



integration with integrity

User's Manual

Single Board Computer 3301550

Version 1.0, August 2006

Copyrights

This manual is copyrighted and all rights are reserved. It does not allow any non authorization in copied, photocopied, translated or reproduced to any electronic or machine readable form in whole or in part without prior written consent from the manufacturer.

In general, the manufacturer will not be liable for any direct, indirect, special, incidental or consequential damages arising from the use of inability to use the product or documentation, even if advised of the possibility of such damages. The manufacturer keeps the rights in the subject to change the contents of this manual without prior notices in order to improve the function design, performance, quality and reliability. The author assumes no responsibility for any errors or omissions, which may appear in this manual, nor does it make a commitment to update the information contained herein.

Trademarks

Intel is a registered trademark of Intel Corporation.

Award is a registered trademark of Award Software, Inc.

All other trademarks, products and or product's name mentioned herein are mentioned for identification purposes only, and may be trademarks and/or registered trademarks of their respective companies or owners.

This Page is Intentionally Left Blank.

Table of Contents

Chapter 1	General Description	1
1.1	Major Features	2
1.2	Specifications	3
1.3	Board Dimensions.....	4
Chapter 2	Unpacking.....	5
2.1	Opening the Delivery Package	5
2.2	Inspection.....	5
Chapter 3	Hardware Installation	7
3.1	Before Installation	7
3.2	Board Layout	8
3.3	Jumper List	9
3.4	Connector List	9
3.5	Configuring the CPU	10
3.6	System Memory	10
3.7	VGA Controller.....	11
3.8	PCI E-IDE Drive Connector	13
3.9	Floppy Disk Drive Connector	15
3.10	Parallel Connector	16
3.11	Serial Port Connectors.....	17
3.12	Ethernet Connector	18
3.13	USB Connector	19
3.14	CMOS Data Clear	19
3.15	Power and Fan Connectors.....	20
3.16	Keyboard/Mouse Connector	21
3.17	System Front Panel Connectors	21
3.18	Watchdog Timer.....	22
3.19	Audio Connectors	23
3.20	CompactFlash™ Connector	23

Chapter 4	AMI BIOS Setup	25
4.1	Starting Setup	25
4.2	Main Menu	26
4.3	Advanced Settings	27
4.4	Advanced PCI/PnP Settings	34
4.5	Boot Settings	35
4.6	Security Settings	38
4.7	Advanced Chipset Settings.....	39
4.8	APM Configuration	41
4.9	Exit Options	42
Chapter 5	Software Utilities.....	43
5.1	IDE Driver Installation	44
5.2	VGA Driver Installation.....	48
5.2.1	Win 98	48
5.2.2	Win NT	51
5.2.3	Win 2000.....	53
5.3	LAN Driver Installation.....	57
5.3.1	Win 98.....	57
5.3.2	Win NT	60
5.3.3	WIN2K.....	67
5.4	Audio Driver Installation	70
5.5	USB2.0 Driver Installation.....	72
5.5.1	Win 98.....	72
5.5.2	Win 2000.....	76
5.5.3	Win XP	80

Safety Instructions

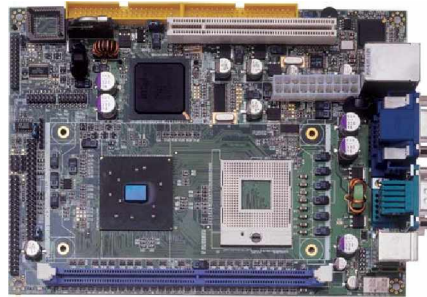
Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

- ” Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- ” Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This helps to discharge any static electricity on your body.
- ” Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components. Fasten the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please wear and connect the strap before handling the 3301550 to protect yourself from the discharge of any static electricity through the strap.
- ” Please use an anti-static pad when putting down any components or parts or tools outside the computer. You may also use an anti-static bag instead of the pad. Please inquire from your local supplier for additional assistance in finding the necessary anti-static gadgets.

NOTE: *DO NOT TOUCH THE BOARD OR ANY OTHER SENSITIVE COMPONENT WITHOUT ALL NECESSARY ANTI-STATIC PROTECTION.*

Chapter 1

General Description



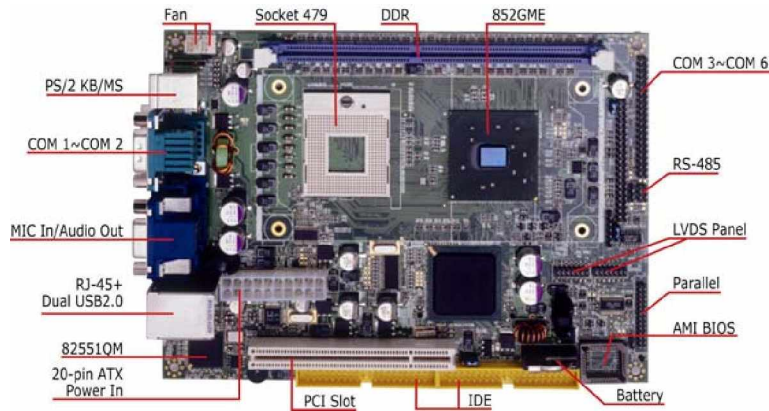
The 3301550A/3301550B is an Intel® 852GME GMCH/ICH4 chipset-based and 3301550A/3301550B is and Intel® 852GM GMCH/ICH4 chipset-based board designed embedded engine board. 3301550A/3301550B provides Intel® Pentium® M/Celeron® M processor 1.3~2.8GHz, and 3301550A/3301550B provides ULV Intel® Celeron® M processor 600MHz. The combination of these features makes the 3301550A/3301550B an ideal all-in-one industrial embedded engine board. Additional features include an enhanced I/O with CF reader, LAN, audio, 6 COM and USB2.0 port interface.

Its onboard ATA/33/66/100 connected to IDE drive interface architecture allows the 3301550A/3301550B to support data transfers of 33, 66 or 100MB/sec. for each IDE drive connection. The display controller is Intel® 82852GME (3301550A)/852GM (3301550B) for CRT display supporting up to 1600 x 1200. It also provides 18-bit single channel/36-bit dual channel LVDS Panel display interface.

