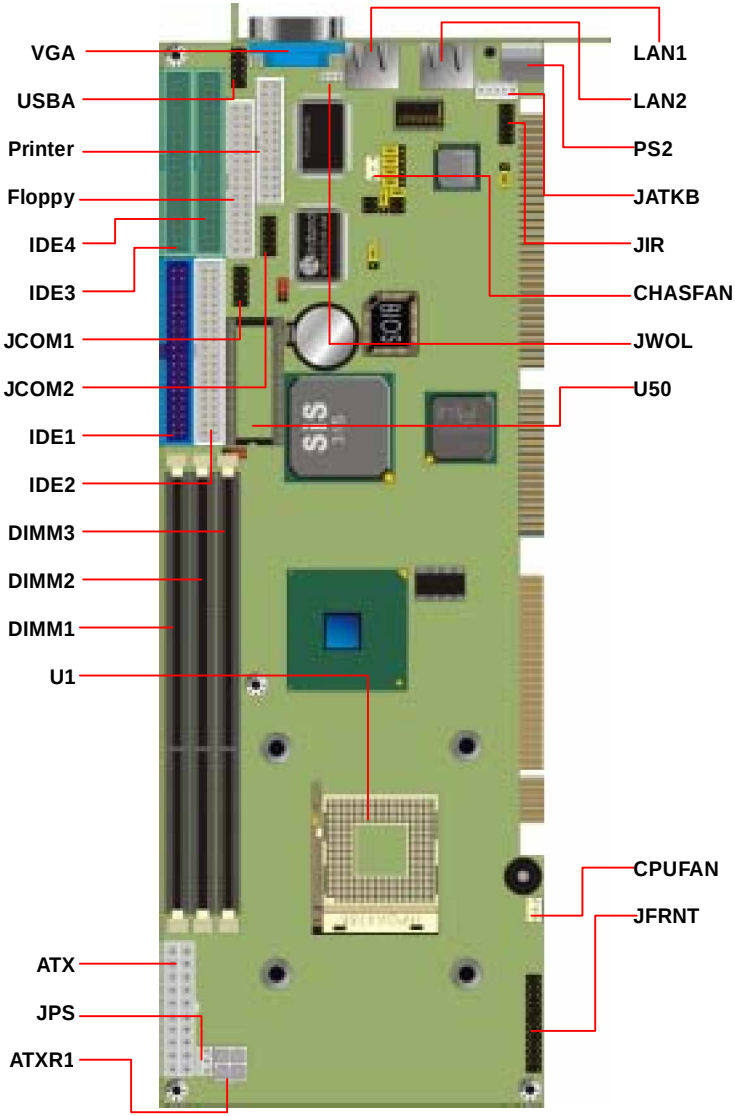
Chapter 2. Hardware Setup

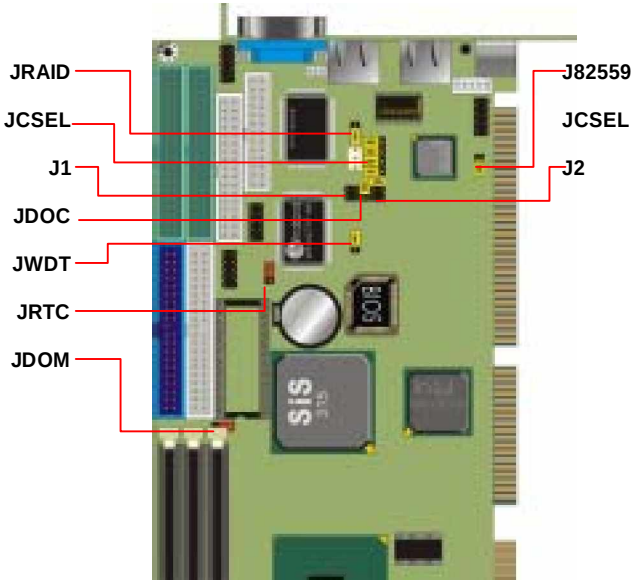
This chapter contains the information for installation of hardware. The install procedure includes jumper settings, CPU and memory installation, fan, I/O and panel connections.

2.1 Connector Location



2.1.1 Jumpers Reference

Jumper	Function	Section
JRTC	COMS Operate / Clear Setting	2.3
JWDT	Watchdog Timer NMI / Reset Setting	2.4
JDOC	DiskOnChip SSD Address Setting	2.5
JDOM	DiskOnModule SSD Power Setting	2.5
J82559	Secondary LAN Enable/Disable Setting	2.8
JRAID	RAID Enable / Disable Setting	2.9
JCSEL	COM2 RS232/422/485 Mode Setting	2.10
J1	COM2 RS232/422/485 Mode Setting	2.10
J2	COM2 RS232/422/485 Mode Setting	2.10



