Ruggcore™ REC3424

User Manual

Ruggdized Embedded Controller

Intel® Atom™ D510 Processor

(1st Edition 2/24/2012)

All information is subject to change without notice.

Approved by	Checked by	Prepared by

RECORD OF REVISION

Version and Date	Page	Old Description	New Description	Remark
Feb.24 2012	all		Initial Release	

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Packing List

Before installation, please ensure the following items have been shipped:
- 1 x REC3424 Embedded Controller
- 1 x CD-ROM for manual (in PDF format) and drivers

If any of these items should be missing or damaged, please contact your distributor or sales representative immediately.

Ordering Information

Model Number Description

REC3424-A01
Intel Atom D510 1.66GHz processor,DDR2 1GB RAM.Fanless,DC9~36V input,GbE*2.
VGA*1,USB*6,COM*4,CF slot.HDD Bay

Optional Accessories

- 2.5" 250GB SATA Hard Disk Drive
- 8GB CF Memory Card
- ADAPTER,12V,7.0A,84W.
- Power Cable USA Type
- Power Cable Europe Type
- Power Cable Australia Type
- Power Cable Europe Type

Safety & Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a firm surface during installation. Dropping it or letting it fall could cause damage.
7. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
8. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
9. All cautions and warnings on the equipment should be noted.
10. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
11. Never pour any liquid into an opening. This could cause fire or electrical shock.
12. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
13. If any of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.
14. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20°C (-4°F) OR ABOVE 70°C (158°F). IT MAY DAMAGE THE EQUIPMENT.

FCC Safety

Warning!

This device complies with Part 15 FCC Rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received including interference that may cause undesired operation.

TABLE OF CONTENT

1.0 INTRODUCTION

1.1 About Ruggcore™ Embedded Controller

Due to the growing popularity from the IPC market, the newest Ruggcore™ series REC3424 Embedded Controller has been launched. It is an advanced version because it utilizes an Intel® Atom D510 processor without a fan.

The REC3424 Embedded Controller system's design concept not only focuses on the fast expanding Machine Automation market but also the Industrial Automation industry. The REC3424 provide 1 mini card slot(internal) for expansion.

REC3424 is a new series of embedded PC system to be the optimal industrial solution. The survive from the harsh and grim working environment, the rugged and anti-vibration structure support REC3424 to be the best choice. In addition, the fanless design controller takes low power consumption but presents operational efficiency from -15 to 55 degree Celsius.

A solid sealed aluminum case provides vibration and dust resistance while also providing a passive cooling solution. The REC3424 provides system integrators with a turn-key solution and versatile application development path to fulfill the diversified market demand.

The REC3424 can be used as a standalone system, and wall-mounted. The system accepts a wide range of power supplies (DC power in). The rugged aluminum case not only provides great protection from EMI, shock/vibration, cold and heat, but also passive cooling for quiet fanless operation.

The REC3424 Embedded Computer supports Compact Flash card and SATA II HDD for storage options and it can provide the diversified application field. Therefore REC3424's expandable function, compact size combined with fanless design and highly efficient heat conduction mechanism can fulfill any rugged technical application in industrial automation, factory control, and test instrumentation.

1.2 FEATURES

- Compact Size and Rugged Fanless Platform.
- Onboard Intel Atom D510 Processor.
- Two Gigabit Ethernet.
- Internal 2.5" SATA HDD Bay
- USB 2.0 port x6, Com port x 4
- Wide Range DC Input(9V~36V)
- Industrial Grade Rugged Chassis

1.3 SPECIFICATIONS:

System

Processor	Intel® D510 Processors, 1.66GHz
Chip Set	Intel® ICH8M
System Memory	200-pin DDR2 SODIMM x1, Max. 2GB (DDRII 667)
Ethernet	Gigabit, Ethernet x 2(Intel 82567V and 82583V)
Storage	*CF Slot* *SATAII HDD Bay*
Audio	MIC-In,Line-out
I/O Interface-Front	RJ45 x2, USB x2, COM (RS232)x1, VGAx1, Power ON Switch, LED x2
I/O Interface-Rear	Audio Phone Jack (Line-out, MIC-in), USBx4,COMx3 (RS232 x2, RS232/422/485 x1), DC-In
BIOS	AMI Plug & Play BIOS
Watchdog Timer	*Generates a time-out system reset*
Expansion Interface	*Mini Card slot x1 (internal)*
Wake On LAN	*YES*
Power Requirement	*+9 V DC ~ +36V DC wide range DC input*
Power Consumption	*36W*

Mechanical

Construction	*Rugged Aluminum Alloy chassis*
Mounting	*Wallmount, Desktop*
Dimension	196(W) x 64(H) x 150 (D) mm*)*
Net Weight	*2.3Kg*

Environment

Operating Temperature	*-15°C ~ 50°C (5°F ~ 131°F) – HDD*
Storage Temperature	*-20°C ~ 70°C (-4°F ~-158°F)*
Operating Humidity	*5~90% @ 40°C, non-condensing*
Vibration:	*1g rms / 5~500Hz / random operation*
Shock:	*50g peak acceleration (11msec. duration)(CFD)* *20g peak acceleration (11msec. duration) (HDD)*
Certification	*CE/FCC*