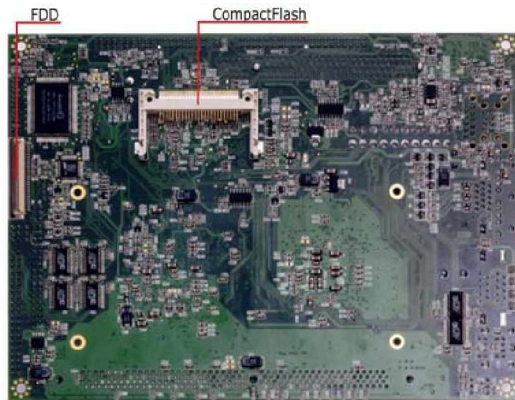
System memory is also sufficient with the one DDR socket that can support up to 1GB. It also provides one IDE interface Type II CompactFlash card adapter connector.

Additional onboard connectors include two internal and two external USB2.0 ports providing faster data transmission, and one external RJ-45 connector for use of one 10/100 Base-TX Ethernet interfaces.

1.1 Major Features



Front Side



Solder Side

The 3301550A/3301550B comes with the following features:

3301550 provides Intel® Pentium® M/Celeron® M processor 1.3~2.0GHz

3301550M provides ULV Intel Celeron M processor 600MHz/512K L2 cache

3301550 provides 400/533MHz FSB

One DDR socket with a max. capacity of 1GB

3301550A use Intel® 852GME GMCH/ICH4 system chipset

3301550B use Intel® 852GM GMCH/ICH4 system chipset

Winbond W83627HF super I/O chipset
3301550A use Intel® 852GME GMCH/ICH4 system chipset
3301550B use Intel® 852GM GMCH/ICH4 system chipset
LVDS Panel display interface
Intel® 82551QM fast Ethernet controller
AC97 3D audio controller
Fast PCI ATA/33/66/100 IDE controller
CompactFlash card adapter, six COM, four USB2.0 ports
Hardware Monitor function

1.2 Specifications

CPU:

3301550 provides:

Intel® Pentium® M processor 760 2.0GHz

Intel® Pentium® M processor 745 1.8GHz

Intel® Celeron® M processor 370 1.5GHz

Intel® Celeron® M processor 320 1.3GHz

3301550M provides ULV Intel® Celeron® M processor 600MHz/512K L2 cache

Front Side Bus: Supports 400/533MHz FSB (only 3301550A)

Memory: One DDR socket supporting up to 1GB

Chipset: Intel® 852GME GMCH/ICH4 (3301550A), Intel® 852GM GMCH/ICH4 (3301550B)

I/O Chipset: Winbond W83627HF

CompactFlash: One, Type II IDE interface adapter

PCI Slot: One standard PCI slot

VGA: Intel® 82852GME (3301550A) / Intel® 82852GM (3301550B) supporting CRT display up to 1600 x 1200

LVDS Panel: Supports 18-bit single channel/36-bit dual channel LVDS interface

Ethernet: Intel® 82551QM 10/100 Based LAN

Audio: AC97 3D audio controller

IDE: Four IDE disk drives supporting ATA/33/66/100 with transfer rates of up to 33/66/100MB/sec.

FDD: Supports one slim floppy disk drive

Parallel: One enhanced bi-directional parallel port supporting SPP/ECP/EPP

Serial Port: 16C550 UART-compatible RS-232/485 x 1 and RS-232 x 5 serial ports with 16-byte FIFO

USB: Four USB2.0 ports, two internal and two external

Keyboard: PS/2 6-pin Mini DIN

Mouse: PS/2 6-pin Mini DIN

BIOS: AMI PnP Flash BIOS

Watchdog Timer: Software programmable time-out intervals from 1~256 sec.

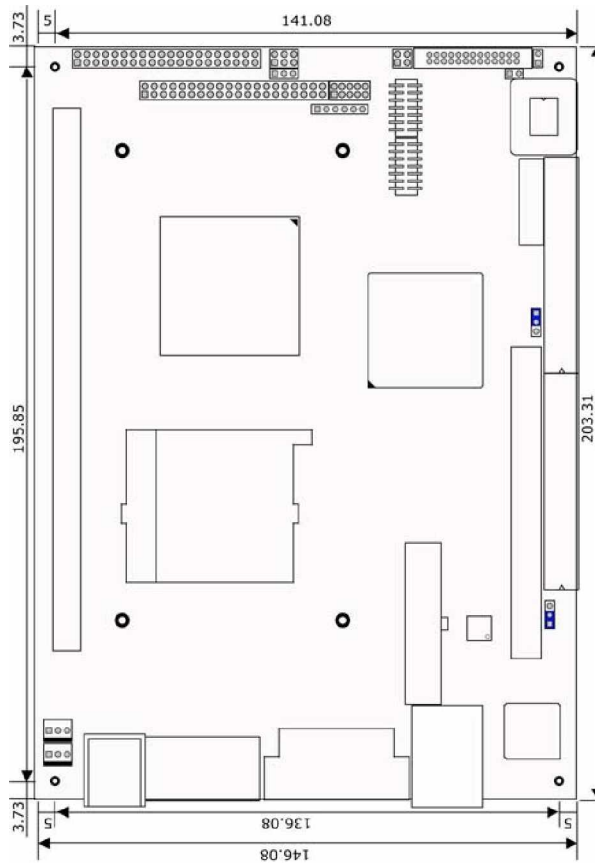
CMOS: Battery backup

Temperature: 0~+60°C (operating)

Hardware Monitor: Winbond W83627HF

Board Size: 20.3(L) x 14.6(W) x 3.3(H) cm

1.3 Board Dimensions



Chapter 2

Unpacking

2.1 Opening the Delivery Package

The 3301550A/3301550B is packed in an anti-static bag. The board has components that are easily damaged by static electricity. Do not remove the anti-static wrapping until proper precautions have been taken. Safety Instructions in front of this manual describe anti-static precautions and procedures.