2.1.2 Connectors Reference

Internal Onboard Connector

Connector	Function	Remark
CPU	MicroPGA478 478 CPU Socket	Standard
DIMM1/2/3	168-pin DIMM Socket	Standard
IDE1/2	40-pin Primary / Secondary IDE Port	Standard
IDE3/4	40-pin IDE Port for RAID (Optional)	
Floppy	34-pin FDD Port	Standard
Printer	26-pin Parallel Port	Standard
JCOM1	10-pin RS232 Serial Port	Standard
JCOM2	10-pin COM2 RS232/422/485 Serial Port	Standard
USBA	10-pin 1st / 2nd USB Port	Standard
JIR	10-pin SIR IrDA Port	Standard
U50	32-pin DIP DiskOnChip Socket	Standard
JATKB	5-pin AT Keyboard Connector	Standard
ATXR1	4-pin Additional +12V Power Connector	Standard
JPS	3-pin ATX Signal Connector	Standard
JFRNT	14-pin Switch and Indicator Connector	Standard
CPUFAN	3-pin +12V CPU Fan Connector	Standard
SYSFAN	3-pin +12V System Fan Connector	Standard
WOL	3-pin Wake-On-LAN Interface	Standard

External Connector on Bracket

Connector	Function	Remark
VGA	DB15 Female VGA Connector	Standard
LAN1	RJ45 LAN1 Connector	Standard
LAN2	RJ45 LAN2 Connector	Standard
PS2	6-pin MiniDIN PS/2 Keyboard & Mouse	Standard

2.2 CPU and DRAM Setting

The board is based on Intel Socket 478 architecture, supports Intel mPGA478 Pentium 4 / Celeron CPU at 400 MHz FSB. The **3301130** is based on Intel 845 MCH, supports 400 MHz FSB.

System memory of this board supports up to 3GB PC133 SDRAM on 3 168-pin DIMM sockets, support ECC function.

2.3 CMOS Setting

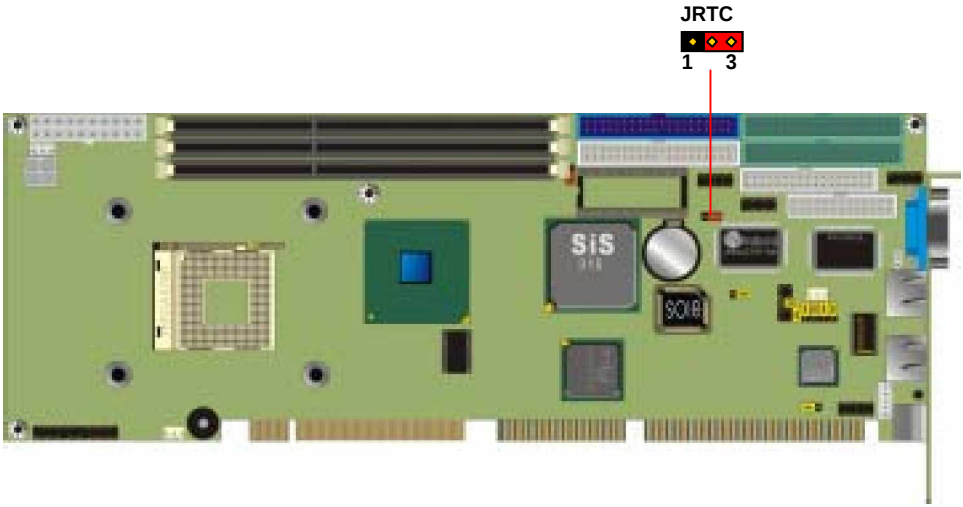
The board's data of CMOS can be setting in BIOS. If the board refuses to boot due to inappropriate CMOS settings, here is how to proceed to clear (reset) the CMOS to its default values.

Jumper: JRTC

Type: onboard 3-pin header

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

Default setting



2.4 Watchdog Timer Setting

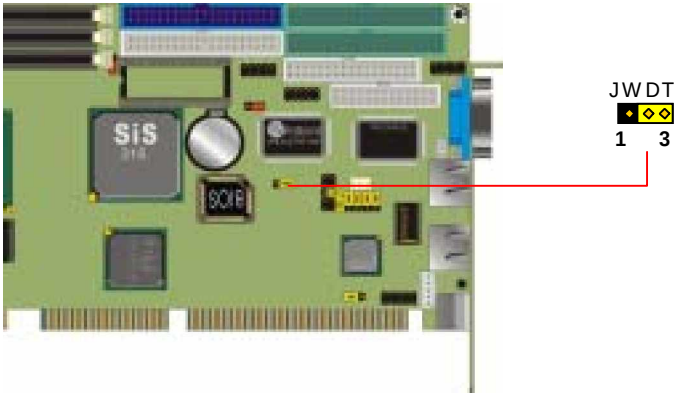
The watchdog timer makes the systems auto-reset while it stop to work for a period. The onboard watchdog timer can be setup as system reset or active NMI mode by jumper JWDT.