2.0 HARDWARE INSTALLATION

2.1 General System Information

Front View

(2.5" HDD Bay)				
USB x2	RJ45 x2	COM1	VGA	LED x2 Power SW

Rear View

DC Input	COM2	COM3	COM4	USB x4 (CF card slot)	Mic in Line-out

CF CARD COVER

MEMORY COVER

HDD COVER

ø5
ø10

230.1
196
214.1
69.38

50
100
150

1:USB
2:LAN
3:LAN
4:COM1
5:VGA

6:PWR_ON SWITCH
7:HDD LED LAMP
8:PWR LED LAMP

09:DC_IN
10:COM4
11:COM3
12:COM2
13:USB
14:USB
15:MIC
16:LINE-OUT
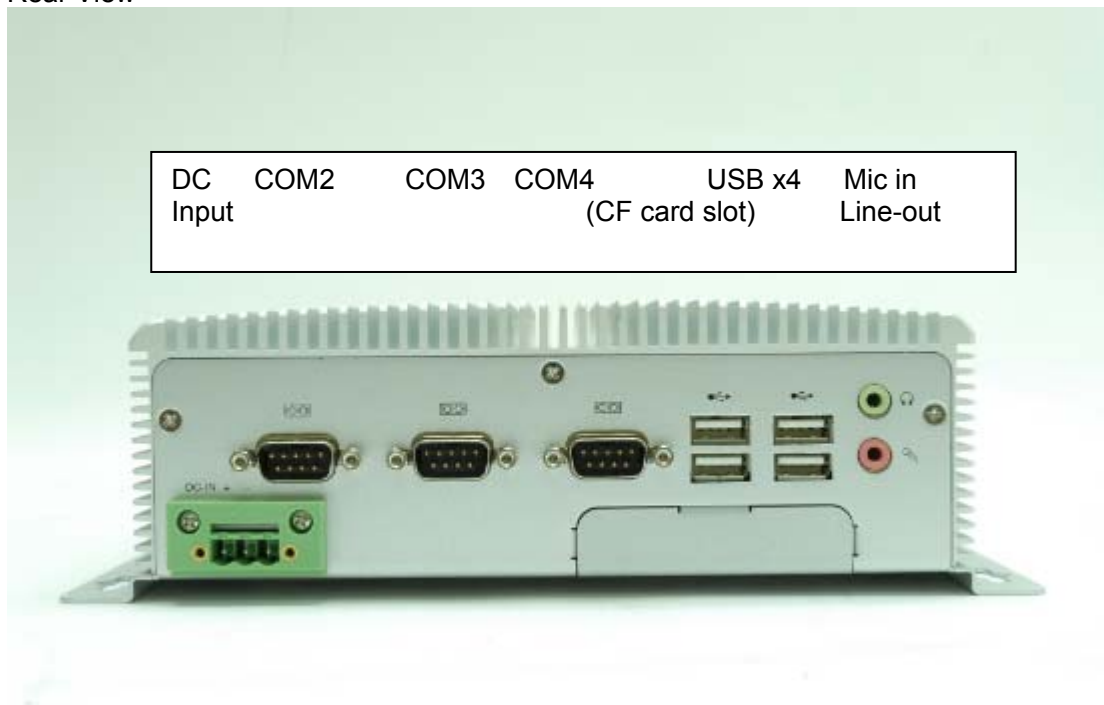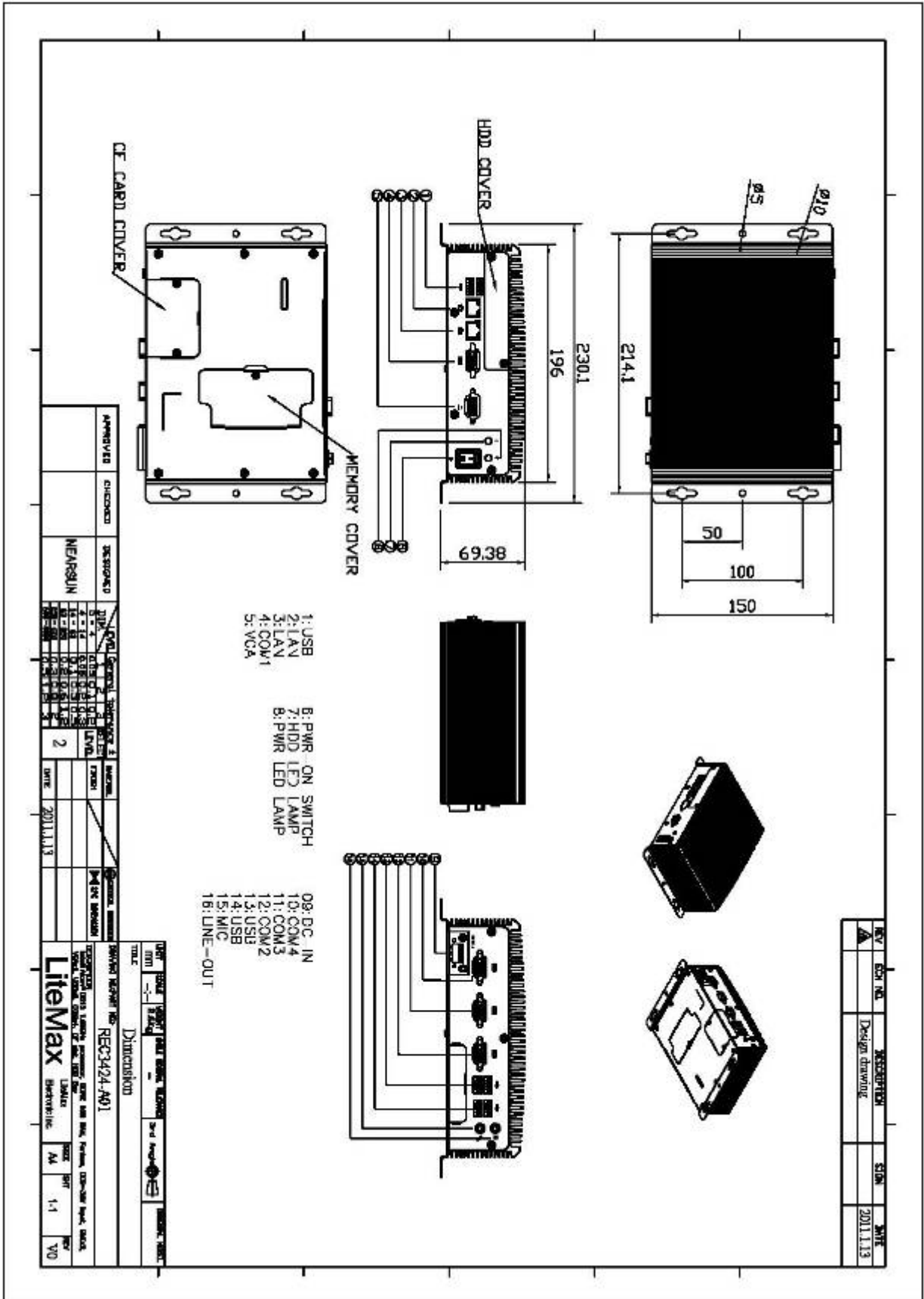
2.2 Installation Hard Disk Drive