2.2 Inspection

After unpacking the board, place it on a raised surface and carefully inspect the board for any damage that might have occurred during shipment. Ground the board and exercise extreme care to prevent damage to the board from static electricity.

Integrated circuits will sometimes come out of their sockets during shipment. Make sure all integrated circuits, particularly the BIOS, processor, memory modules, ROM-Disk, and keyboard controller chip are firmly seated. The 3301550A/3301550B delivery package contains the following items:

- * 3301550A/3301550B Board x 1
- * Utility CD Disk x 1
- * Cables Package x 1
- * Cooling Fan & Heat Sink x 1
- * Jumper Bag x 1
- * User's Manual



Cables Package	
NO.	Description
1	Four COM flat cable x 1
2	ATA/100 IDE flat cable x 2
3	Two USB flat cable with bracket x 1
4	MIC/Audio flat cable with bracket x 1
5	Floppy cable x 1
6	Printer flat cable with bracket x 1

Chapter 3

Hardware Installation

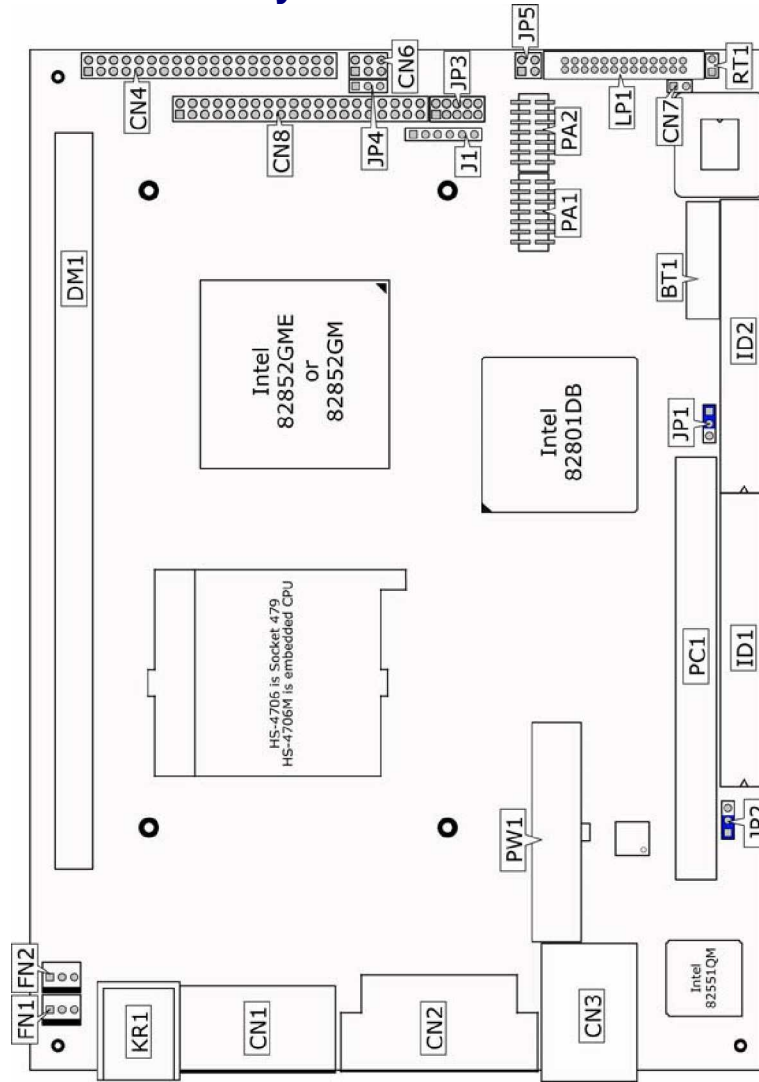
This chapter provides the information on how to install the hardware using the 3301550A/3301550B. This chapter also contains information related to jumper settings of switch, watchdog timer etc.

3.1 Before Installation

After confirming your package contents, you are now ready to install your hardware. The following are important reminders and steps to take before you begin with your installation process.

1. Make sure that all jumper settings match their default settings and CMOS setup correctly. Refer to the sections on this chapter for the default settings of each jumper. (Set JP1 1-2)
2. Go through the connections of all external devices and make sure that they are installed properly and configured correctly within the CMOS setup. Refer to the sections on this chapter for the detailed information on the connectors.
3. Keep the manual and diskette in good condition for future reference and use.

3.2 Board Layout



3.3 Jumper List

Jumper	Default Setting	Setting	Page
JP1	Clear CMOS: <i>Normal Operation</i>	Short 1-2	19
JP2	Onboard LAN Function Enabled/Disabled Select: <i>Enabled</i>	Short 1-2	18
JP3	COM 4 Use RS-232 or RS-422/485 Select: <i>RS-232</i>	Open	17
JP4	Panel Voltage Select: <i>+3.3V</i>	Short 2-3	11
JP5	CPU FSB Frequency Select: <i>400MHz FSB</i>	Short 3-4	10

3.4 Connector List


Connector	Definition	Page
CN1	COM 1/COM 2 Connector (DB9)	17
CN2 (1-15)	15-pin CRT Connector	11
CN2 (17-32)	External Audio Connector	23
CN3 (1-14)	RJ-45 Connector	18
CN3 (23-30)	Dual USB2.0 Ports	19
CN4	COM 3~COM 6 Connector (5x2 header)	17
CN6	RS-422/485 Connector (3x2 header)	17
CN7	2-pin ATX Power Switch	20
CN8 (1-16)	Control Panel Connector	21
CN8 (17-22)	LAN LED Connector	18
CN8 (25-32)	MIC In/Audio Out Connector	23
CN8 (33-40)	Internal USB2.0 Ports	19
CN9	CompactFlash Connector	23
DM1	DDR Socket	10
FD1	Floppy Connector	15
FAN1 / FAN2	Fan Power In Connector	20
ID1 / ID2	Primary/Secondary IDE Connector	13
J1	Inverter Power In Connector	11
KR1	PS/2 6-pin Mini DIN KB and MS Connector	21
LP1	Parallel Port	16
PA1 / PA2	LVDS Panel Connector	11
PC1	Standard PCI Slot	---
PW1	20-pin ATX Power In Connector	20