Jumper: JWDT

Type: onboard 3-pin header

JWDT	Watchdog Timer
1-2	Active NMI
2-3	Reset

Default setting



Program Sample

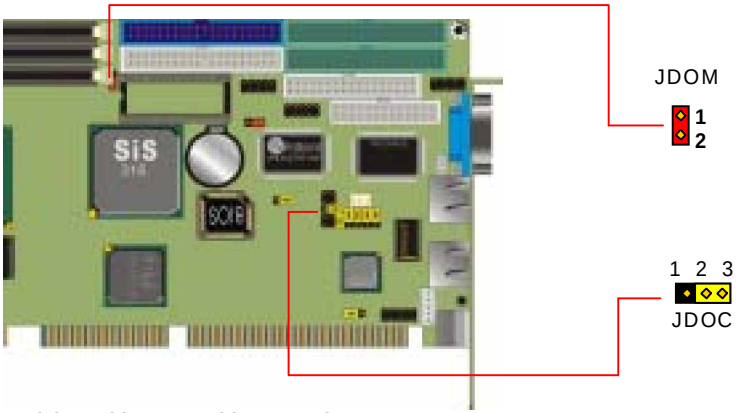
Watchdog timer setup as system reset with 5 second of timeout

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

2.5 Embedded Solid State Disk

The board supports both 32-pin M-systems DiskOnChip 2000 and IDE-based DiskOnChip IDE Pro and DiskOnModule (DOM) embedded flash disk. The onboard 32-pin socket, DOC, supports DiskOnChip 2000 single chip flash disk in 32-pin DIP JEDEC with jumper selectable address on jumper JDOC; onboard 40-pin IDE2 box header supports normal DOM (DiskOnModule) or M-systems DiskOnChip IDE Pro flash disk with jumper selectable +5V Vcc power for cable free applications on jumper JDOM.



DiskOnChip 2000 Address Setting

Jumper: JDOC
Type: onboard 3-pin header

JDOC	DiskOnChip Address
1-2	D000h
2-3	D800h

Default setting

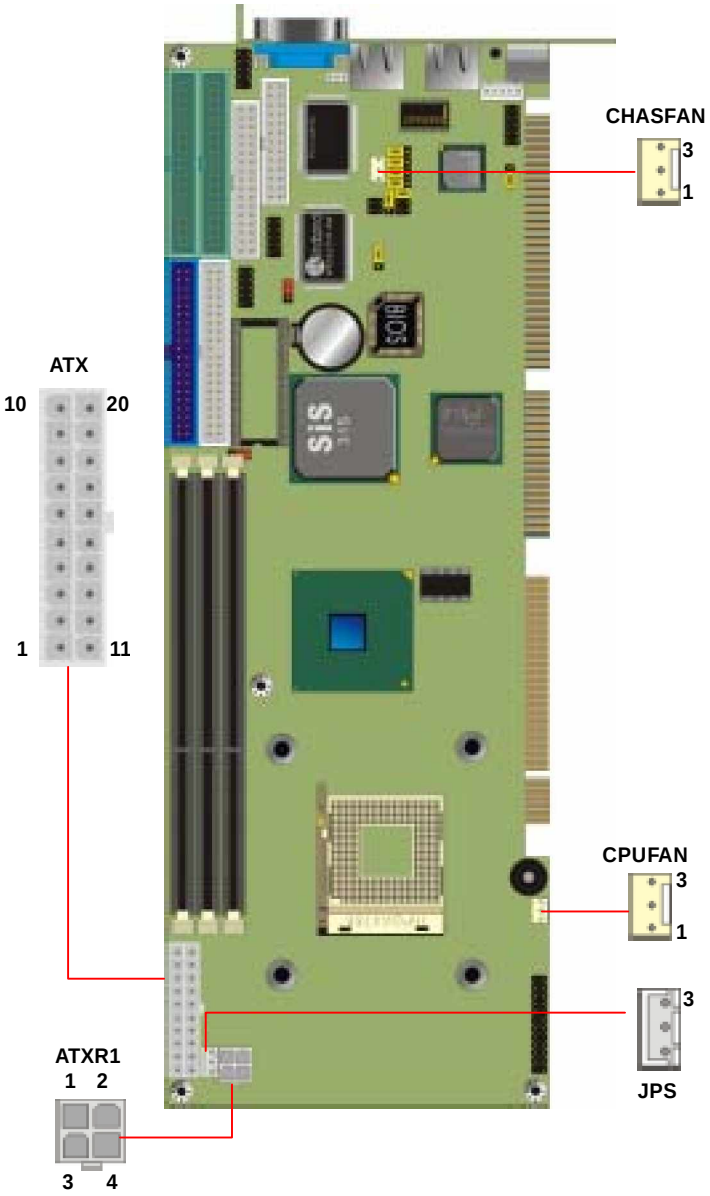
DOM or DiskOnChip 2000 IDE Pro Power Setting