Step1: Please make sure the power is off before install HDD.

Step2: Please find HDD carrier and four rubber dampers, and put the dampers on the corner of carrier.
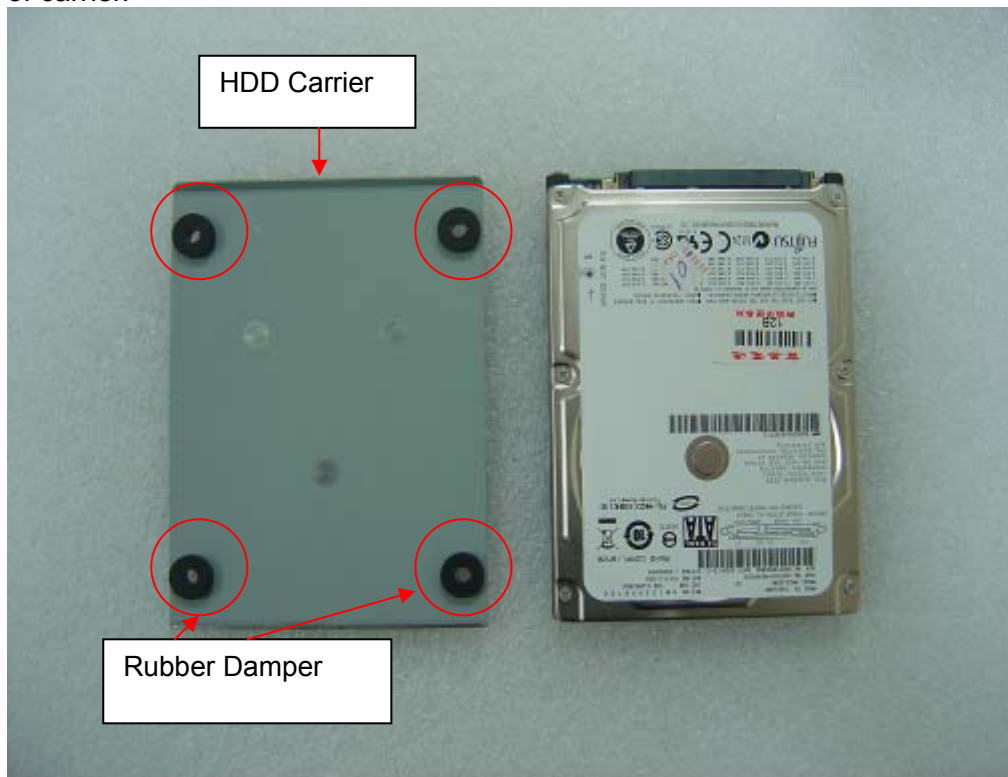
Step3: Put the HDD on the top of carrier and align the HDD screw holes and carrier screw holes. Up side down the whole set of HDD and fasten the four screws on the bottom side.

Step4: Unfasten the two screws of HDD cover on the front side of REC3424.

Step5: Insert the HDD set to the HDD bay, the connectors between HDD and HDD bay will be connected when slide in the HDD at the end.

Step6: Fasten the two screws of HDD cover.

CF Card Installation

Step1: Please make sure the power is off before install CF card.

Step2: Unfasten the two screws of CF cover on the bottom side of REC3424.