3.5 Configuring the CPU

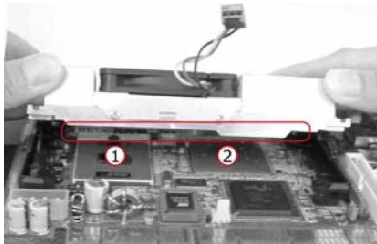
The 3301550 provides Intel® Pentium® M/Celeron® M processor 1.3~2.0GHz, and 3301550M provides ULV Intel® Celeron® M processor 600MHz/512K L2 cache. It offers the convenience in CPU installation with its auto-detect feature. 3301550 provides 400/533MHz FSB, if you want use 533MHz FSB, please setting *JP5* as follow table.

z **JP5: CPU FSB Frequency Select (for 3301550 only)**

Options	JP5(1-2)	JP5(3-4)
400MHz (default)	Open	Short
533MHz	Open	Open



Heat Sink Installation



Please smear the heat sink paste over CPU and 852GM GMCH chipset uniformly. Then secure the heat sink as the picture above

3.6 System Memory

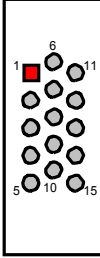
The 3301550A/3301550B provides one DDR socket at location *DM1*. The maximum capacity of the onboard memory is 1GB.

3.7 VGA Controller

The display controller is Intel® 82852GME (3301550A)/82852GM (3301550B) for CRT display supporting up to 1600 x 1200. 3301550A/3301550B also provides 18-bit single channel/36-bit dual channel LVDS display interface. The 3301550A/3301550B provides two methods of connecting VGA device. CN2(1-15) offers a single standard CRT connector (DB15), or PA1/PA2 offer 18-bit/36-bit LVDS panel connectors.


Z CN2 (1-15): 15-pin CRT Connector (DB15)

PIN	Description	PIN	Description
1	RED	2	GREEN
3	BLUE	4	N/C
5	GND	6	GND
7	GND	8	GND
9	N/C	10	GND
11	N/C	12	SDA
13	HSYNC	14	VSYNC
15	SCL		



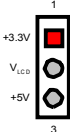
Z J1: Inverter Power In Connector

PIN	Description
1	+12V
2	+12V
3	+5V
4	BackLight Enabled
5	LCD Enabled
6	GND



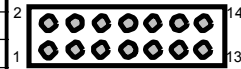
Z JP4: Panel Voltage Select

Options	Settings
+5V	Short 1-2
+3.3V (default)	Short 2-3



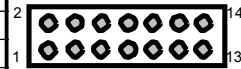
Z PA1: LVDS Panel Connector

PIN	Description	PIN	Description
1	VCC3	2	VCC3
3	GND	4	GND
5	A0-	6	A0+
7	A1-	8	A1+
9	A2-	10	A2+
11	CLK1-	12	CLK1+
13	N/C	14	N/C



Z PA2: LVDS Panel Connector

PIN	Description	PIN	Description
1	VCC3	2	VCC3
3	GND	4	GND
5	A4-	6	A4+
7	A5-	8	A5+
9	A6-	10	A6+
11	CLK2-	12	CLK2+
13	N/C	14	N/C



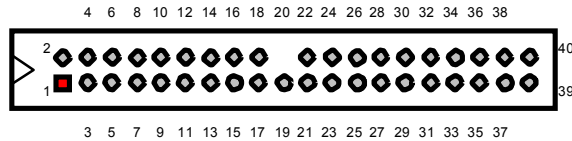
NOTE: *If using PA1 only, it just supports 18-bit single channel LVDS Panel; If you want to use 36-bit dual channel LVDS Panel, please using PA1 and PA2 combined.*

3.8 PCI E-IDE Drive Connector

ID1 and ID2 are standard 40-pin daisy-chain driver connector that serves the PCI E-IDE drive provisions onboard the 3301550A/3301550B. A maximum of four ATA/33/66/100 IDE drives can be connected to the 3301550A/3301550B via IDE1 and IDE2.

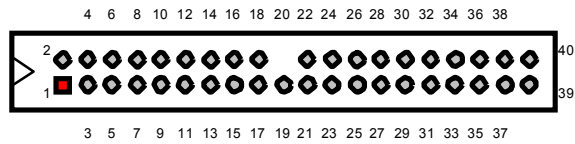
z ID1: Primary IDE Connector

PIN	Description	PIN	Description
1	RESET	2	GND
3	PDATA 7	4	PDATA 8
5	PDATA 6	6	PDATA 9
7	PDATA 5	8	PDATA 10
9	PDATA 4	10	PDATA 11
11	PDATA 3	12	PDATA 12
13	PDATA 2	14	PDATA 13
15	PDATA 1	16	PDATA 14
17	PDATA 0	18	PDATA 15
19	GND	20	N/C
21	PDREQ	22	GND
23	PIOW#	24	GND
25	PIOR#	26	GND
27	PIORDY	28	PD1-
29	PDA1-	30	GND
31	Interrupt	32	N/C
33	PDA0-	34	PATA66
35	PDA0-	36	PDA2-
37	PCS1-	38	PCS3-
39	HDD Active	40	GND



Z ID2: Secondary IDE Connector

PIN	Description	PIN	Description
1	RESET	2	GND
3	SDATA 7	4	SDATA 8
5	SDATA 6	6	SDATA 9
7	SDATA 5	8	SDATA 10
9	SDATA 4	10	SDATA 11
11	SDATA 3	12	SDATA 12
13	SDATA 2	14	SDATA 13
15	SDATA 1	16	SDATA 14
17	SDATA 0	18	SDATA 15
19	GND	20	N/C
21	SDREQ	22	GND
23	SIOW#	24	GND
25	SIOR#	26	GND
27	SIORDY	28	SD1-
29	SDACK-	30	GND
31	Interrupt	32	N/C
33	SDA1-	34	SATA66
35	SDA0-	36	SDA2
37	SCS1-	38	SCS3-
39	HDD Active	40	GND



