3302440

User's Manual
Version 1.0

Copyright

Packing List

Hardware

3302440 Single Board Computer .... X 1

Cable Kit

IDE Flat Cable (UltraDMA/33) .... X 1
FDD Cable .... X 1
2 x COM / 1 x LPT Port DB9 / DB25 Cable .... X 2
Dual-USB Port Cable with Bracket .... X 2
PS/2 Keyboard and Mouse Cable .... X 1
UltraATA/100 IDE Cable .... X 1
VGA DB15 Female Cable .... X 1
Audio Cable .... X 1
LAN RJ45 Cable (VL, VXL Only) .... X 1

Printed Matter and Software

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

Table of Contents

Chapter 1. Introduction

1.1   Product Overview

The **3302440** Single Board Computer is an all-in-one industrial 5.25"
drive-size EBX-compliant littleboard computer based on Intel socket 370
architecture, supports Intel PPGA/FC-PGA Pentium-III/Celeron and VIA C3
CPU at 66, 100, 133 MHz FSB with PC-66/100/133 SDRAM. Based on VIA
Pro133 chipset with VIA 693A and 686B, **3302440** supports CPU up to 1.1
GHz at 133 MHz FSB, 512 MB PC133 SDRAM with ECC supported, and
integrated C&T 69000 / 69030 flat panel / CRT SVGA with 2 / 4 MB on-die
video memory, onboard 24-bit LVDS interface, AC97 3D audio, UltraATA/100
PCI enhanced IDE interfaces, and multiple I/O ports including 4 RS232, 2 LPT
and 4 USB ports. The high computing capacity and integrated multi-media
functions make 3302440 be the ideal solution of industrial workstation, node
terminal, transaction station, POS, Kiosk, panel PC, ATM and embedded
application.

Based on Intel socket 370 architecture, **3302440** features the high computing
capacity and high integration with onboard LVDS flat panel SVGA, audio, Intel
PRO/100+ LAN, DiskOnChip interfaces, and 4 COM, 2 LPT, 4 USB ports.
With these features, **3302440** provides the powerful performance and
integrated solutions including, but not limited to the following.

Advanced Computing Platform
Intel Pentium-III / Celeron or VIA C3 CPU supported up to 1.1 GHz with 133
MHz FSB, 512 MB PC133 SDRAM of system memory with ECC supported for
high-end industrial computing platform with high CPU and memory loading.

Powerful VGA Interface
Integrated C&T69000/69030 flat panel SVGA controller with on-die 2/4 MB
video memory to offer the flexibility for a wide range of flat panel supported.
The onboard 24-bit LVDS interface provides the economical solution for the
system with LVDS-based flat panel.
.
10/100 Mbps Fast Ethernet Interface
Integrated with Intel PRO/100+ 10/100 Mbps Fast Ethernet interface with full
duplex, IEEE 802.3U compliant.

Multiple I/O Port Interface

Integrated 4 COM, 2 parallel, 4 USB for industrial applications like POS, Kiosk, Panel PC, ATM and transaction workstation.

1.2   Specifications

General Specification

Form Factor	5.25" drive-size EBX compliant littleboard computer
CPU	Socket 370 supports Intel Pentium-III / Celeron and VIA C3 CPUs up to 1.1 GHz at 66/100/133 MHz of FSB. Intel PPGA/FC-PGA CPU supported (up to Coppermine) Tualatin Processor is not supported
Chipset	VIA Pro133 with 693A and 686B
DRAM	One 168-pin DIMM slot supports 512 MB PC133 SDRAM with ECC supported
BIOS	Phoenix-Award 2Mb PnP flash BIOS
Enhanced IDE	PCI enhanced IDE interface supports dual ports up to 4 ATAPI devices with UltraATA/100 supported One 40-pin box header connector One 44-pin box header connector
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	6-level generates NMI or system reset programmable watchdog timer
Real Time Clock	VIA 686B built-in RTC with lithium battery

Multi-I/O Ports

Chipset	VIA 686B built-in super I/O controller Winbond W83977EF-AW for COM3/4 and LPT2 Ports
Serial Port	Three RS-232 serial port COM1/3/4 and one jumper selectable RS-232/422/485 serial port COM2. Both with 16C550 compatible UART and 16 bytes FIFO
USB Port	Four USB ports with USB version 1.1 compliant Onboard dual 2x5 (10) pin header connectors
Parallel Port	Two bi-direction parallel port with SPP/ECP/EPP mode Onboard dual 2 x 13 (26) pin box header connectors
FDD	1 x FDD port supports up to two FDD
IrDA Port	1 x IrDA compliant Infrared interface supports SIR
K/B & Mouse	PS/2 keyboard and mouse ports with onboard 2 x 5 (10) pin header connector

Solid State Disk Interface

Flash Type	M-systems DiskOnChip-2000 and DiskOnChip Millennium embedded solid state flash disk
Package	Single chip flash disk in 32-pin DIP JEDEC
Capacity	Up to 576 MB flash memory
Data Reliability	ECC / EDC data protection
Memory Window	8 Kbytes of memory window

Display Interface

Chipset	AGP Flat Panel / CRT SVGA with C&T69000
Video Memory	2 MB C&T69000 on-die video memory 4 MB C&T69030 on-die video memory for OEM
Display Type	CRT, LCD monitor, TFT, DSTN, SSTN, EL, Plasma display at VGA, SVGA, XGA, SXGA
Panel Interface	Onboard TTL LCD interface Optional onboard 24-bit LVDS interface
Connector	External DB15 female connector on bracket for CRT Onboard 16-pin header for CRT or analog VGA devices Onboard 50-pin box header for flat panel Optional onboard 20-pin box header for LVDS panel

Ethernet Interface

Chipset	Intel 82559 PCI Fast Ethernet controller
Type	10Base-T / 100Base-TX, auto-switching Fast Ethernet, full duplex, IEEE802.3U compliant
Connector	Onboard 10-pin header with external RJ45 cable

Audio Interface

Chipset	VIA 686B integrated AC97 3D audio controller with onboard codec
Interface	Line-in, line-out, CD-in, Mic-out
Connector	Onboard 10-pin header for line-in, line-out and Mic-out Onboard 4-pin header for CD-in

Expansive Interface

PCI Bus	One 32-bit/33 MHz PCI slot with 3 x bus master PCI via an additional riser card
PC/104	One PC/104 104-pin 16-bit ISA-based interface

Power and Environment

Power Req.	AT 4-pin power connector, +5V, +12V, -12VDC input +5V @ 4.2A typically with Intel Pentium-III 866 MHz CPU and 128 MB PC133 SDRAM
ATX Function	One 3-pin ATX interface with 5V standby
Dimension	146 x 203 mm or 5.75″ x 8″ (L x W), standard EBX size
Weight	0.27 Kg
Temperature	Operating within 0 ~ 60°C (32 ~ 140°F) Storage within -20 ~ 85°C (-4 ~ 185°F)

Ordering Code

3302440VXL	Same as 3302440V but **with onboard 24-bit LVDS and Intel PRO/100+ Fast Ethernet Interface**

1.3   Component Placement

Socket 370
Intel PPGA/FC-PGA
Pentium-III/Celeron
VIA C3 CPU
With 100/133 FSB

DiskOnChip
Interface

VIA Pro133 Chipset
VIA 693A & 686B

PC/104 Interface
PCI Bus Interface

Intel 82559
10/100 Mbps
Fast Ethernet

1 x DIMM
up to 512 MB
PC133 SDRAM
with ECC

C&T69000
Flat Panel VGA

1.4 Block Diagram

```
┌─────────────────────────────────────────────────┐
│  Intel Socket 370 FC-PGA Pentium-III CPU         │
│  Intel Socket 370 PPGA/FC-PGA Celeron CPU        │
│  VIA Socket 370 C3 CPU                           │
└─────────────────────────────────────────────────┘
                    ↕ FSB 66/100/133 MHz
```