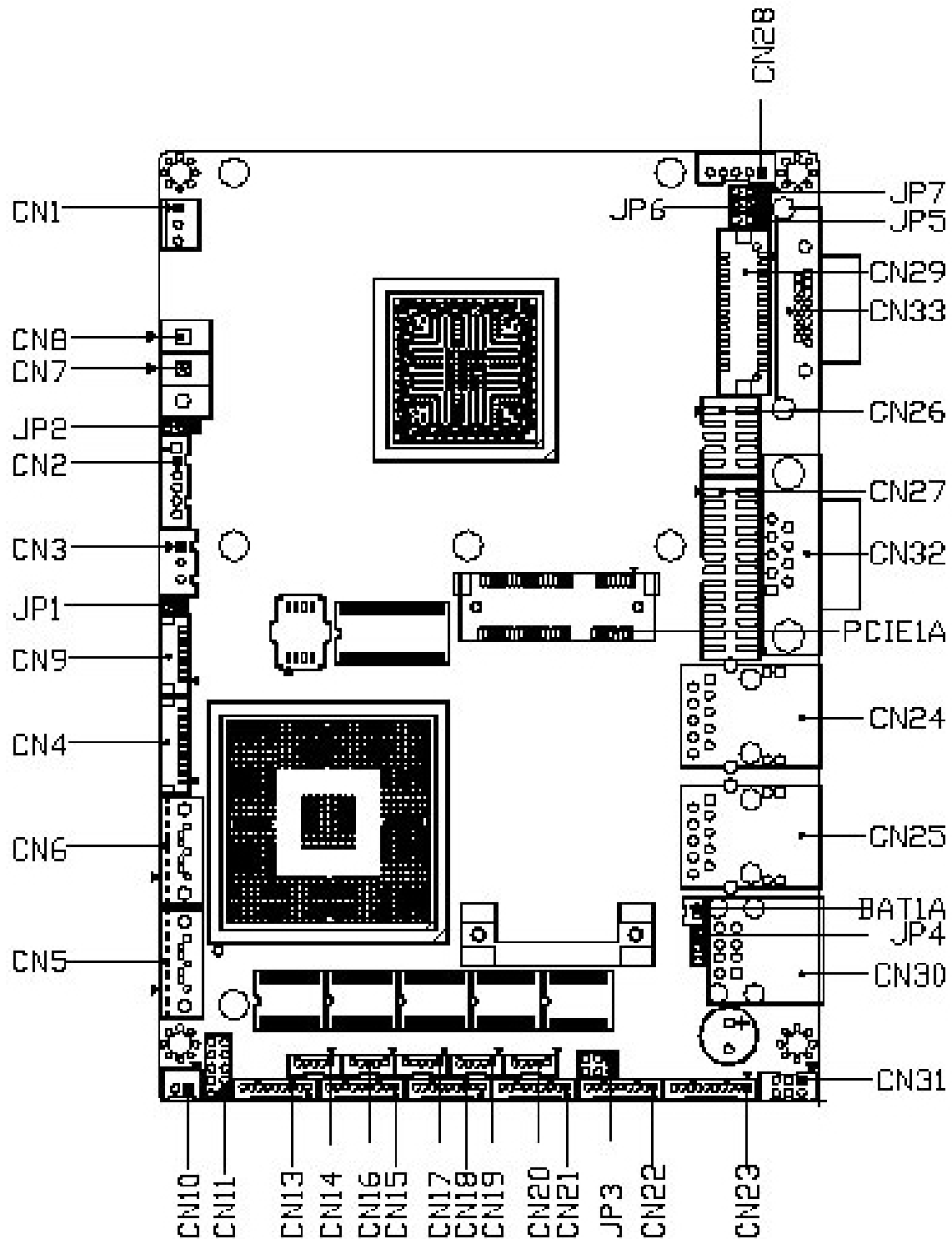Step3: Insert the CF card to CF slot.
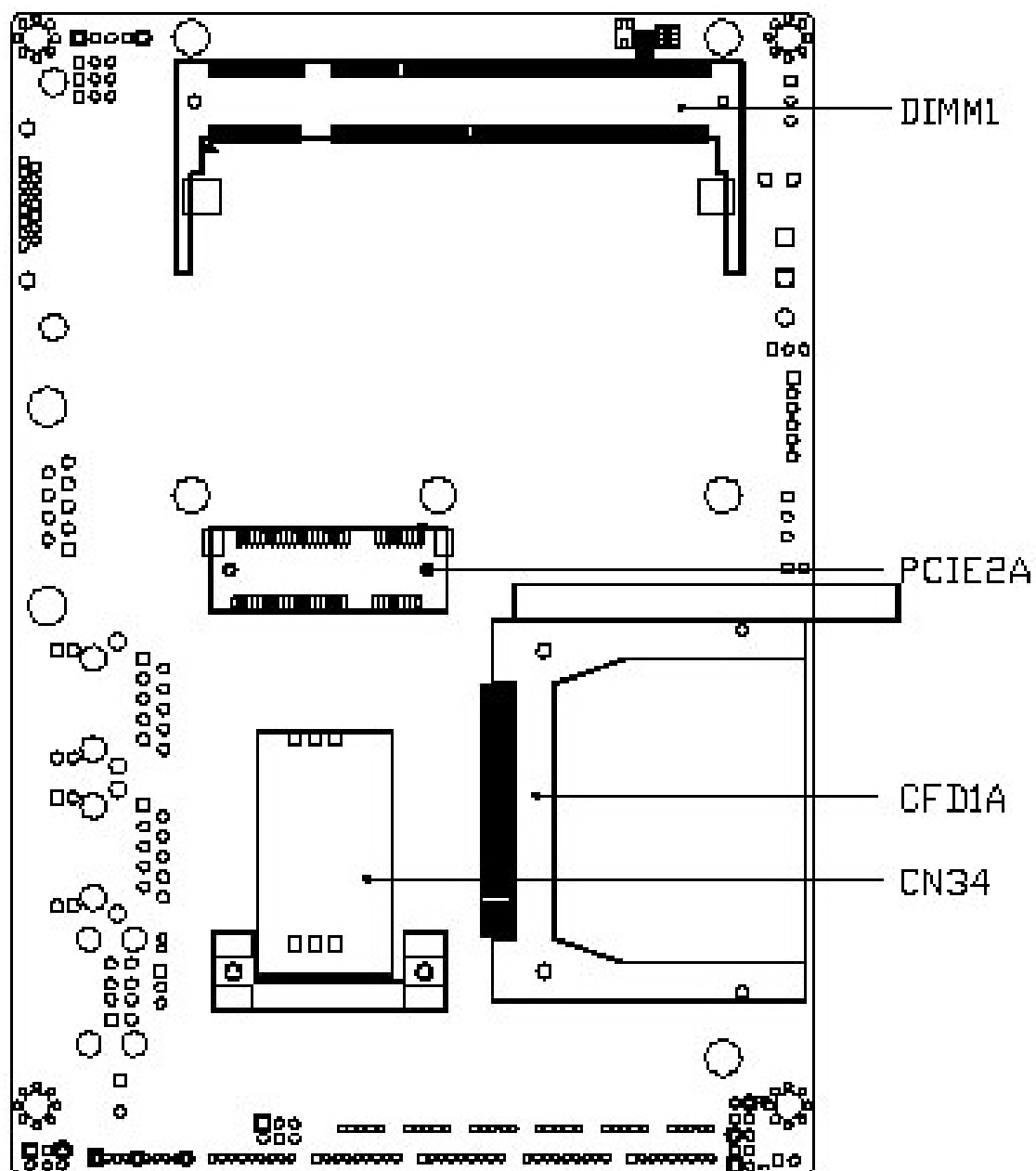
Step4: Fasten the CF cover screws.