3.9 Floppy Disk Drive Connector

The 3301550A/3301550B uses a 26-pin connector, *FD1*, for one slim floppy disk drive connection.

z FD1: FDD Connector

PIN	Description	PIN	Description
1	Disk Select 1	14	N/C
2	GND	15	Direction #
3	Read Data #	16	N/C
4	GND	17	Motor Enable 0
5	Write Protect #	18	N/C
6	N/C	19	N/C
7	Track0 #	20	N/C
8	N/C	21	Disk Change #
9	Wgate #	22	VCC
10	GND	23	Driver 0
11	Write Data #	24	VCC
12	GND	25	Index #
13	Step #	26	VCC

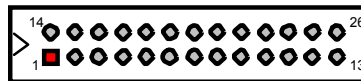


3.10 Parallel Connector

LP1 is a standard 26-pin flat cable connector designed to accommodate parallel port connection onboard the 3301550A/3301550B.

z LP1: Parallel Connector

PIN	Description	PIN	Description
1	Strobe	14	Auto Form Feed
2	DATA 0	15	ERROR#
3	DATA 1	16	Initialize
4	DATA 2	17	Printer Select LN#
5	DATA 3	18	GND
6	DATA 4	19	GND
7	DATA 5	20	GND
8	DATA 6	21	GND
9	DATA 7	22	GND
10	Acknowledge	23	GND
11	Busy	24	GND
12	Paper Empty	25	GND
13	Printer Select	26	GND

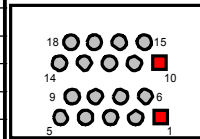


3.11 Serial Port Connectors

The 3301550A/3301550B offers NS16C550 compatible UARTs with Read/Receive 16-byte FIFO serial ports.

z CN1: COM 1/COM 2 Connector (DB9)

PIN	Description	PIN	Description
1	DCD1	10	DCD2
2	DSR1	11	DSR2
3	RXD1	12	RXD2
4	RTS1	13	RTS2
5	TXD1	14	TXD2
6	CTS1	15	CTS2
7	DTR1	16	DTR2
8	RI1	17	RI2
9	GND	18	GND



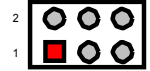
z CN4: COM 3~COM 6 Connector (5x2 header)

PIN	Description	PIN	Description
1	DCD3	2	DSR3
3	RXD3	4	RTS3
5	TXD3	6	CTS3
7	DTR3	8	RI3
9	GND	10	N/C
11	DCD4	12	DSR4
13	RXD4	14	RTS4
15	TXD4	16	CTS4
17	DTR4	18	RI4
19	GND	20	N/C
21	DCD5	22	DSR5
23	RXD5	24	RTS5
25	TXD5	26	CTS5
27	DTR5	28	RI5
29	GND	30	N/C
31	DCD6	32	DSR6
33	RXD6	34	RTS6
35	TXD6	36	CTS6
37	DTR6	38	RI6
39	GND	40	N/C



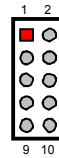
Z CN6: RS-422/485 Connector (3x2 header)

PIN	Description	PIN	Description
1	TX-	2	TX+
3	RX+	4	RX-
5	GND	6	VCC



Z JP3: COM 4 use RS-232 or RS-422/485 Select

Options	Settings
RS-232 (default)	All Open
RS-485 by AUTO	Short 5-7, 8-10
RS-485 by -RTS	Short 7-9, 8-10
RS-422 Full Duplex	Short 6-8

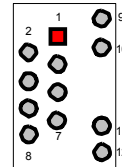


3.12 Ethernet Connector

The 3301550A/3301550B provides one 10/100 Base-TX LAN interface connector. Please refer to the following for its pin information.

Z CN3(1-14): RJ-45 Connector

PIN	Description	PIN	Description
1	RCT	2	TX+
3	TX-	4	RX+
5	RX-	6	N/C
7	N/C	8	N/C
9	N/C	10	RCT
11	Link LED	12	330Ω pull 3VSB
13	330Ω pull 3VSB	14	ACT LED



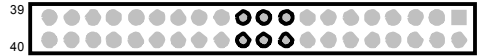
Z JP2: Onboard LAN Function Enabled/Disabled Select

Options	Settings
Enabled (default)	Short 1-2
Disabled	Short 2-3



Z CN8(17-22): LAN LED Connector

PIN	Description	PIN	Description
17	Link LED	18	330Ω pull 3VSB
19	ACT LED	20	330Ω pull 3VSB
21	Speed LED	22	330Ω pull 3VSB

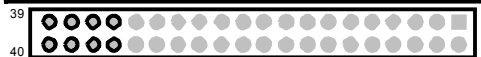


3.13 USB Connector

The 3301550A/3301550B provides one 8-pin internal connector at location *CN8(33-40)* and two 4-pin external connector, at locations *CN3(23-30)*, for four USB2.0 connections to the 3301550A/3301550B.

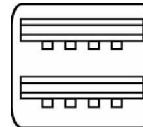
Z CN8(33-40): Internal USB2.0 Connector

PIN	Description	PIN	Description
33	VCC	34	VCC
35	BD3-	36	BD4-
37	BD3+	38	BD4+
39	GND	40	GND



Z CN3(23-30): External USB2.0 Connector

PIN	Description	PIN	Description
23	VCC	24	VCC
25	BD1-	26	BD2-
27	BD1+	28	BD2+
29	GND	30	GND



3.14 CMOS Data Clear

The 3301550A/3301550B has a Clear CMOS jumper on *JP1*.

Z JP1: Clear CMOS

Options	Settings
Normal Operation (default)	Short 1-2
Clear CMOS	Short 2-3



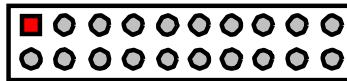
IMPORTANT: Before you turn on the power of your system, please set *JP1* to short 1-2 for normal operation.