Jumper: JDOM
Type: onboard 2-pin header

JDOM	+5V on Pin-20 of IDE2
OFF	Disable
ON	Enable

Default setting

2.6 Power and Fan Connector



Connector: ATXR1

Type: 4-pin Standard Pentium 4 Additional +12V Power Connector

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

Connector: JPS

Type: 3-pin ATX Function Connector

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

Connector: CPUFAN, SYSFAN

Type: 3-pin Fan Power Wafer Connector

Pin	Description	Pin	Description	Pin	Description
1	Ground	2	+12V	3	Fan Control

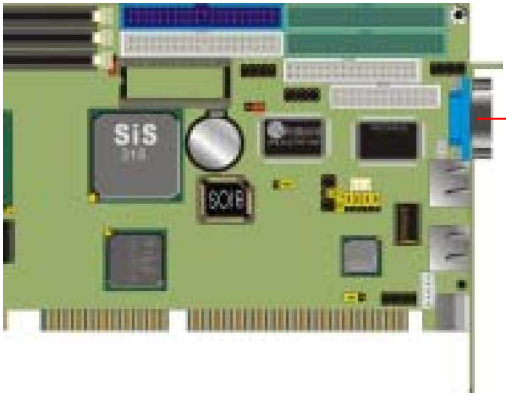
Connector: ATX

Type: 20-pin Standard ATX Power Connector

Pin	Description	Pin	Description
1	N/C	11	Vcc
2	N/C	12	Vcc
3	Ground	13	-5V
4	Vcc	14	Ground
5	Ground	15	Ground
6	Vcc	16	Ground
7	Ground	17	Power On
8	Power Good	18	Ground
9	5V Standby	19	-12V
10	+12V	20	N/C

2.7 VGA Interface

The board is integrated with SiS315 Graphic Controller with 256-/128-bit 3D/2D engine and 32MB physical video memory. The CRT / analog VGA interface includes one external DB15 female connector on bracket.



2.8 Ethernet Interface

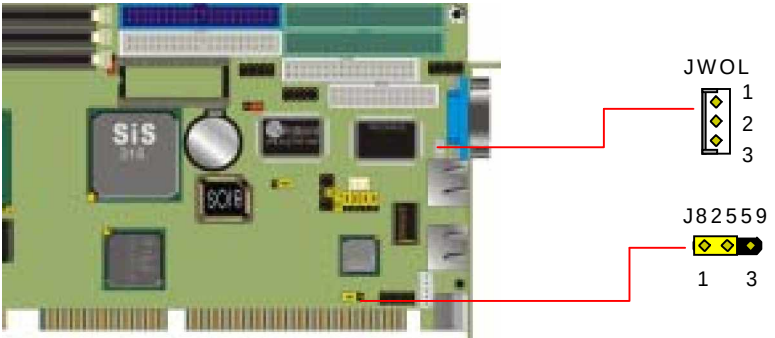
The board integrated with dual Intel PRO/100+ Fast Ethernet interfaces at the type of 10Base-T/100Base-TX auto-switching Fast Ethernet with full duplex and IEEE 802.3U compliant. Both of them connect via RJ45 connectors on bracket. The LAN2 can enable or disable by jumper J82559.

The primary LAN interface is controlled by Intel ICH2 with Intel 82562ET PHY and setting as LAN1. It provides the same performance as Intel 82559 LAN with the same driver. The secondary LAN interface is controlled by Intel 82559ER chipset and setting as LAN2.

Jumper: J82559
Type: onboard 3-pin header

J82559	LAN2 Enable / Disable Setting
1-2	Enable
2-3	Disable

Default setting

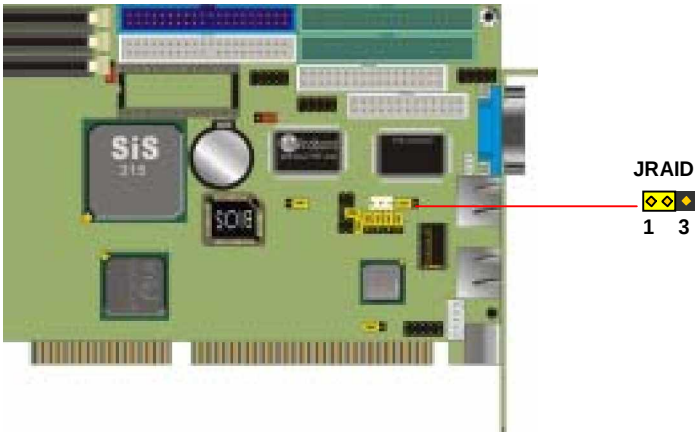


Connector: JWOL
Type: onboard 3-pin header Wake-On-LAN connector

Pin	1	2	3
Description	WOL-Ctrl	Ground	+5V Standby

2.9 Raid Interface

The board integrates with Promise FastTrak100 UltraATA/100 IDE RAID interface that provides RAID 0 and 1 functions. The function can enable or disable by jumper JRAID and the RAID level can be set on BIOS. The channel 1 in BIOS stands for IDE3, and the channel 2 in BOIS stands for IDE4.