2.3 Main Board Location of Connectors and Jumpers

Component Side

Solder Side

DIMM1

PCIE2A

CFD1A

CN34

2.3.1 List of Jumpers

The board has a number of Jumpers that allow you to configure your system to suit your application.

Label	Function
JP1	Touch Screen 4/5/8-wire Mode Selection
JP2	AT/ATX Power Mode Selection
JP3	COM2 RI/+5/+12V Selection
JP4	Clear CMOS
JP5	LVDS Inverter/ Backlight Bias/PWM Mode Selection
JP6	LVDS Operating Voltage Selection
JP7	LVDS Inverter/ Backlight Voltage Selection

2.3.2 List of Connectors

The board has a number of Jumpers that allow you to configure your system to suit your application.
The table below shows the function of the board's connectors:

Label	Function
CN1	CPU FAN
CN2	+5VSB Output w/ SMBus
CN3	External +5VSB Input
CN4	LPC Expansion I/F
CN5	SATA Port #1
CN6	SATA Port #2
CN7	External 5V Input (depend on power input configuration)
CN8	External 12V Input (depend on power input configuration)
CN9	Touch Screen Connector
CN10	+5V Output for SATA HDD using
CN11	Front Panel
CN13	COM Port #6
CN14	USB Port #7
CN15	COM Port #5
CN16	USB Port #6
CN17	USB Port #5
CN18	COM Port #4
CN19	USB Port #4
CN20	USB Port #3

CN21	COM Port #3
CN22	COM Port #2
CN23	Audio Line In/Out and MIC Connector
CN24	RJ-45 Ethernet #2
CN25	RJ-45 Ethernet #1
CN26	Digital I/O
CN27	Parallel Port
CN28	LVDS Inverter/ Backlight Connector
CN29	18-bit LVDS Output
CN30	USB Port #1 and #2
CN31	PS/2 Keyboard & Mouse
CN32	COM Port #1
CN33	Analog CRT Display
CN34	SIM Card Socket
CFD1	Compact Flash Disk
PCIE1	Mini-Card Slot #1
PCIE2	Mini-Card Slot #2
DIMM1	DDR2 SODIMM Slot

2.3.3 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip.
To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.

Open   Closed   Closed 2-3
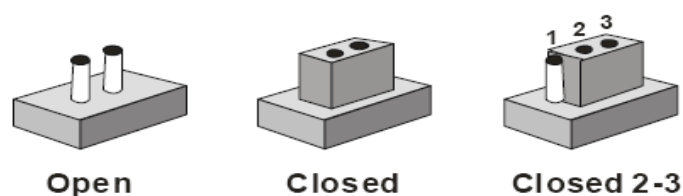
A pair of needle-nose pliers may be helpful when working with jumpers.
If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.
Generally, you simply need a standard cable to make most connections.