CRT/LCD Monitor

Flat Panel (TTL)

Flat Panel (LVDS)

C&T 69000

LVDS

VIA 693A N/B

PC133

1 x 168-pin DIMM 512 MB PC133 SDRAM with ECC Supported

PCI Bus Interface

LAN — 10/100 Mbps — **Intel 82559**

PCI Add-on Cards

ATAPI Device — ATA100 IDE

Audio Devices — **Codec**

USB Devices

PS/2 Keyboard

PS/2 Mouse

FDD

Serial Device

Parallel Device

VIA 686B S/B

PC/104 Add-on Modules

ISA Bus Interface

Winbond SI/O

COM 3/4

LPT2

DiskOnChip

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   Jumpers and Connectors Location

JIO1 JIO2   PCI1   J6   JUSB1 JUSB2   JAUDIO   CPUFAN   ATXCON

JRS

JP1

JP2

U9

IDE2

JKB_MS

PWRCON

JFRNT

U2

FDD

VGA

JIR SYSFAN IDE1   LANCON   LCD   SONY   JLVDS   M1
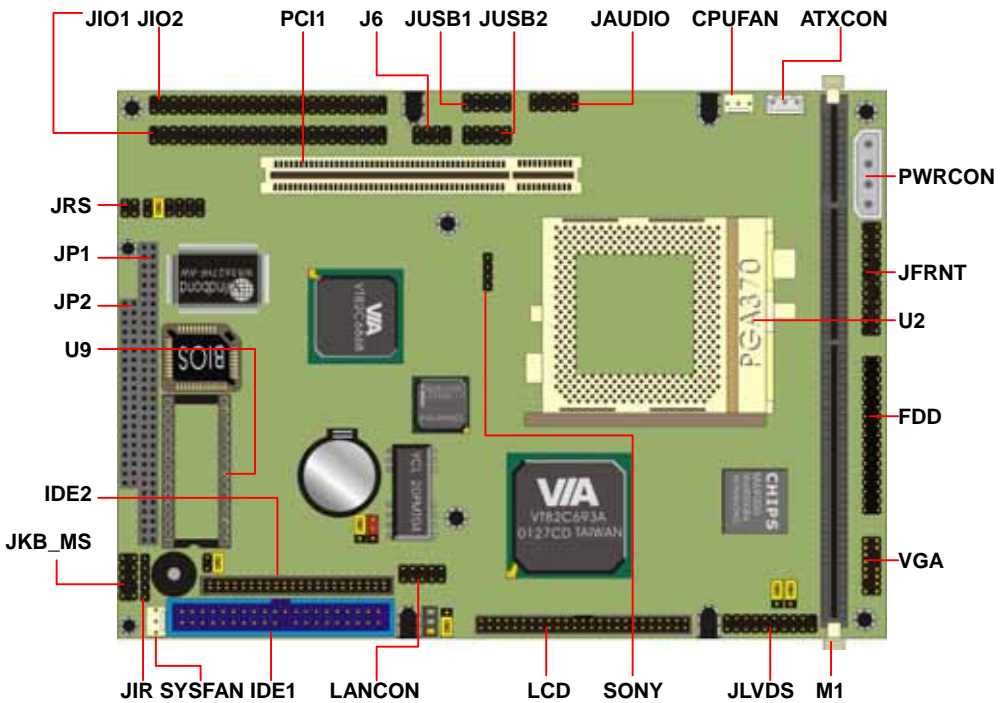
2.1.1 Jumpers Reference

Jumper	Function	Section
JRTC	COMS Setting	2.3
JWDT	Watchdog Timer Setting	2.4
SWDT	Time Out Value of Watchdog Timer Setting	2.4
JDOC	DiskOnChip Address Setting	2.5.1
J1	Flat Panel's Voltage Setting	2.7.2
J2	Flat Panel's Power Setting	2.7.2
JLAN	LAN Enable / Disable Setting	2.8
JCOMSEL	COM2 RS-232/422/485 Mode Setting	2.10.1
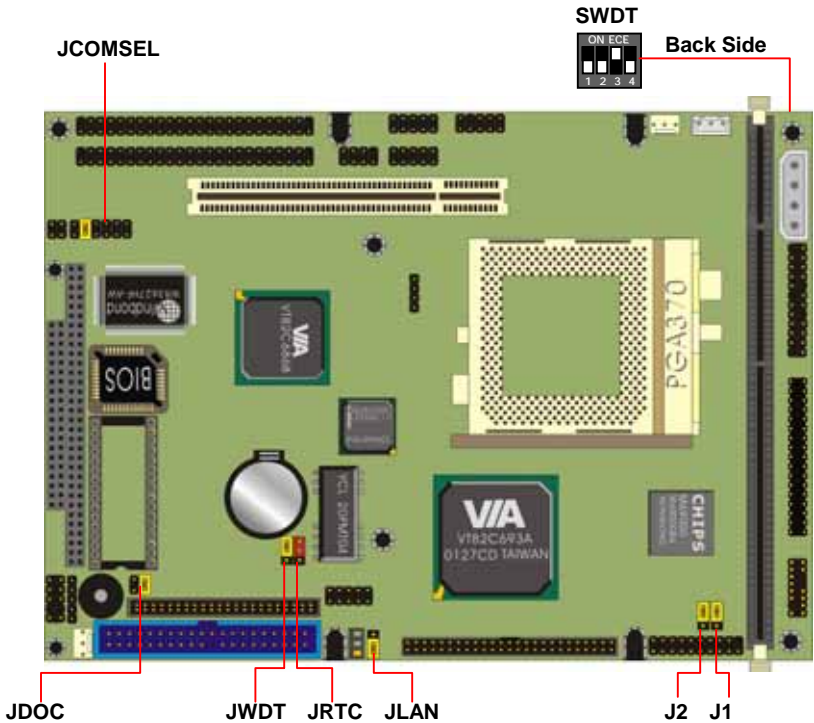
2.1.2 Connectors Reference

Connector	Function	Remark
U2	CPU Socket PGA370	Standard
M1	168-pin DIMM Slot	Standard
IDE1	40-pin Primary IDE Port	Standard
IDE2	44-pin Secondary IDE Port	Standard
FDD	34-pin FDD Port	Standard
JIO1	50-pin COM1/2 and LPT1 Port	Standard
JIO2	50-pin COM3/4 and LPT2 Port	Standard
JUSB1	10-pin 1st / 2nd USB Port	Standard
JUSB2	10-pin 3rd / 4th USB Port	Standard
JRS	10-pin COM2 RS422/485 Serial Port	Standard
U9	32-pin DiskOnChip Socket	Standard
JKB_MS	10-pin PS/2 Keyboard / Mouse Connector	Standard
SIR	5-pin SIR IrDA Port	Standard
PWRCON	4-pin AT Power Connector	Standard
ATXCON	3-pin ATX Signal Connector	Standard
JFRNT	24-pin Front Panel Connector	Standard
CPUFAN	3-pin CPU Fan Connector	Standard
SYSFAN	3-pin System Fan Connector	Standard
VGA	16-pin Analog VGA Port	Standard
JAUDIO	10-pin Audio Port	Standard
SONY	4-pin CD-in Interface	Standard
LCD	50-pin Flat Panel Digital VGA Port	Standard
JLVDS	20-pin LVDS Digital VGA Port	VXL only
LAN_CON	10-pin LAN Port Connector	L only
PCI1	32-bit PCI Slot	Standard
J6	Additional 2 x 32-bit PCI Signal	Standard
JP1/2	104-pin PC/104 Connector	Standard

2.2   CPU and DRAM Setting

The board is based on Intel socket 370 Pentium-III / Celeron architecture supports Intel PPGA/FC-PGA and VIA C3 CPUs at 66/100/133 MHz of FSB. The FSB, ratio and voltage of CPU is default set by CPU without any additional jumper selection. The CPU should be installed into the CPU ZIF socket U2.
Notice!! This board doesn't support Pentium III Tualatin Processor.