The integrated RAID function will offer the better reliability and flexibility to the system applications. It offers RAID 1 mirroring (for two drives) to protect data. If a drive that is part of a mirrored array fails, the system will use the mirrored drive (which contains identical data) to assume all data handing. When a new replacement drive is later installed, it rebuilds data to the new drive from the mirrored drive to restore fault tolerance.

With striping, drives can read and write data in parallel to increase the performance of the system. Mirroring increases read performance through load balancing and elevator seek while creating a complete backup of your files. Striped array can double the sustained data transfer rate of Ultra ATA/100 drives. It fully supports Ultra ATA/100 specification of up to 100 MB/sec per drive. The RAID levels perform with different functions integrated on the board is as below.

RAID 0 (Striping): the data is striped or overlapped across multiple HDD. It offers the more space of "single disk" but no fault-tolerance. In the other words, if you use two 40 GB hard drives in RAID 0, it will be the 80 GB (40 + 40 GB) of hard drive space and set as a single disk, like disc C.

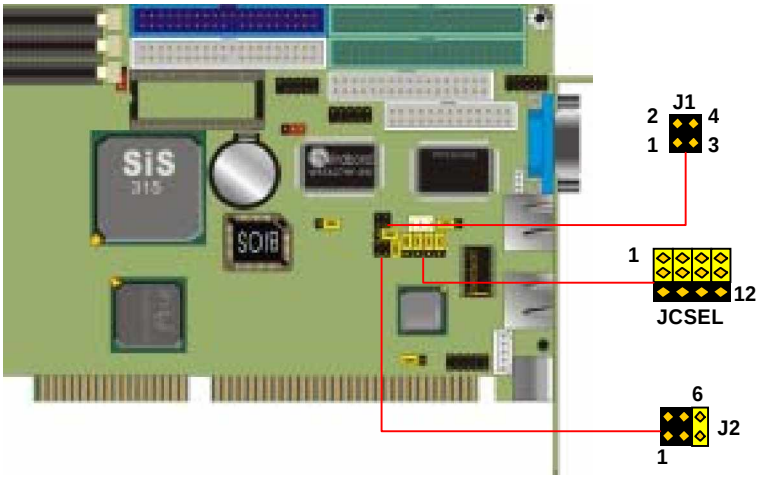
RAID 1 (Mirroring): stores the data within two hard drives at least at the same time. It offers the fault-tolerance storage of the system. The space of storage will be half of the original space. If performing 1-to-1 mirroring with two 40 GB drives, the system only sees one 40 GB drive.

If the onboard IDE controller is installed with hard disk, enable support in the Motherboard Standard CMOS Setup for the drives. Note that the onboard IDE hard drives will then be the bootable hard disk. If you want to boot from RAID IDE, it is necessary to set the Boot sequence to "SCSI, A:, C:" since the RAID IDE is identified as a SCSI card

WARNING: Before installing the device. Backup any necessary data. Failure to follow this accepted PC practice could result in data loss.

2.10 Serial Port Configuration

The board offers two serial ports including one RS232 COM1 and one jumper selectable RS232/422/485 COM2. The configuration of COM2 can be setting with jumper J1, J2 and JCSEL.



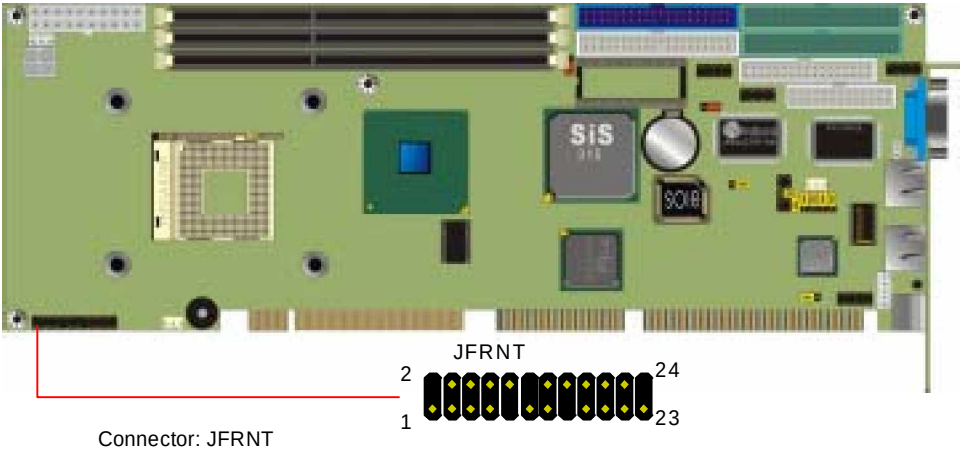
Jumper: J1, J2, JCSEL

Type: onboard 4-, 6-, 12-pin header

COM2 Mode	J1	J2	JCSEL
RS-232C	OFF	5-6	1-2/4-5/7-8/10-11
RS-422	3-4	3-4	2-3/5-6/8-9/11-12
RS-485	1-2	1-2	2-3/5-6/8-9/11-12