3.15 Power and Fan Connectors

3301550A/3301550B provides one 20-pin ATX power in connector at PW1, 2-pin ATX power switch at CN7.

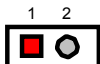
z PW1: 20-pin ATX Power In Connector

PIN	Description	PIN	Description
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWORK	18	-5V
9	+5Vsb	19	+5V
10	+12V	20	+5V



z CN7: 2-pin ATX Power Switch

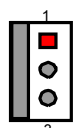
PIN	Description
1	Pull 220Ω to VCCSTBY
2	PS_ON



FAN1/FAN2 onboard 3301550A/3301550B is 3-pin fan power connector.

z FAN1/FAN2: Fan Power Connector

PIN	Description
1	GND
2	VCC 12V
3	FAN Speed In

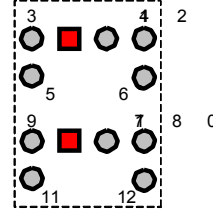


3.16 Keyboard/Mouse Connector

The 3301550A/3301550B offers one method for keyboard/mouse connections. The connections are done via *KR1* for an external PS/2 type keyboard/mouse connection.

z KR1: PS/2 6-pin Mini DIN Keyboard and Mouse Connector

PIN	Description	PIN	Description
1	Keyboard Data	7	Mouse Data
2	N/C	8	N/C
3	GND	9	GND
4	+5V	10	+5V
5	Keyboard Clock	11	Mouse Clock
6	N/C	12	N/C

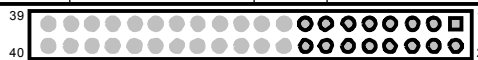


3.17 System Front Panel Connectors

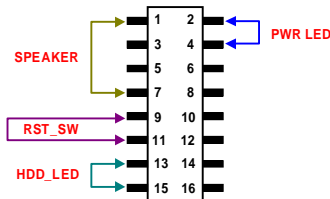
The 3301550A/3301550B has one system front panel at location *CN8(1-16)* that indicates the system front panel status.

z CN8(1-16): System Front Panel Connector

PIN	Description	PIN	Description
1	VCC	2	330Ω Pull VCC
3	GND	4	GND
5	GND	6	GND
7	Speaker	8	N/C
9	GND	10	100Ω Pull +5Vsb
11	Reset Button	12	N/C
13	330Ω Pull VCC	14	330Ω Pull +5Vsb
15	HDD LED	16	N/C



Connector CN8(1-16) Orientation



3.18 Watchdog Timer

Once the Enable cycle is active, a Refresh cycle is requested before the time-out period. This restarts counting of the WDT period. When the time counting goes over the period preset of WDT, it will assume that the program operation is abnormal. A System Reset signal will re-start when such error happens.

The following sample programs show how to Enable, Disable and Refresh the Watchdog Timer:

```
-----  
; Enter the WDT function mode, interruptible double-write  
-----  
MOV     DX, 2EH  
MOV     AL, 87H  
OUT     DX, AL  
OUT     DX, AL  
MOV     DX, 2EH  
MOV     AL, 07H  
OUT     DX, AL  
MOV     DX, 2FH  
MOV     AL, 08H  
OUT     DX, AL  
MOV     DX, 2EH  
MOV     AL, F5H           ; select CRF0  
OUT     DX, AL  
MOV     DX, 2FH  
MOV     AL, 80H  
OUT     DX, AL  
MOV     DX, 2EH  
MOV     AL, F7H  
OUT     DX, AL  
MOV     DX, 2FH  
  
MOV     AL, 00H  
OUT     DX, AL  
MOV     DX, 2EH  
MOV     AL, F6H  
OUT     DX, AL  
MOV     DX, 2FH  
MOV     AL, 00H           ; * 00H=Disabled  
OUT     DX, AL  
  
-----  
; Exit extended function mode  
-----  
MOV     DX, 2EH  
MOV     AL, AAH  
OUT     DX, AL
```

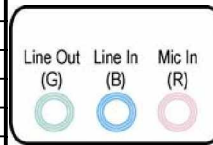
User can also use AL, 00H's defined time for reset purposes, e.g.00H for Disable, 01H = 1sec, 02H = 2sec to FFH = 255sec.

3.19 Audio Connectors

The 3301550A/3301550B has an onboard AC97 3D audio interface. The following tables list the pin assignments of the MIC In/Line Out connectors.

z CN2(17-32): Primary MIC In/Audio Out Connector

PIN	Description	PIN	Description
17	GND	25	GND
18	LINE_IN R	26	GND
19	GND	27	LINE_OUT L
20	GND	28	GND
21	GND	29	GND
22	LINE_IN L	30	GND
23	LINE_OUT R	31	GND
24	GND	32	MIC_IN 1



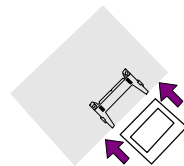
z CN8(25-32): Secondary MIC In/Audio Out Connector

PIN	Description	PIN	Description
25	Font LINE_OUT L	26	Font LINE_OUT R
27	GND	28	GND
29	MIC_IN 2	30	N/C
31	GND	32	GND



3.20 CompactFlash™ Connector

The 3301550A/3301550B also offers an optional CompactFlash™ connector which is IDE interface located at the solder side of the board. The designated CN9 connector, once soldered with an adapter, can hold CompactFlash™ cards of various sizes. Please turn off the power before inserting the CF card. Inserting a CompactFlash™ card into the adapter is not a difficult task. The socket and card are both keyed and there is only one direction for the card to be completely inserted. Refer to the diagram below for the traditional way of inserting the card.



This page is intentionally left blank.