The board supports PC-66/100/133 SDRAM up to 512 MB with ECC supported on one 168-pin DIMM slot M1.
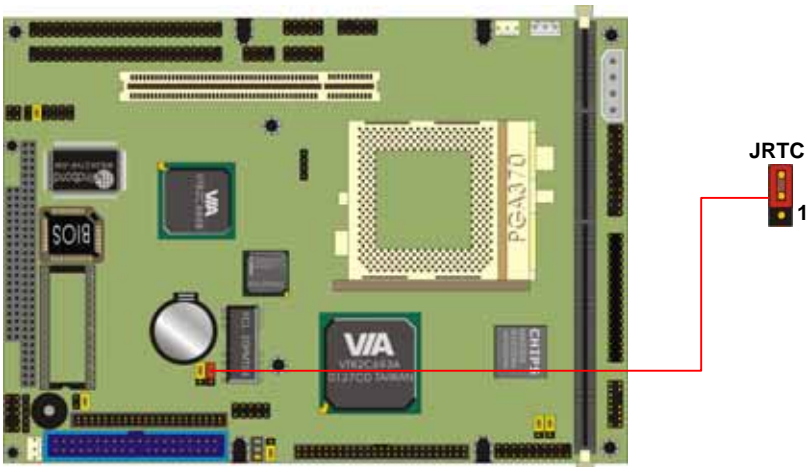

2.3   CMOS Setting

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 (1 x 3) 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 set as system reset or active NMI mode by jumper JWDT; the timeout value can be set as 1, 2, 10, 20, 110, or 220 seconds by jumper SWDT.

Jumper: **JWDT**
Type: onboard 3-pin (1 x 3) header

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

Default setting
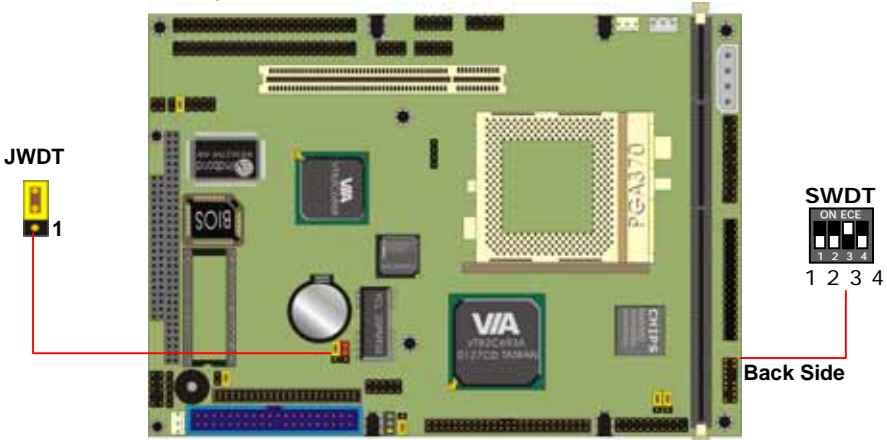
Jumper: **SWDT**
Type: onboard 4-button / 2-level DIP switch

Timeout Value	SWDT	1	2	3	4
1 Second		OFF	OFF	ON	OFF
2 Seconds		OFF	OFF	ON	ON
10 Seconds		OFF	ON	OFF	OFF
20 Seconds		OFF	ON	OFF	ON
110 Seconds		ON	OFF	OFF	OFF
220 Seconds		ON	OFF	OFF	ON

Default setting

2.5   Embedded Flash Disk

The board supports both 32-pin [DiskOnChip 2000](#) and [DiskOnChip IDE Pro](#) embedded flash disk. The onboard 32-pin socket, U9, supports DiskOnChip 2000 single chip flash disk in 32-pin DIP JEDEC with jumper selectable address on jumper JDOC; onboard 40-pin IDE1 box header and 44-pin IDE2 header support DOM (DiskOnModule) or M-systems DiskOnChip IDE Pro flash disk.

2.5.1   DiskOnChip 2000 Address Setting

Jumper: **JDOC**
Type: onboard 4-pin (2 x 2) header

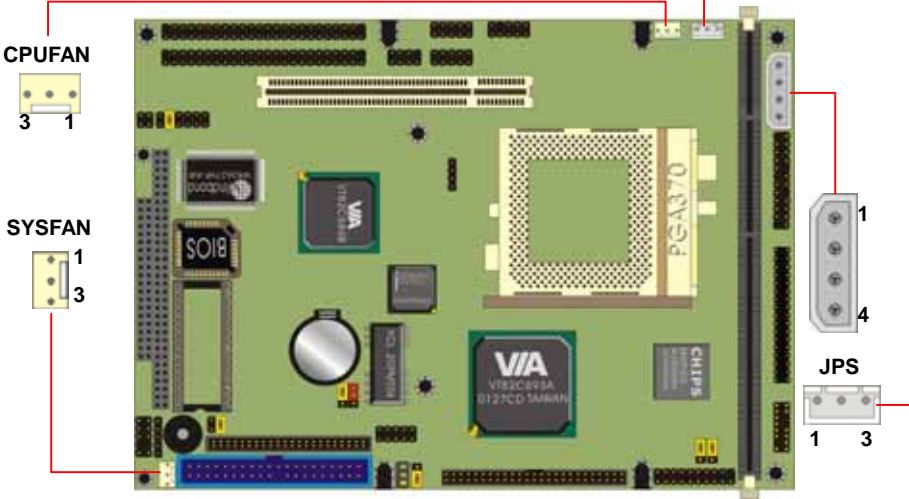| JDOC	DiskOnChip Address
1-2	D000h
3-4	D800h

Default setting
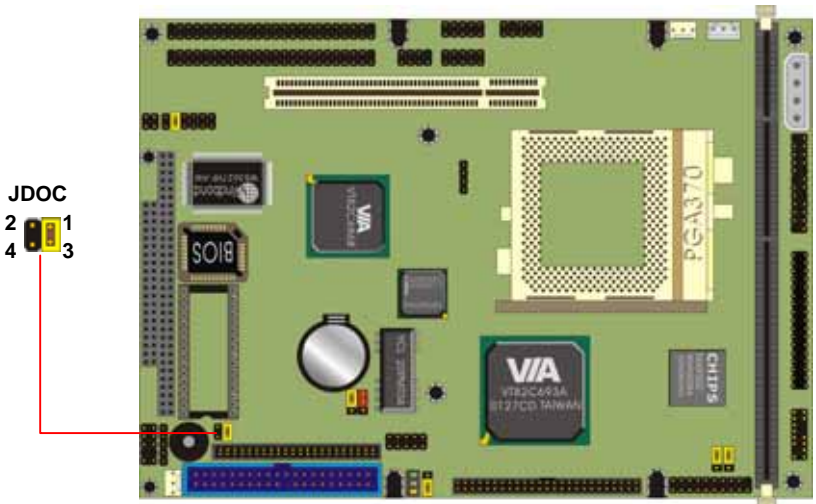
2.5.2   DiskOnModule or DiskOnChip 2000 IDE Pro

The DiskOnModule or IDE Pro flash disk module can be used on normal IDE ports, 40-pin IDE1 with power cable and 44-pin IDE2 without cable.