Touch Screen 4/5/8-wire Mode Selection (JP1)

JP1	Function
1-2 Closed	4/8-wire (Default)
1-2 Open	5-wire

AT/ATX Power Mode Selection (JP2)

JP2	Function
1-2	AT (Default)
2-3	ATX

COM2 RI/+5V/+12V Selection (JP3)

JP3	Function
1-2	+12V
3-4	+5V
5-6	RI (Default)

Clear CMOS (JP4)

JP4	Function
1-2	Normal (Default)
2-3	Clear CMOS

LVDS Inverter/ Backlight Bias/PWM Mode Selection (JP5)

JP5	Function
1-2	Bias (Default)
2-3	PWM Control

LVDS Operating Voltage Selection (JP6)

JP6	Function
1-2	+5V
2-3	+3.3V (Default)

LVDS Inverter/ Backlight Voltage Selection (JP7)

JP7	Function
1-2	+12V
2-3	+5V (Default)

CPU Fan Connector (CN1)

Pin	Signal
1	Ground
2	+5 Volt. (Optional) / +12 Volt.
3	FAN Sense

+5VSB Output w/ SMBUS (CN2)

Pin	Signal
1	SMBDATA
2	Ground
3	SMBCLK
4	Ground
5	PSON#
6	+5 Volt. Standby

External +5VSB Input (CN3)

Pin	Signal
1	PSON#
2	Ground
3	+5 Volt. Standby

LPC Expansion I/F (CN4)

Pin	Signal
1	LAD0
2	LAD1
3	LAD2
4	LAD3
5	+3.3 Volt.
6	LFRAME#
7	LRESET#
8	Ground
9	LPC_CLK
10	LDRQ#0
11	LDRQ#1
12	SERIRQ

SATA Port #1 (CN5)

Pin	Signal
1	Ground
2	TX0+
3	TX0-
4	Ground
5	RX0-
6	RX0+
7	Ground

SATA Port #2 (CN6)

Pin	Signal
1	Ground
2	TX1+
3	TX1-
4	Ground
5	RX1-
6	RX1+
7	Ground

External 5V Input (CN7)

DC Terminal

Pin	Signal
1	Ground
2	+5 Volt.

External 12V Input (CN8)

DC Terminal

Pin	Signal
1	+12 Volt.
2	Ground

Touch Screen Connector (CN9)

Pin	4-wire	5-wire	8-wire
1	Ground	Ground	Ground
2	Top Excite	Top	UL(Y)
3	Bottom Excite	Bottom	UR(H)
4	Left Excite	Left	LL(L)
5	Right Excite	Right	LR(X)
6	Top Sense	N/C	SENSE
7	Bottom Sense	N/C	N/C
8	Left Sense	N/C	N/C
9	Right Sense	N/C	N/C

+5V Output For SATA HDD (CN10)

Pin	Signal
1	+5 Volt.
2	Ground

Front Panel (CN11)

Pin	Signal
(-) 1-2 (+)	ATX Power-on Button
(-) 3-4 (+)	HDD Active LED
(-) 5-6 (+)	External Speaker
(-) 7-8 (+)	Power LED
(-) 9-10 (+)	System Reset Button

COM Port #6 (CN13)

Pin	Signal	Pin	Signal
1	DCDF	2	DSRF
3	RXF	4	RTSF
5	TXF	6	CTSF
7	DTRF	8	RIF
9	Ground	10	N/C

USB Port #7 (CN14)

Pin	Signal
1	+5 Volt. Standby
2	Data6-
3	Data6+
4	Ground
5	Ground

COM Port #5 (CN15)

Pin	Signal	Pin	Signal
1	DCDE	2	DSRE
3	RXE	4	RTSE
5	TXE	6	CTSE
7	DTRE	8	RIE
9	Ground	10	N/C

USB Port #6 (CN16)

Pin	Signal
1	+5 Volt. Standby
2	Data5-
3	Data5+
4	Ground
5	Ground

USB Port #5 (CN17)

Pin	Signal
1	+5 Volt. Standby
2	Data4-
3	Data4+
4	Ground
5	Ground

COM Port #4 (CN18)

Pin	Signal	Pin	Signal
1	DCDD	2	DSRD
3	RXD	4	RTSD
5	TXD	6	CTSD
7	DTRD	8	RID
9	Ground	10	N/C

USB Port #4 (CN19)

Pin	Signal
1	+5 Volt. Standby
2	Data3-
3	Data3+
4	Ground
5	Ground

USB Port #3 (CN20)

Pin	Signal
1	+5 Volt. Standby
2	Data2-
3	Data2+
4	Ground
5	Ground

COM Port #3 (CN21)

Pin	Signal	Pin	Signal
1	DCDC	2	DSRC
3	RXC	4	RTSC
5	TXC	6	CTSC
7	DTRC	8	RIC
9	Ground	10	N/C

COM Port #2 (CN22)

RS-232 Mode

Pin	Signal	Pin	Signal
1	DCDB	2	DSRB
3	RXB	4	RTSB
5	TXB	6	CTSB
7	DTRB	8	RIB / +5 Volt. / (+12 Volt.)
9	Ground	10	N/C

RS-422 Mode

Pin	Signal	Pin	Signal
1	TXD-	2	N/C
3	RXD+	4	N/C
5	TXD+	6	N/C
7	RXD-	8	N/C / +5 Volt. / (+12 Volt.)
9	Ground	10	N/C

RS-485 Mode

Pin	Signal	Pin	Signal
1	TXD-	2	N/C
3	N/C	4	N/C
5	TXD+	6	N/C
7	N/C	8	N/C / +5 Volt. / (+12 Volt.)
9	Ground	10	N/C

Audio Line In/Out and MIC Connector (CN23)

Pin	Signal
1	MIC_L
2	MIC_R
3	Ground
4	Line IN_L
5	Line IN_R
6	Ground
7	Line OUT_L
8	Ground
9	Line OUT_R
10	+5 Volt.