Chapter 4

AMI BIOS Setup

The 3301550A/3301550B uses AMI BIOS for the system configuration. The AMI BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options that could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

4.1 Starting Setup

The AMI BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing immediately after switching the system on, or
2. By pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

4.2 Main Menu

BIOS SETUP UTILTY		Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit	
System Overview								Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.		
AMIBIOS										
Version	:	08.00.11								
Build Date	:	03/09/06								
ID	:	3301550	Use [+] or [-] to configure system Time.							
Processor										
Type	:	Intel(R) Celeron(R) M processor								
Speed	:	1499MHz								
Count	:	1								
System Memory								← →	Select Screen	
Size	:	248MB							↑ ↓	Select Item
								+ -	Change Field	
System Time		[00:09:44]							Tab	Select Field
System Date		[Tue 01/01/2002]							F1	General Help
								F10	Save and Exit	
								ESC	Exit	
v02.57 (C) Copyright 1985-2004, American Megatrends, Inc.										

4.3 Advanced Settings

BIOS SETUP UTILTY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Advanced Settings						Configure CPU.	
WARNING: Setting wrong values in below sections may cause system to malfunction.							
× CPU Configuration							
× IDE Configuration							
× Floppy Configuration							
× SuperIO Configuration							
× Hardware Health Configuration							
× ACPI Configuration							
× MPS Configuration							
× Smbios Configuration							
× USB Configuration							
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field F1
						F10	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Configure advanced CPU settings						When disabled, force the XD feature flag to always return 0.	
Module Version –12.00							
Manufacturer		:Intel					
Brand String		:Intel(R) Celeron(R) M processor					
Frequency		:1.49GHz					
FSB Speed		:400MHz					
Cache L1		:32 KB					
Cache L2		:1024 KB					
Execute Disable Bit		[Enabled]				← → Select Screen	
CPU TM function:		[Enabled]				↑ ↓ Select Item	
Hyper Threading Technology		[Enabled]				+ - Change Field	
						Tab Select Field	
						F1 General Help	
						F10 Save and Exit	
						ESC Exit	
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
IDE Configuration						Disabled: disables the integrated IDE Controller.	
OnBoard PCI IDE Controller		[Both] OnBoard				PRIMARY: enables only the Primary IDE Controller.	
PCI IDE Operate Mode		[Legacy Mode]				SECONDARY: enables only the Secondary IDE Controller.	
X Primary IDE Master		: [Not Detected] X				Both: enables both IDE Controllers.	
Primary IDE Slave		: [ATAPI CDROM]					
X Secondary IDE Master		: [Not Detected] X					
Secondary IDE Slave		: [Not Detected]					
Hard Disk Write Protect		[Disabled]				← → Select Screen	
IDE Detect Time Out (Sec)		[35]				↑ ↓ Select Item	
ATA(PI) 80Pin Cable Detection		[Host & Device]				+ - Change Field	
						Tab Select Field	
						F1 General Help	
						F10 Save and Exit	
						ESC Exit	
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Floppy Configuration						Select the type of floppy drive connected to the system.	
Floppy A				[1.44 MB 3.5"]			
Floppy B				[Disabled]			
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Configure Win627 Super IO Chipset						Allows BIOS to Enable or Disable Floppy Controller.	
OnBoard Floppy Controller				[Enabled]			
Floppy Drive Swap				[Disabled]			
Serial Port1 Address				[3F8/IRQ4]			
Serial Port2 Address				[2F8/IRQ3]			
Serial Port2 Mode				[Normal]			
OnBoard CIR Port				[Disabled]			
Parallel Port Address				[378]			
Parallel Port Mode				[ECP]			
ECP Mode DMA Channel				[DMA3]		← →	Select Screen
Parallel Port IRQ				[IRQ7]		↑ ↓	Select Item
OnBoard Game Port				[Disabled]		+ -	Change Field
OnBoard MIDI Port				[Disabled]		Tab	Select Field
Serial Port3 Address				[3E8]		F1	General Help
Serial Port3 IRQ				[10]		F10	Save and Exit
Serial Port4 Address				[2E8]		ESC	Exit
Serial Port4 IRQ				[11]			
Serial Port5 Address				[2F0]			
Serial Port5 IRQ				[11]			
Serial Port6 Address				[2E0]			
Serial Port6 IRQ				[11]			
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Hardware Health Configuration						Enables	Hardware
						Health	Monitoring
						Device.	
H/W Health Function			[Enabled]				
Chassis Intrusion			[Disabled]				
Hardware Health Event Monitoring							
CPU Temperature			:21°C/69°F				
System Temperature			:18°C/64°F				
System Fan			:5273RPM			← →	Select Screen
VcoreA			:1.258 V			↑ ↓	Select Item
+3.3Vin			:3.419 V			+ -	Change Field
+5Vin			:5.107 V			Tab	Select Field
+12Vin			:12.160 V			F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
ACPI Settings						Enable / Disable	ACPI
						support for	Operating
						System.	
ACPI Aware O/S			[Yes]				
× General ACPI Configuration						ENABLE: If OS	
× Advanced ACPI Configuration						supports ACPI.	
× Chipset ACPI Configuration						DISABLE: If OS does	
						not support ACPI.	
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
General ACPI Configuration						Select the ACPI state used for System Suspend.	
Suspend mode				[Auto]			
Repost Video on S3 Resume				[No]			
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Advanced ACPI Configuration						Enable RSDP pointers to 64-bit Fixed System Description Tables.	
ACPI 2.0 Features				[No]			
ACPI APIC support				[Enabled]			
AMI OEMB table				[Enabled]			
Headless mode				[Disabled]			
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
APIC ACPI SCI IRQ				[Disabled]			
USB Device Wakeup From S3				[Disabled]			
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field F1
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
MPS Configuration						Select MPS Revision.	
MPS Revision		[1.4]					
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field F1
							General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Smbios Configuration						SMBIOS SMI Wrapper support for PnP Func 50h-54h	
Smbios Smi Support		[Enabled]					
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
USB Configuration						Enables USB host controllers.	
Module Version -2.24.0-10.4							
USB Devices Enable		:					
None							
USB Function		[4 USB Ports]					
Legacy USB Support		[Enabled]					
USB 2.0 Controller		[Enabled] USB					
2.0 Controller Mode		[HiSpeed]					
BIOS EHCI Hand-Off		[Enabled]					
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field F1
							General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