2.6 Power and Fan Connectors

Connector: **PWRCON**
Type: 4-pin AT Power Connector

Pin	Description	Cable Color Reference
1	+12V	Yellow
2	Ground	Black
3	Ground	Black
4	+5V	Red

Connector: **ATXCON**
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

2.7   VGA Interface

2.7.1   Standard Analog VGA Interface

The board is integrated AGP C&T69000 VGA chipset with built-in 2D engine and 2 MB on-die video memory. It offers both analog and digital video output for CRT or flat panel display. The analog video interface connects via the connector VGA and digital connects via the connector LCD or JLVDS.

VGA
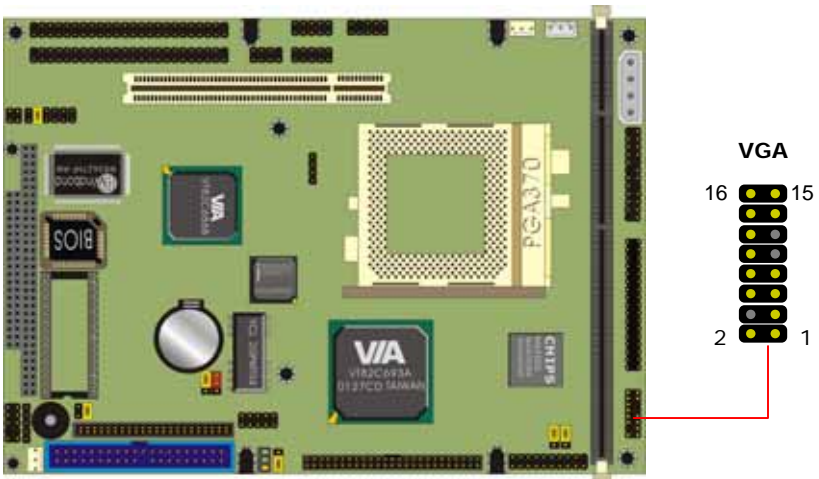
Connector: **VGA**
Type: 16-pin (2 x 8) header

Pin	Description	Pin	Description
1	Red	2	Green
3	Blue	4	N/C
5	Ground	6	Ground
7	Ground	8	Ground
9	N/C	10	Ground
11	N/C	12	Data
13	HSYNC	14	VSYNC
15	Clock	16	N/C

2.7.2   Digital VGA Interface

The board's digital video interface provides both of TTL and LVDS for different types of flat panel. The optional 24-bit LVDS interface offers the economical solution for LVDS-based LCD display. An additional option of digital VGA interface for OEM project with C&T69030 with 4 MB of on-die video memory.
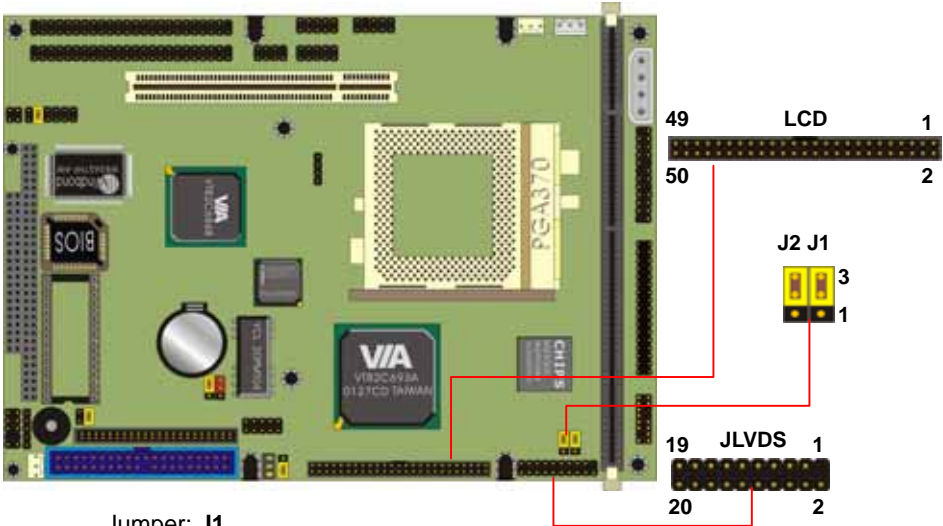
Jumper: **J1**
Type: onboard 3-pin (1 x 3) header

J1	LCD Voltage Setting
1-2	+5V
2-3	+3.3V

Default setting

Jumper: **J2**
Type: onboard 3-pin (1 x 3) header

J2	LCD Power Sequence Control
1-2	Power Input Directly
2-3	Power Sequence Control by Chipset (C&T69K)

Default setting

Connector: **LCD**
Type: onboard 50-pin (2 x 25) box header

Pin	Signal	Pin	Signal
1	+12V	2	+12V
3	GND	4	GND
5	V_{CC} (LCD)	6	ENAVDD
7	ENAVEE	8	GND
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	P24	34	P25
35	SHFCLK	36	FLM
37	M	38	LP
39	GND	40	ENABKL
41	P26	42	P27
43	P28	44	P29
45	P30	46	P31
47	P32	48	P33
49	P34	50	P35

Connector: **JLVDS**
Type: onboard 20-pin (2 x 10) header

Pin	Signal	Pin	Signal
1	Vcc	2	+12V
3	GND	4	GND
5	TA-	6	TA+
7	GND	8	TB-
9	TB+	10	GND
11	TC-	12	TC+
13	GND	14	TCLK-
15	TCLK+	16	GND
17	TD-	18	TD+
19	ENABKL	20	GND

2.8 Ethernet Interface

The board integrated with Intel PRO/100+ Fast Ethernet interface at the type of 10Base-T/100Base-TX auto-switching Fast Ethernet with full duplex and IEEE 802.3U compliant. The LAN controller, Intel 82559, provides the powerful Fast Ethernet interface with embedded operating system (OS) supported, green function (power saving mode / wake-on-LAN) and advanced network management functions.

The onboard LAN is jumper selectable enable or disable by jumper JLAN. The LAN interface is a 10-pin header connector with an additional RJ45 cable in the standard packing list. The LAN LED LED1 shows the status of LAN as active, 10 or 100 Mbps mode.
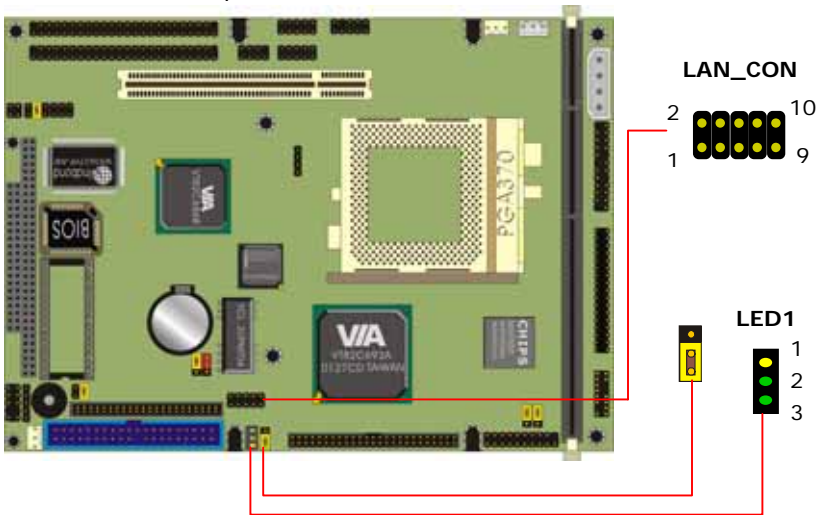
Jumper: **JLAN**
Type: onboard 3-pin (1 x 3) header