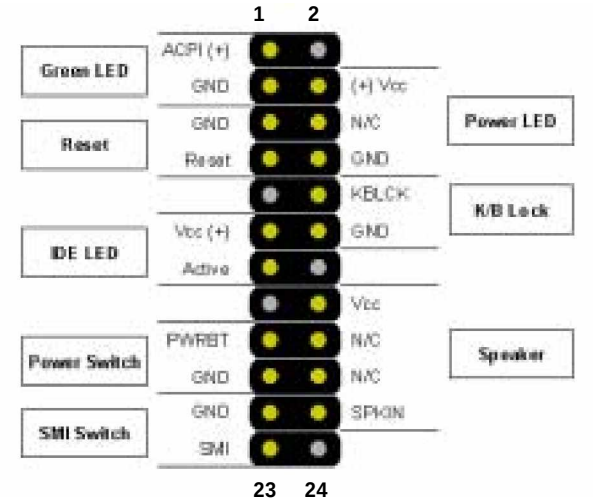
Default setting

2.11 Switch and Indicator



Connector: JFRNT

Type: onboard 24-pin header



Chapter 3. BIOS Setup

The single board computer uses the Award BIOS for the system configuration. The Award 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 3-1**. You can use arrow keys to select your function, press **<** Enter **>** key to accept the selection and enter the sub-menu.

Figure 3-1. CMOS Setup Utility Main Screen

Phoenix – Award BIOS CMOS Setup Utility

>Standard CMOS Features	>Frequency/Voltage Control
>Advanced BIOS Features	Load Fail-Safe Defaults
>Advanced Chipset Features	Load Optimized Defaults
>Integrated Peripherals	Set Supervisor Password
>Power Management Setup	Set User Password
>PnP / PCI Configurations	Save & Exit Setup
>PC Health Status	Exit Without Saving
Esc : Quit	: Select Item
F10 : Save & Exit Setup	

Notes (This page left blank intentionally)

Chapter 4. Driver Installation

The driver CD offers auto-run menu. It will detect and select the type of single board computer and helps you install the drivers automatically.

Install Chipset Software

The selection helps you install the drivers of chipset. It will detect your version of OS automatically.

Install VGA Driver

The selection helps you to install the driver of onboard VGA interface.

Install LAN Driver

The selection helps you to install the driver of onboard LAN interface.

Install RAID Driver

The selection helps you to install the driver of onboard RAID interface.

Link to < *Website* > Homepage

The selection help you to link to the website to find the updated technical documents and download directly.

Notes (This page left blank intentionally)

Appendix. A I/O Port Pin Assignment

A.1 IDE Port

Connector: **IDE1, IDE2, IDE3, IDE4 (IDE3/4 for 3301130VL2R only)**
Type: 40-pin (2 x 20) box header

Pin	Description	Pin	Description
1	Reset	2	Ground
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	Ground	20	N/C (Vcc)
21	REQ	22	Ground
23	IOW-/STOP	24	Ground
25	IOR-/HDMARDY	26	Ground
27	IORDY/DDMARDY	28	IDESEL
29	DACK-	30	Ground
31	IRQ	32	N/C
33	A1	34	CBLID
35	A0	36	A2
37	CS0 (MASTER CS)	38	CS1 (SLAVE CS)
39	LED ACT-	40	Ground

Note: The pin-20 of IDE2 is jumper selectable as +5V Vcc for the DOM (DiskOnModule) or DiskOnChip IDE Pro flash disk without the additional power cable.

A.2 Floppy Port

Connector: **Floppy**
Type: 34-pin (2 x 17) header

Pin	Description	Pin	Description
1	Ground	2	DRIVE DENSITY SELECT 0
3	Ground	4	DRIVE DENSITY SELECT 1
5	Ground	6	N/C
7	Ground	8	INDEX-
9	Ground	10	MOTOR ENABLE A-
11	Ground	12	DRIVER SELECT B-
13	Ground	14	DRIVER SELECT A-
15	Ground	16	MOTOR ENABLE B-
17	Ground	18	DIRECTION-
19	Ground	20	STEP-
21	Ground	22	WRITE DATA-
23	Ground	24	WRITE GATE-
25	Ground	26	TRACK 0-
27	Ground	28	WRITE PROTECT-
29	Ground	30	READ DATA-
31	Ground	32	HEAD SELECT-
33	Ground	34	DISK CHANGE-

A.3 Parallel Port

Connector: **Printer**
Type: 26-pin box header

Pin	Description	Pin	Description
1	STROBE-	14	AUTO FEED-
2	D0	15	ERROR-
3	D1	16	INITIALIZE-
4	D2	17	SELECT INPUT-
5	D3	18	Ground
6	D4	19	Ground
7	D5	20	Ground
8	D6	21	Ground
9	D7	22	Ground
10	ACKNOWLEDGE-	23	Ground
11	BUSY	24	Ground
12	PAPER EMPTY	25	Ground
13	SELECT+	26	N/C