4.4 Advanced PCI/PnP Settings

BIOS SETUP UTILTY			
Main	Advanced	PCIPnP	Boot Security Chipset Power Exit
Advanced PCI/PnP Settings			Clear NVRAM during System Boot.
WARNING: Setting wrong values in below sections may cause system to malfunction.			
Clear NVRAM		[No]	
Plug & Play O/S		[No]	
PCI Latency Timer		[64]	
Allocate IRQ to PCI VGA		[Yes]	
Palette Snooping		[Disabled]	
PCI IDE BusMaster		[Enabled]	
OffBoard PCI/ISA IDE Card		[Auto]	
IRQ3		[Available]	← → Select Screen
IRQ4		[Available]	↑ ↓ Select Item
IRQ5		[Available]	+ - Change Field
IRQ7		[Available]	Tab Select Field
IRQ9		[Available]	F1 General Help
IRQ10		[Available]	F10 Save and Exit
IRQ11		[Available]	ESC Exit
IRQ14		[Available]	
IRQ15		[Available]	
DMA Channel 0		[Available]	
DMA Channel 1		[Available]	
DMA Channel 3		[Available]	
DMA Channel 5		[Available]	
DMA Channel 6		[Available]	
DMA Channel 7		[Available]	
Reserved Memory Size		[Disabled]	
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.			

4.5 Boot Settings

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Boot Settings						Configure Settings during System Boot.	
X Boot Settings Configuration							
X Boot Device Priority							
X Removable Drives							
X CD/DVD Drives							
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field F1
							General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Boot Settings Configuration						Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.	
Quick Boot						[Enabled]	
Quiet Boot						[Disabled]	
AddOn ROM Display Mode						[Force BIOS]	
Bootup Num-Lock						[On]	
PS/2 Mouse Support						[Auto]	
Wait For 'F1' If Error						[Enabled]	
Hit 'DEL' Message Display						[Enabled]	
Interrupt 19 Capture						[Disabled]	
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Boot Device Priority						Specifies the boot sequence from the available devices.	
1st Boot Device		[1st FLOPPY DRIVE]				A device enclosed in parenthesis has been disabled in the corresponding type menu.	
2nd Boot Device		[CD/DVD:PS-ASUS CRW]					
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Removable Drives						Specifies the boot sequence from the available devices.	
1st Drive		[1st FLOPPY DRIVE]					
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
CD/DVD Drives						Specifies the boot sequence from the available devices.	
1st Device		[CD/DVD:PS-ASUS CRW]					
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

4.6 Security Settings

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Security Settings						Install or Change the password.	
Supervisor Password			:Not Installed				
User Password			:Not Installed				
Change Supervisor Password							
Change User Password							
Boot Sector Virus Protection			[Disabled]				
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

4.7 Advanced Chipset Settings

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Advanced Chipset Settings						Options for NB	
WARNING: Setting wrong values in below sections may cause system to malfunction.							
<ul style="list-style-type: none"> × NorthBridge Configuration × SouthBridge Configuration 							
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
						Options	
DRAM Frequency				[Auto]			
Configure DRAM Timing by SPD				[Enabled]		200Mhz	
						266Mhz	
Memory Hole				[Disabled]		333Mhz	
Init. Graphic Adapter Priority				[Internal VGA]		Auto	
Internal Graphics Mode Select				[Enabled, 8MB]			
Graphics Aperture Size				[64MB]		← → Select Screen	
						↑ ↓ Select Item	
Boot Display Device				[CRT+LFP]		+ - Change Field	
Flat Panel Type				[800x600LVDS]		Tab Select Field	
TV Standard				[Auto]		F1 General Help	
						F10 Save and Exit	
						ESC Exit	
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
OnBoard AC'97 Audio			[Auto]			Enable/Disable OnBoard AC'97 Audio.	
Restore on AC Power Loss			[Last State]				
						← →	Select Screen
						↑ ↓	Select Item
						+ -	Change Field
						Tab	Select Field
						F1	General Help
						F10	Save and Exit
						ESC	Exit

v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.

4.8 APM Configuration

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
APM Configuration						Disable/Enable RTC to generate a wake event.	
Power Management/APM			[Enabled]				
Video Power Down Mode			[Suspend]				
Hard Disk Power Down Mode			[Suspend]				
Standby Time Out			[Disabled]				
Suspend Time Out			[Disabled]				
Throttle Slow Clock Ratio			[50%]				
Keyboard & PS/2 Mouse			[Monitor]				
FDC/LPT/COM Ports			[Monitor]				
Primary master IDE			[Monitor]	← →	Select Screen		
Primary slave IDE			[Monitor]	↑ ↓	Select Item		
Secondary master IDE			[Monitor]	+ -	Change Field		
Secondary slave IDE			[Monitor]	Tab	Select Field		
System Thermal			[Disabled]	F1	General Help		
				F10	Save and Exit		
				ESC	Exit		
Power Button Mode			[On/Off]				
Resume On Ring			[Disabled]				
Resume On LAN			[Disabled]				
Resume On PME#			[Disabled]				
Resume On RTC Alarm			[Disabled]				
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

4.9 Exit Options

BIOS SETUP UTILTIY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
EXIT Options							Exit system setup after saving the changes.
Save Changes and Exit							F10 key can be used for this operation.
Discard Changes and Exit							
Discard Changes							
Load Optimal Defaults							
Load Failsafe Defaults							
							← → Select Screen
							↑ ↓ Select Item
							+ - Change Field
							Tab Select Field
							F1 General Help
							F10 Save and Exit
							ESC Exit
v02.57 (C)Copyright 1985-2004, American Megatrends, Inc.							

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.



Address: Global American, Inc.
17 Hampshire Drive
Hudson, NH 03051

Telephone: Toll Free (U.S. Only) 800-833-8999
(603)886-3900

FAX: (603)886-4545

Website: <http://www.globalamericaninc.com>

E-Mail: salesinfo@globalamericaninc.com