JLAN	Mode
1-2	Enable
2-3	Disable

Default setting

Connector: **LAN_CON**
Type: 10-pin (2 x 5) header

Pin	Description	Pin	Description
1	TX+	2	TX-
3	RX+	4	N/C
5	N/C	6	RX-
7	N/C	8	N/C
9	Ground	10	Ground

LAN Indicator LED: **LED1**
Type: 3-pin LED

Pin	1 (Green)	2 (Green)	3 (Yellow)
Description	10 Mbps Mode	100 Mbps Mode	Active Transfer

2.9   Audio Interface

The board integrates with AC97 3D audio interface VIA 686B and 1611A codec that provides line-in, line-out, Mic-in and CD-in interfaces for industrial multi-media applications with audio function.
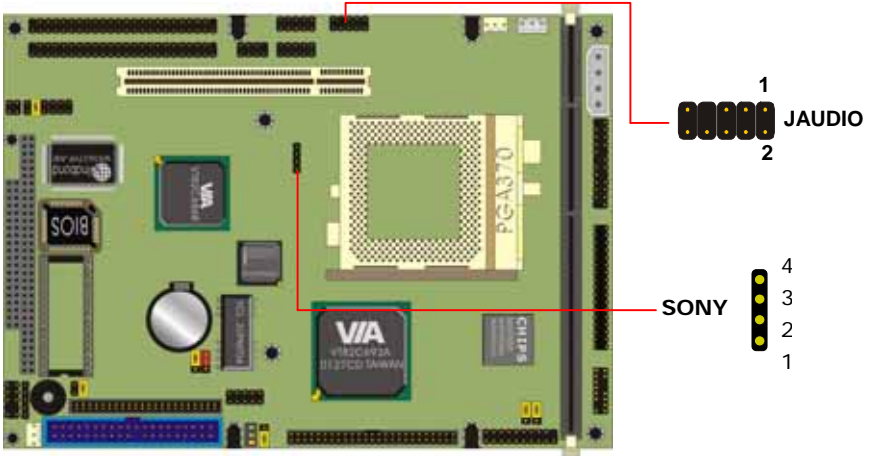
Connector: **JAUDIO**
Type: 10-pin (2 x 5) header

Pin	Description	Pin	Description
1	Line – Right	2	Ground
3	Line – Left	4	MIC
5	MIC	6	Ground
7	N/C	8	Line Out – Left
9	Line Out – Right	10	Ground

Connector: **SONY** (CD Audio Input Interface)
Type: 4-pin (1 x 4) header

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

2.10 Serial Port Configuration

The onboard COM2 RS-422/485 mode setting is done by the jumper JCOMSEL and actives at connector JRS.
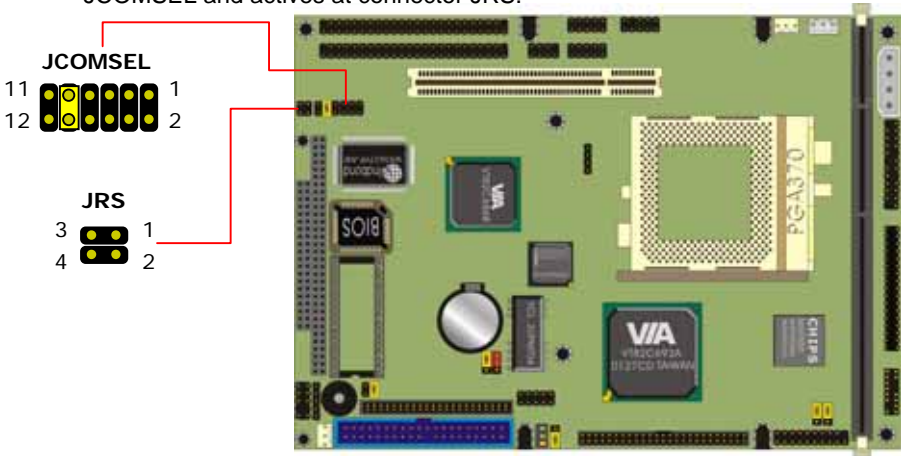
Jumper: **JCOMSEL** (COM2 RS-422/485 Mode Selection)
Type: 12-pin (2 x 6) header

Mode	1-2	3-4	5-6	7-8	9-10	11-12
RS-232	OFF	OFF	OFF	OFF	ON	OFF
RS-485	ON	ON	ON	ON	OFF	ON
RS-422						
RX/TX always enable	OFF	OFF	OFF	OFF	OFF	ON
RX enable by RTS, TX always enable	OFF	ON	OFF	OFF	OFF	ON
RX always enable, TX enable by RTS	ON	OFF	OFF	OFF	OFF	ON
RX/TX enable by RTS	ON	ON	OFF	OFF	OFF	ON

Default setting

Connector: **JRS** (COM2 RS-422/485 Mode)
Type: 4-pin (2 x 2) header

Pin	RS-422	RS-485	Pin	RS-422	RS-485
1	TX-	RS485-	2	TX+	RS485+
3	RX+	N/C	4	RX-	N/C

2.11 Expansive Bus Interfaces

The board offers PCI/ISA expansive bus interfaces including one PCI slot and one PC/104 connector.

2.11.1 PCI Bus Interface

The onboard expansive PCI bus interface offers 3 sets of bus master PCI signal to support up to 3 pieces of PCI-based add-on cards via an additional riser card by header J6.
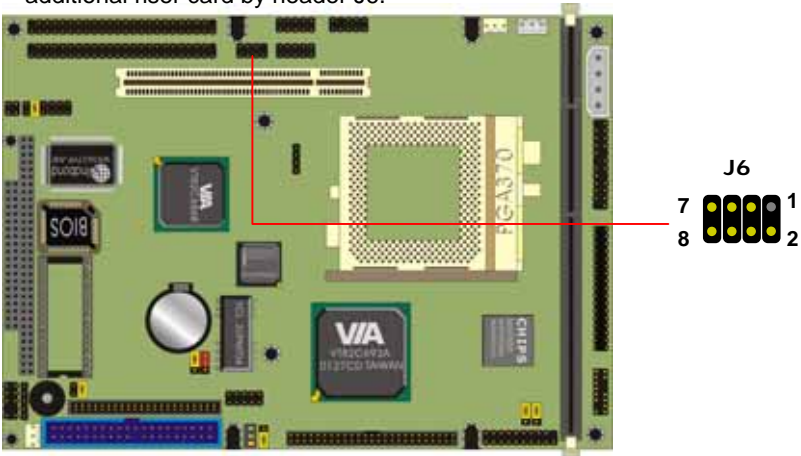
Connector: **J6** (3 x Bus Master PCI Interfaces Supported)
Type: 8-pin (2 x 4) header