A.4 Serial Port

A.4.1 Onboard RS-232C Serial Port

Connector: JCOM1, JCOM2
Type: 10-pin header

Pin	Description	Pin	Description
1	DCD	2	RXD
3	TXD	4	DTR
5	Ground	6	DSR
7	RTS	8	CTS
9	RI	10	N/C

A.5 USB Port

Connector: **USBA**

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

Pin	Description	Pin	Description
1	Vcc	6	Vcc
2	Data0-	7	Data1-
3	Data0+	8	Data2+
4	Ground	9	Ground
5	Ground	10	Ground

A.6 IrDA Port

Connector: **JIR**

Type: 5-pin (1 x 5) header for SIR Port

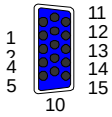
Pin	Description	Pin	Description
1	Vcc	6	N/C
2	N/C	7	CIRRX
3	IRRX	8	5V Standby
4	Ground	9	N/C
5	IRTX	10	N/C

A.7 VGA Port

6

Connector: VGA

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

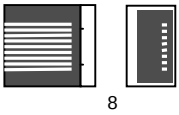


Pin	Description	Pin	Description	Pin	Description
1	RED	6	Ground	11	N/C
2	GREEN	7	Ground	12	VDDAT
3	BLUE	8	Ground	13	HSYNC
4	N/C	9	Vcc	14	VSYNC
5	Ground	10	Ground	15	VDCLK

A.8 LAN Port

Connector: LAN1, LAN2

Type: RJ45 connector on bracket



Pin	1	2	3	4	5	6	7	8
Description	TX+	TX-	RX+	N/C	N/C	RX-	N/C	N/C

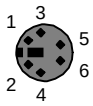
A.9 AT Keyboard Port

Connector: JATKB
Type: 5-pin box header

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

A.10 PS/2 Keyboard and Mouse Port

Connector: PS2
Type: 6-pin MiniDIN connector on bracket



Pin	1	2	3	4	5	6
Description	KBD	MSD	Ground	N/C	KBC	MSC

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

Notes (This page left blank intentionally)

Appendix B. Flash the BIOS

B.1 BIOS Auto Flash Tool

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

http://www.award.com

File name of the tool is “awdflash.exe”, it’s the utility that can write the data into the BIOS flash ship and update the BIOS.

B.2 Flash Method

1. Get the “.bin” file including the image of new BIOS you want to update.
2. Power on the system and flash the BIOS.
3. Re-start the system.

Notes (This page left blank intentionally)

Appendix C. System Resources

C.1 I/O Port Address Map

Address Range	Device
x0000 - x000F	Direct Access Memory Controller
x0010 - x001F	Motherboard Resource
x0020 - x0021	Programmable Interrupt Controller
x0022 - x003F	Motherboard Resource
x0040 - x0043	System Clock
x0044 - x005F	Motherboard Resource
x0060 - x0060	Standard 101/102-Key or Microsoft Natural Keyboard
x0061 - x0061	System Speaker
x0062 - x0063	Motherboard Resource
x0064 - x0064	Standard 101/102-Key or Microsoft Natural Keyboard
x0065 - x006F	Motherboard Resource
x0070 - x0073	System CMOS/ Real Time Clock
x0074 - x007F	Motherboard Resource
x0080 - x0090	Direct Access Memory Controller
x0091 - x0093	Motherboard Resource
x0094 - x009F	Direct Access Memory Controller
x00A0 - x00A1	Programmable Interrupt Controller
x00A2 - x00BF	Motherboard Resource
x00C0 - x00DF	Direct Access Memory Controller
x00E0 - x00EF	Motherboard Resource
x00F0 - x00FF	Numeric Data Processor
x0170 - x0177	Intel(R) 82801BA Ultra ATA Storage Controller - 244B
x0170 - x0177	Secondary IDE controller (dual fifo)
x01F0 - x01F7	Intel(R) 82801BA Ultra ATA Storage Controller - 244B
x01F0 - x01F7	Primary IDE controller (dual fifo)
x0294 - x0297	Motherboard Resource
x02F8 - x02FF	Communication Port (COM2)
x0376 - x0376	Intel(R) 82801BA Ultra ATA Storage Controller - 244B
x0376 - x0376	Secondary IDE controller (dual fifo)
x0378 - x037F	Printer Port (LPT1)
x03B0 - x03BB	SiS315
x03C0 - x03DF	SiS315
x03F0 - x03F5	Standard Floppy Controller
x03F6 - x03F6	Intel(R) 82801BA Ultra ATA Storage Controller - 244B
x03F6 - x03F6	Primary IDE controller (dual fifo)
x03F7 - x03F7	Standard Floppy Controller