RJ-45 Ethernet #2 (CN24)

Pin	Signal	Pin	Signal
R1	MDIO0+	R2	MDIO0-
R3	MDIO1+	R4	MDIO1-
R5	TCD0	R6	TCD1
R7	MDIO2+	R8	MDIO2-
R9	MDIO3+	R10	MDIO3-
L1	SPD100_LED	L2	SPD1K_LED
L3	ACT_LED	L4	+3.3 Volt.

RJ-45 Ethernet #1 (CN25)

Pin	Signal	Pin	Signal
R1	GPHY_MDIO0+	R2	GPHY_MDIO0-
R3	GPHY_MDIO1+	R4	GPHY_MDIO1-
R5	TCD0	R6	TCD1
R7	GPHY_MDIO2+	R8	GPHY_MDIO2-
R9	GPHY_MDIO3+	R10	GPHY_MDIO3-
L1	SPD100_LED	L2	SPD1K_LED
L3	ACT_LED	L4	+3.3 Volt.

Digital I/O Connector (CN26)

Note: The max. rating of Pin 1 ~ Pin 8 is 5V@8mA
The max. rating of Pin 9 is 5V@0.5A

This connector offers 4-pair of digital I/O functions .

BIOS using the I2C Bus to read/write internal DIO registers and the Serial Bus address is 0x6E.

The pin definitions are illustrated below:

Pin	Signal	Pin	Signal
1	Port 1	2	Port 2
3	Port 3	4	Port 4
5	Port 5	6	Port 6
7	Port 7	8	Port 8
9	+3.3 Volt.	10	Ground

BIOS Setting (I2C address)	Connector Definition	Address(Register) Output	Address(Register) Input	F75111 GPIO Setting
Port 1 @6Eh	Pin 1	21h/Bit 0	22h/Bit 0	U67 Pin 6 (GPIO 20)
Port 2 @6Eh	Pin 2	21h/Bit 1	22h/Bit 1	U67 Pin 7 (GPIO 21)
Port 3 @6Eh	Pin 3	21h/Bit 2	22h/Bit 2	U67 Pin 8 (GPIO 22)
Port 4 @6Eh	Pin 4	21h/Bit 3	22h/Bit 3	U67 Pin 24(GPIO 23)
Port 5 @6Eh	Pin 5	21h/Bit 4	22h/Bit 4	U67 Pin 23(GPIO 24)
Port 6 @6Eh	Pin 6	21h/Bit 5	22h/Bit 5	U67 Pin 22(GPIO 25)
Port 7 @6Eh	Pin 7	21h/Bit 6	22h/Bit 6	U67 Pin 21(GPIO 26)
Port 8 @6Eh	Pin 8	21h/Bit 7	22h/Bit 7	U67 Pin 20(GPIO 27)

Parallel Port (CN27)

Pin	Signal	Pin	Signal
1	STB	2	AFD#
3	D0	4	ERROR#
5	D1	6	PINIT#
7	D2	8	SLIN#
9	D3	10	Ground
11	D4	12	Ground
13	D5	14	Ground
15	D6	16	Ground
17	D7	18	Ground
19	ACK#	20	Ground
21	BUSY	22	Ground
23	PE	24	Ground
25	SLCT	26	N/C

LVDS Inverter/ Backlight Connector (CN28)

Pin	Signal
1	+5 Volt. / +12 Volt.
2	Brightness Control
3	Ground
4	Ground
5	Backlight Enable (Controlled by CH7308C)

18-bit LVDS Output (CN29)

Pin	Signal	Pin	Signal
1	Back-Light Enable	2	Back-Light Control
3	LCD Volt.	4	Ground
5	LA_CLK#	6	LA_CLK
7	LCD Volt.	8	Ground
9	LA_DATA#_0	10	LA_DATA_0
11	LA_DATA#_1	12	LA_DATA_1
13	LA_DATA#_2	14	LA_DATA_2
15	N/C	16	N/C
17	N/C	18	N/C
19	N/C	20	N/C
21	N/C	22	N/C
23	N/C	24	N/C
25	N/C	26	N/C
27	LCD Volt.	28	Ground
29	N/C	30	N/C

USB Port 1 & 2 (CN30)

Pin	Signal	Pin	Signal
1	+5 Volt. Standby	5	+5 Volt. Standby
2	Data0-	6	Data1-
3	Data0+	7	Data1+
4	Ground	8	Ground

PS/2 Keyboard & Mouse (CN31)