Pin	Description	Pin	Description
1	N/C	2	Ground
3	PCI Clock 1	4	PCI Clock 2
5	Request 1	6	Request 2
7	Grant 1	8	Grant 2
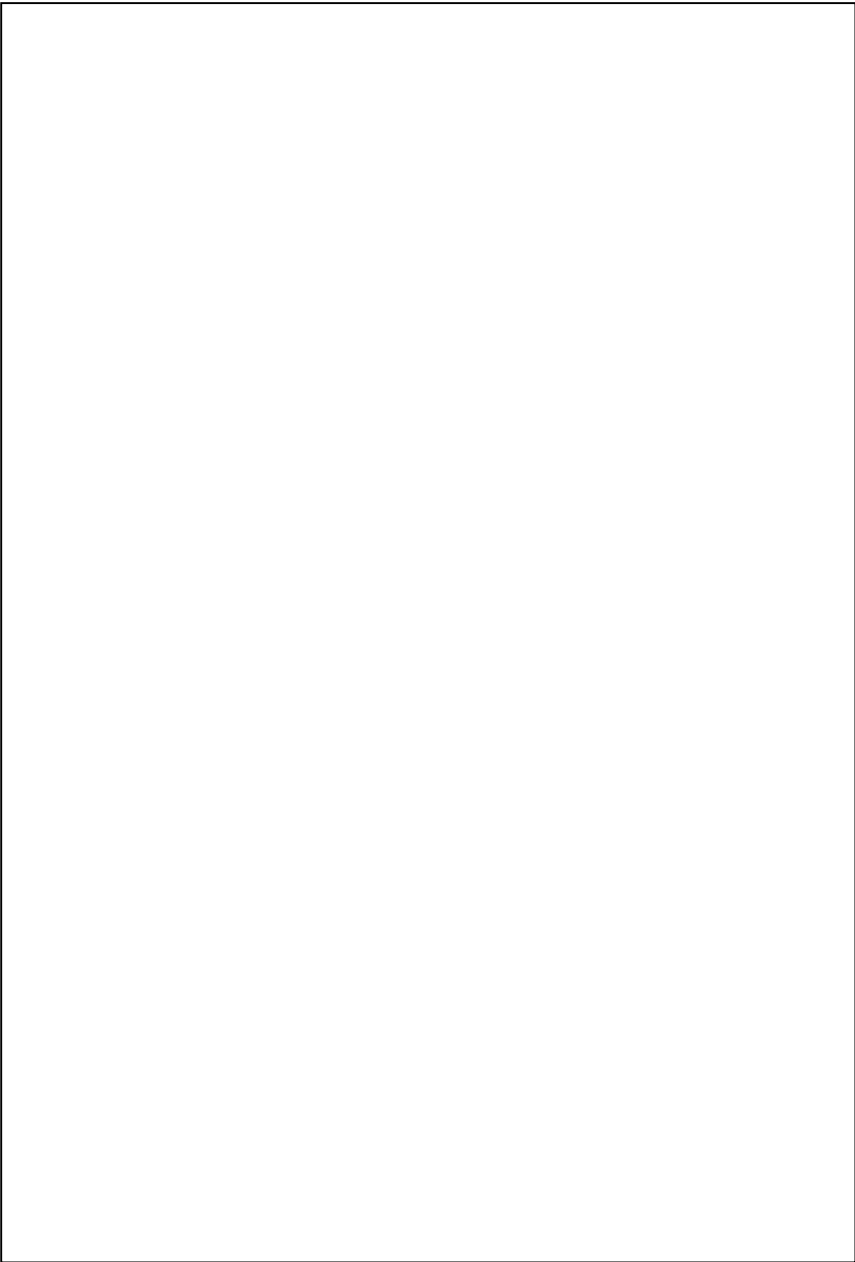
2.11.2 PC/104 Interface

The onboard PC/104 interface includes 8-/16-bit ISA bus interface on the 104-pin connector including JP1 and JP2. More information about PC/104 interface is available at: http://www.pc104.org/

2.12 Switches and Indicators

SMI

GND ——— SMI SWITCH

SPKIN

GND

N/C

GND ——— POWER SWITCH

SPEAKER

N/C

PWRBT

VCC

ACTIVE ——— IDE LED

VCC

GND

KB LOCK

VCC

KBLCK

GND

RESET ——— RESET

Power LED

N/C

GND

VCC

GND ——— GREEN LED

ACPI
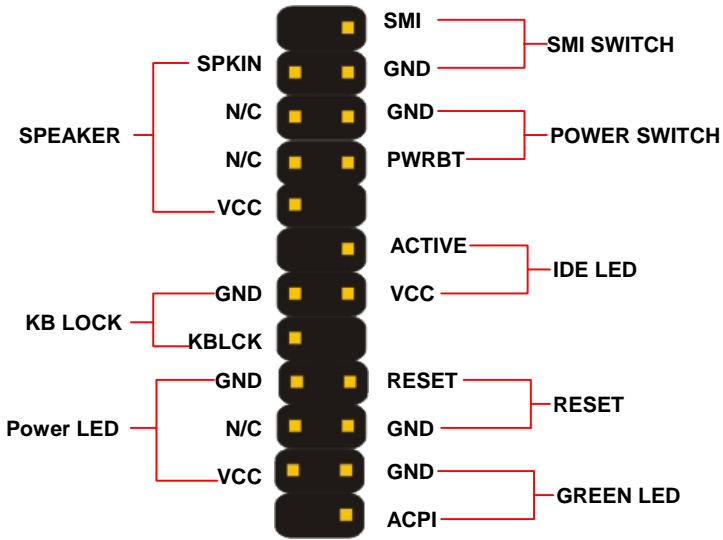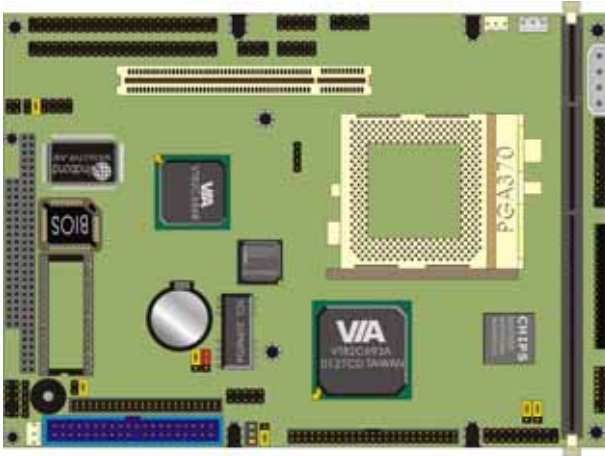
Notes (This page left blank intentionally)

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.

4.1   Install Board's Software

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

4.2   Install Ultra ATA IDE Driver

The selection helps you to install the driver of IDE interface.