x03F8 - x03FF	Communication Port (COM1)
x0400 - x04BF	Motherboard Resource
x04D0 - x04D1	Motherboard Resource
x0500 - x050F	Intel(R) 82801BA/BAM SMBus Controller - 2443
x0778 - x077B	Printer Port (LPT1)
x0A78 - x0A7B	Motherboard Resource
x0B78 - x0B7B	Motherboard Resource
x0BBC - x0BBF	Motherboard Resource
x0CF8 - x0CFF	PCI Bus
x0E78 - x0E7B	Motherboard Resource
x0F78 - x0F7B	Motherboard Resource
x0FBC - x0FBF	Motherboard Resource
x9000 - x907F	SiS315
x9000 - x9FFF	Intel(R) 845 Chipset Processor to AGP Controller - 1A31
xA000 - xA03F	Intel(R) PRO/100 VE Desktop Adapter
xA000 - xAFFF	Intel(R) 82801BA PCI Bridge - 244E
xA400 - xA43F	Intel(R) GD82559ER PCI Adapter
xB000 - xB01F	Intel(R) 82801BA/BAM USB Universal Host Controller - 2442
xB800 - xB81F	Intel(R) 82801BA/BAM USB Universal Host Controller - 2444
xF000 - xF007	Primary IDE controller (dual fifo)
xF000 - xF00F	Intel(R) 82801BA Ultra ATA Storage Controller - 244B
xF008 - xF00F	Secondary IDE controller (dual fifo)

C.2 Memory Address Map

Device	Physical Address Length
0xA0000-0xBFFFF	PCI bus
x00000000 - x0009FFFF	System board extension for ACPI BIOS
x000A0000 - x000AFFFF	SiS315
x000B0000 - x000BFFFF	SiS315
x000C0000 - x000CFFFF	SiS315
x000E0000 - x000EFFFF	System board extension for ACPI BIOS
x000F0000 - x000F3FFF	System board extension for ACPI BIOS
x000F4000 - x000F7FFF	System board extension for ACPI BIOS
x000F8000 - x000FBFFF	System board extension for ACPI BIOS
x000FC000 - x000FFFFF	System board extension for ACPI BIOS
x00100000 - x1FFEFFFF	System board extension for ACPI BIOS
x1FFF0000 - x1FFFFFFF	System board extension for ACPI BIOS
xD0000000 - xDFFFFFFF	Intel(R) 845 Chipset Processor to AGP Controller-1A31
xD0000000 - xDFFFFFFF	SiS315
xE0000000 - xE3FFFFFF	Intel(R) 845 Chipset Processor to I/O Controller-1A30
xE4000000 - xE400FFFF	SiS315
xE4000000 - xE5FFFFFF	Intel(R) 845 Chipset Processor to AGP Controller-1A31
xE5000000 - xE503FFFF	SiS315
xE6000000 - xE7FFFFFF	Intel(R) 82801BA PCI Bridge - 244E
xE7000000 - xE701FFFF	Intel(R) GD82559ER PCI Adapter
xE7020000 - xE7020FFF	Intel(R) PRO/100 VE Desktop Adapter
xE7021000 - xE7021FFF	Intel(R) GD82559ER PCI Adapter
xFEC00000 - xFEC00FFF	System board extension for ACPI BIOS
xFEE00000 - xFEE00FFF	System board extension for ACPI BIOS
xFFB00000 - xFFBFFFFF	System board extension for ACPI BIOS
xFFF00000 – xFFFFFFFF	System board extension for ACPI BIOS

C.3 System IRQ and DMA Resource

C.3.1 IRQ

IRQ Number	Device
0	System Clock
1	Standard 101/102-Key or Microsoft Natural Keyboard
2	Programmable Interrupt Controller
3	Communication Port (COM2)
4	Communication Port (COM1)
5	Intel(R) 82801BA/BAM USB Universal Host Controller - 2444
5	ACPI IRQ Holder for PCI IRQ Steering
6	Standard Floppy Controller
7	Printer Port (LPT1)
8	System CMOS/ Real Time Clock
9	Intel(R) 82801BA/BAM USB Universal Host Controller - 2442
9	ACPI IRQ Holder for PCI IRQ Steering
9	SCI IRQ used by ACPI bus
10	Intel(R) 82801BA/BAM SMBus Controller - 2443
10	Intel(R) GD82559ER PCI Adapter
10	ACPI IRQ Holder for PCI IRQ Steering
11	Intel(R) PRO/100 VE Desktop Adapter
11	ACPI IRQ Holder for PCI IRQ Steering
12	PS/2 Compatible Port
13	Numeric Data Processor
14	Primary IDE controller (dual fifo)
14	Intel(R) 82801BA Ultra ATA Storage Controller - 244B
15	Secondary IDE controller (dual fifo)
15	Intel(R) 82801BA Ultra ATA Storage Controller - 244B

C.3.2 DMA

Channel	Device
0	(free)
1	(free)
2	Standard Floppy Disk Controller
3	(free)
4	Direct Memory Access Controller
5	(free)
6	(free)
7	(free)

Contact Information

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