4.3   Install VGA Driver

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

4.4   Install LAN Driver

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

4.5   Install Audio Driver

The selection helps you to install the driver of onboard audio interface.
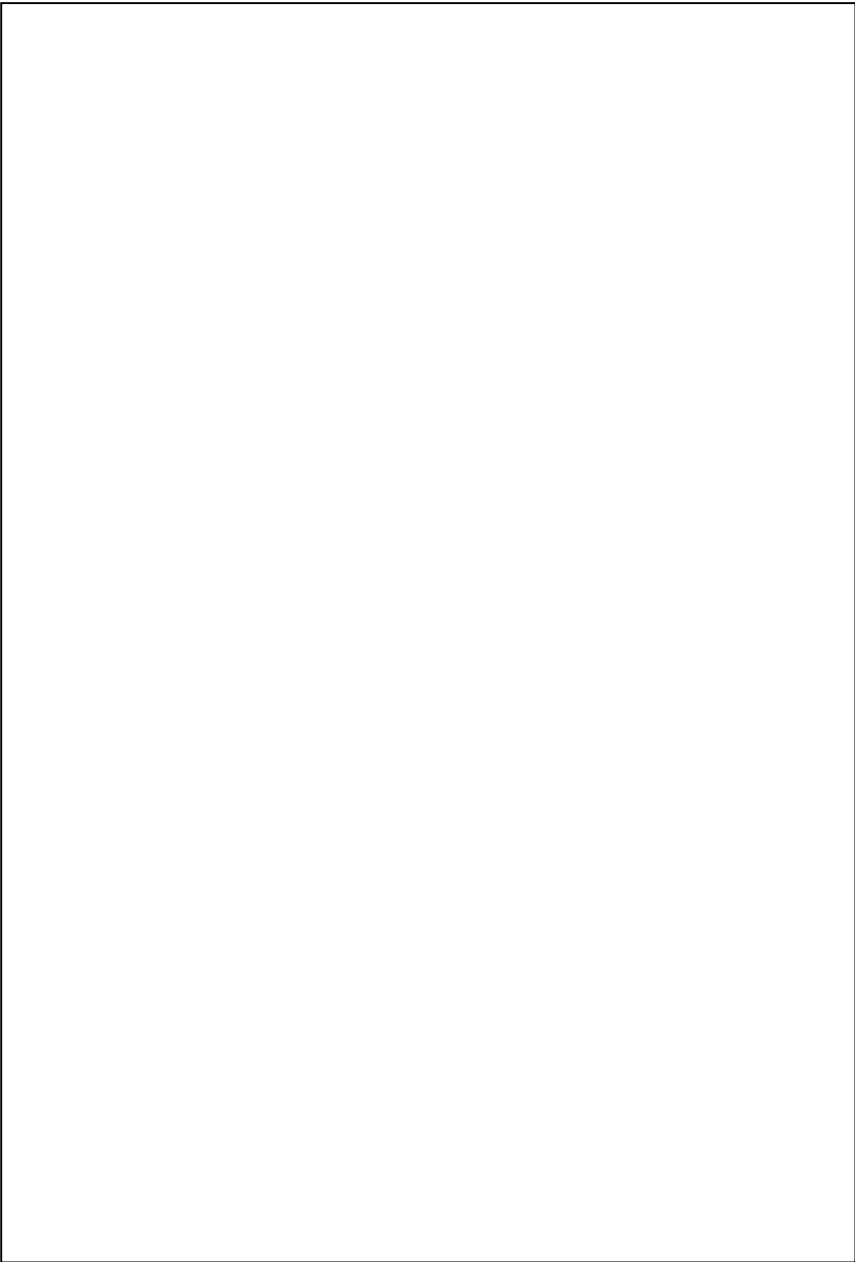
4.6   Link to < *Website* > Homepage

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

4.7   Browse this CD

The selection helps you to find the drivers in this CD directly.

Notes (This page left blank intentionally)

Appendix A.   System Resources

A.1   I/O Port Address Map

Address Range	Device
0x0022-0x003F	PCI bus
0x0044-0x0047	PCI bus
0x004C-0x006F	PCI bus
0x0072-0x007F	PCI bus
0x0090-0x0091	PCI bus
0x0093-0x009F	PCI bus
0x00A2-0x00BF	PCI bus
0x00E0-0x00EF	PCI bus
0x0100-0x0CF7	PCI bus
0x0D00-0xFFFF	PCI bus
0x03B0-0x03BB	PCI to PCI Bridge
0x03B0-0x03BB	Chips And Technologies 69000
0x03C0-0x03DF	PCI to PCI Bridge
0x03C0-0x03DF	Chips And Technologies 69000
0x03D0-0x03D3	Chips And Technologies 69000
0x03D4-0x03D5	Chips And Technologies 69000
0x03D6-0x03D7	Chips And Technologies 69000
0x03D8-0x03DF	Chips And Technologies 69000
0x0A79-0x0A79	ISAPNP Read Data Port
0x0279-0x0279	ISAPNP Read Data Port
0x0274-0x0277	ISAPNP Read Data Port
0xD000-0xD00F	VIA Bus Master IDE Controller
0x01F0-0x01F7	Primary IDE Channel
0x03F6-0x03F6	Primary IDE Channel
0x0170-0x0177	Secondary IDE Channel
0x0376-0x0376	Secondary IDE Channel
0xD400-0xD41F	VIA USB Universal Host Controller
0xD800-0xD81F	VIA USB Universal Host Controller
0xDC00-0xDCFF	Avance AC'97 Audio for VIA (R) Audio Controller
0xE000-0xE003	Avance AC'97 Audio for VIA (R) Audio Controller
0xE400-0xE403	Avance AC'97 Audio for VIA (R) Audio Controller
0x0200-0x0207	Standard Game Port
0xE800-0xE83F	Intel(R) PRO/100+ Management Adapter
0x0020-0x0021	Programmable interrupt controller
0x00A0-0x00A1	Programmable interrupt controller
0x0040-0x0043	System timer

0x0000-0x000F	Direct memory access controller
0x0081-0x0083	Direct memory access controller
0x0087-0x0087	Direct memory access controller
0x0089-0x008B	Direct memory access controller
0x008F-0x0091	Direct memory access controller
0x00C0-0x00DF	Direct memory access controller
0x0060-0x0060	PC/AT Enhanced PS/2 Keyboard (101/102-Key)
0x0064-0x0064	PC/AT Enhanced PS/2 Keyboard (101/102-Key)
0x03BC-0x03BF	Printer Port (LPT1)
0x0378-0x037F	ECP Printer Port (LPT2)
0x0778-0x077F	ECP Printer Port (LPT2)
0x03F8-0x03FF	Communications Port (COM1)
0x02F8-0x02FF	Communications Port (COM2)
0x03E8-0x03EF	Communications Port (COM3)
0x02E8-0x02EF	Communications Port (COM4)
0x03F0-0x03F5	Standard floppy disk controller
0x03F7-0x03F7	Standard floppy disk controller
0x0061-0x0061	System speaker
0x0070-0x0071	System CMOS/real time clock
0x00F0-0x00FF	Numeric data processor

A.2   Memory Address Map

Range	Device
0xA0000-0xBFFFF	PCI bus
0xA0000-0xBFFFF	PCI to PCI Bridge
0xA0000-0xBFFFF	Chips And Technologies 69000
0xC8000-0xEFFFF	PCI bus
0x20000000-0xFFFEFFFF	PCI bus
0xD4000000-0xD5FFFFFF	PCI to PCI Bridge
0xD4000000-0xD5FFFFFF	Chips And Technologies 69000
0xD7100000-0xD7100FFF	Intel(R) PRO/100+ Management Adapter
0xD7000000-0xD70FFFFF	Intel(R) PRO/100+ Management Adapter
0x0000-0x9FFFF	System board
0xFFFE0000-0xFFFFFFFF	System board
0xFEE00000-0xFEE0FFFF	System board
0x100000-0x1FFFFFFF	System board
0xF0000-0xF3FFF	Motherboard resources
0xF4000-0xF7FFF	Motherboard resources
0xF8000-0xFFFFF	Motherboard resources
0xC7800-0xC7FFF	Motherboard resources

A.3   System IRQ and DMA Resource

A.3.1   IRQ

IRQ Number	Device
1	PC/AT Enhanced PS/2 Keyboard (101/102-Key)
3	Communications Port (COM2)
4	Communications Port (COM1)
6	Standard Floppy Disk Controller
8	System CMOS/real time clock
9	Communications Port (COM4)
10	Communications Port (COM3)
11	VIA USB Universal Host Controller
11	VIA USB Universal Host Controller
11	Avance AC'97 Audio for VIA (R) Audio Controller
11	Intel(R) PRO/100+ Management Adapter
12	PS/2 Port Mouse
13	Numeric data processor
14	Primary IDE Channel
15	Secondary IDE Channel

A.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)

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:
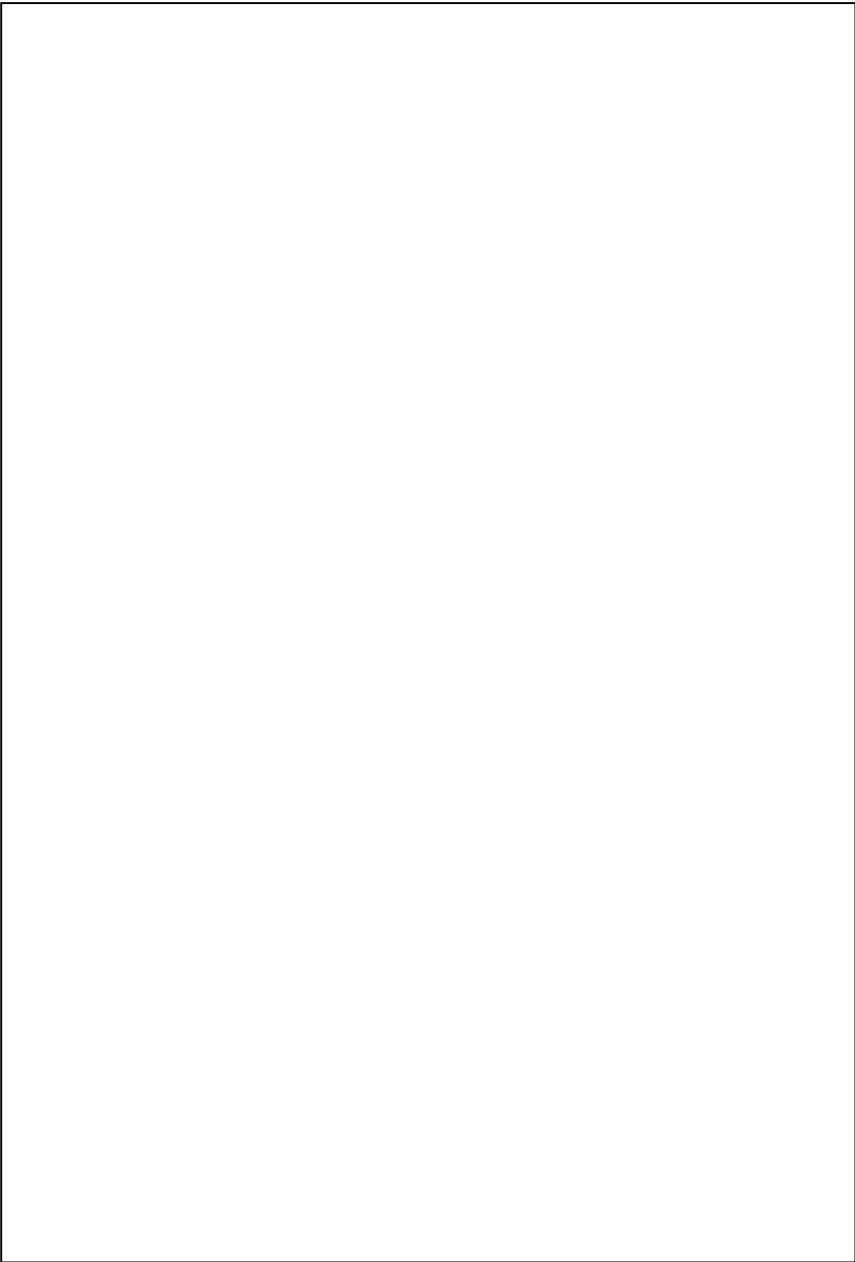
http://www.award.com

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-star the system.

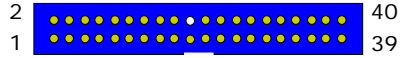# Notes (This page left blank intentionally)

Appendix C. I/O Port Pin Assignment

C.1 IDE Port

Connector: **IDE1**
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

Connector: **IDE2**
Type: 44-pin (2 x 22) 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
21	REQ	22	Ground
23	IOW-/STOP	24	Ground
25	IOR-/HDMARDY	26	Ground
27	IORDY/DDMARDY	28	Ground
29	DACK-	30	Ground
31	IRQ	32	N/C
33	A1	34	SD
35	A0	36	A2
37	CS1	38	CS3
39	ASP1	40	Ground
41	Vcc	42	Vcc
43	Ground	44	Ground

C.2 FDD Port

Connector: **FDD**

Type: 34-pin (2 x 17) header
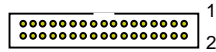
Pin	Description	Pin	Description
1	Ground	2	DRIVE DENSITY SELECT 0
3	Ground	4	DRIVE DENSITY SELECT 1
5	Ground	6	N/C
7	Ground	8	INDEX-
9	Ground	10	MOTOR ENABLE A-
11	Ground	12	DRIVER SELECT B-
13	Ground	14	DRIVER SELECT A-
15	Ground	16	MOTOR ENABLE B-
17	Ground	18	DIRECTION-
19	Ground	20	STEP-
21	Ground	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-

C.3 Serial and Parallel Port

Connector: **JIO1**, **JIO2**
Type: Dual 50-pin (2 x 25) header

Pin	Signal	Pin	Signal
1	N/C	2	Ground
3	DCD1 (3)	4	RXD1 (3)
5	TXD1 (3)	6	DTR1 (3)
7	Ground	8	DSR1 (3)
9	RTS1 (3)	10	CTS1 (3)
11	RI1 (3)	12	N/C
13	DCD2 (4)	14	RXD2 (4)
15	TXD2 (4)	16	DTR2 (4)
17	Ground	18	DSR2 (4)
19	RTS2 (4)	20	CTS2 (4)
21	RI2 (4)	22	N/C
23	STROBE1 (2)	24	AUTO FEED1 (2)
25	D01 (2)	26	ERROR1 (2)
27	D11 (2)	28	INITIALIZE1 (2)
29	D21 (2)	30	SELECT INPUT1 (2)
31	D31 (2)	32	Ground
33	D41 (2)	34	Ground
35	D51 (2)	36	Ground
37	D61 (2)	38	Ground
39	D71 (2)	40	Ground
41	ACKNOWLEDGE1 (2)	42	Ground
43	BUSY1 (2)	44	Ground
45	PAPER EMPTY1 (2)	46	Ground
47	SELECT1 (2)	48	AUTO FEED1 (2)
49	Ground	50	Ground

C.4   USB Port

Connector: **JUSB1**, **JUSB2**
Type: 10-pin (2 x 5) header for dual USB Ports
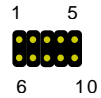
Pin	Description	Pin	Description
1	Vcc	6	Vcc
2	Data0-	7	Data1-
3	Data0+	8	Data2+
4	Ground	9	Ground
5	Ground	10	Ground

C.5   IrDA Port

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

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

C.6   PS/2 Keyboard and Mouse Port

Connector: **JKB_MS**
Type: 10-pin (2 x 5) header connector

Pin	Description	Pin	Description
1	Keyboard Data	2	Mouse Data
3	N/C	4	N/C
5	Ground	6	Ground
7	Ground	8	Ground
9	Keyboard Clock	10	Mouse Clock

Notes (This page left blank intentionally)

Contact Information

Any adviser 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 service for you.

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