Pin	Signal	Pin	Signal
1	Keyboard Data	2	Keyboard Clock
3	Ground	4	+5 Volt.
5	Mouse Data	6	Mouse Clock

COM Port #1 (CN32)

Pin	Signal	Pin	Signal
1	DCDA	2	RXA
3	TXA	4	DTRA
5	Ground	6	DSRA
7	RTSA	8	CTSA
9	RIA		

CRT Display Connector (CN33)

Pin	Signal	Pin	Signal
1	RED	2	GREEN
3	BLUE	4	N/C
5	GREEN	6	Ground
7	Ground	8	Ground
9	+5 Volt.	10	CRT_PLUG#
11	N/C	12	DDCDATA
13	HSYNC	14	VSYNC
15	DDCCLK		

SIM Card Socket (CN34)

Pin	Signal	Pin	Signal
1	UIM_PWR	2	UIM_RST
3	UIM_CLK	4	Ground
5	UIM_VPP	6	UIM_DATA

CompactFlash Disk (CFD1)

Pin	Signal	Pin	Signal
1	Ground	26	Ground
2	PDD3	27	PDD11
3	PDD4	28	PDD12
4	PDD5	29	PDD13
5	PDD6	30	PDD14
6	PDD7	31	PDD15
7	PDCS#1	32	PDCS#3
8	Ground	33	Ground
9	Ground	34	PDIOR#
10	Ground	35	PDIOW#
11	Ground	36	+3.3 Volt.
12	Ground	37	INT_IRQ14
13	+3.3 Volt.	38	+3.3 Volt.
14	Ground	39	CSEL#
15	Ground	40	N/C
16	Ground	41	IDERST#
17	Ground	42	PIORDY
18	PDA2	43	N/C
19	PDA1	44	+3.3 Volt.
20	PDA0	45	DASP#
21	PDD0	46	PDIAG#
22	PDD1	47	PDD8
23	PDD2	48	PDD9
24	N/C	49	PDD10
25	Ground	50	Ground

Mini-Card Slot #1 (PCIE1)

Pin	Signal	Pin	Signal
1	PCIE_WAKE#	2	+3.3 Volt. Standby
3	N/C	4	Ground
5	N/C	6	+1.5 Volt.
7	CLKREQ#	8	UIM_PWR
9	Ground	10	UIM_DATA
11	MCARD_CLK1#	12	UIM_CLK
13	MCARD_CLK1	14	UIM_RESET
15	Ground	16	UIM_VPP
17	N/C	18	Ground
19	N/C	20	W_DISABLE#1
21	Ground	22	PCIE_RST#
23	PCIE_RXN1	24	+3.3 Volt. Standby
25	PCIE_RXP1	26	Ground
27	Ground	28	+1.5 Volt.
29	Ground	30	SMBCLK
31	PCIE_TXN1	32	SMBDATA
33	PCIE_TXP1	34	Ground
35	Ground	36	USB_Data8-
37	Ground	38	USB_Data8+
39	+3.3 Volt. Standby	40	Ground
41	+3.3 Volt. Standby	42	N/C
43	Ground	44	N/C
45	N/C	46	N/C
47	N/C	48	+1.5 Volt.
49	N/C	50	Ground
51	N/C	52	+3.3 Volt. Standby

Mini-Card Slot #2 (PCIE2)

Pin	Signal	Pin	Signal
1	PCIE_WAKE#	2	+3.3 Volt. Standby
3	N/C	4	Ground
5	N/C	6	+1.5 Volt.
7	CLKREQ#	8	N/C
9	Ground	10	N/C
11	MCARD_CLK2#	12	N/C
13	MCARD_CLK2	14	N/C
15	Ground	16	N/C
17	N/C	18	Ground
19	N/C	20	W_DISABLE#2
21	Ground	22	PCIE_RST#
23	PCIE_RXN2	24	+3.3 Volt. Standby
25	PCIE_RXP2	26	Ground
27	Ground	28	+1.5 Volt.
29	Ground	30	SMBCLK
31	PCIE_TXN2	32	SMBDATA
33	PCIE_TXP2	34	Ground
35	Ground	36	USB_Data9-
37	Ground	38	USB_Data9+
39	+3.3 Volt. Standby	40	Ground
41	+3.3 Volt. Standby	42	N/C
43	Ground	44	N/C
45	N/C	46	N/C
47	N/C	48	+1.5 Volt.
49	N/C	50	Ground
51	N/C	52	+3.3 Volt. Standby

DDR2 SODIMM Slot (DIMM1)

Standard specification

3.0 AMI BIOS SETUP

AMI BIOS Setup

AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

Entering Setup

Power on the computer and press <Del> or <F2> immediately. This will allow you to enter Setup.

Main

Set the date, use tab to switch between date elements.

Advanced

Enable disable boot option for legacy network devices.

Chipset

host bridge parameters.

Boot

Enables/disable quiet boot option.

Security

Set setup administrator password.

Save&Exit

Exit system setup after saving the changes.

Setup 1: The Main BIOS Menu.

The sections that follow provide guidelines on how to set up the various settings in each section of the BIOS. We have concentrated only on those settings that may need changing, if a setting does not appear in this document, leave it as you found it.
Press Enter on a main menu option to go into that section.
To return to the Main Menu from within a section, press Escape.
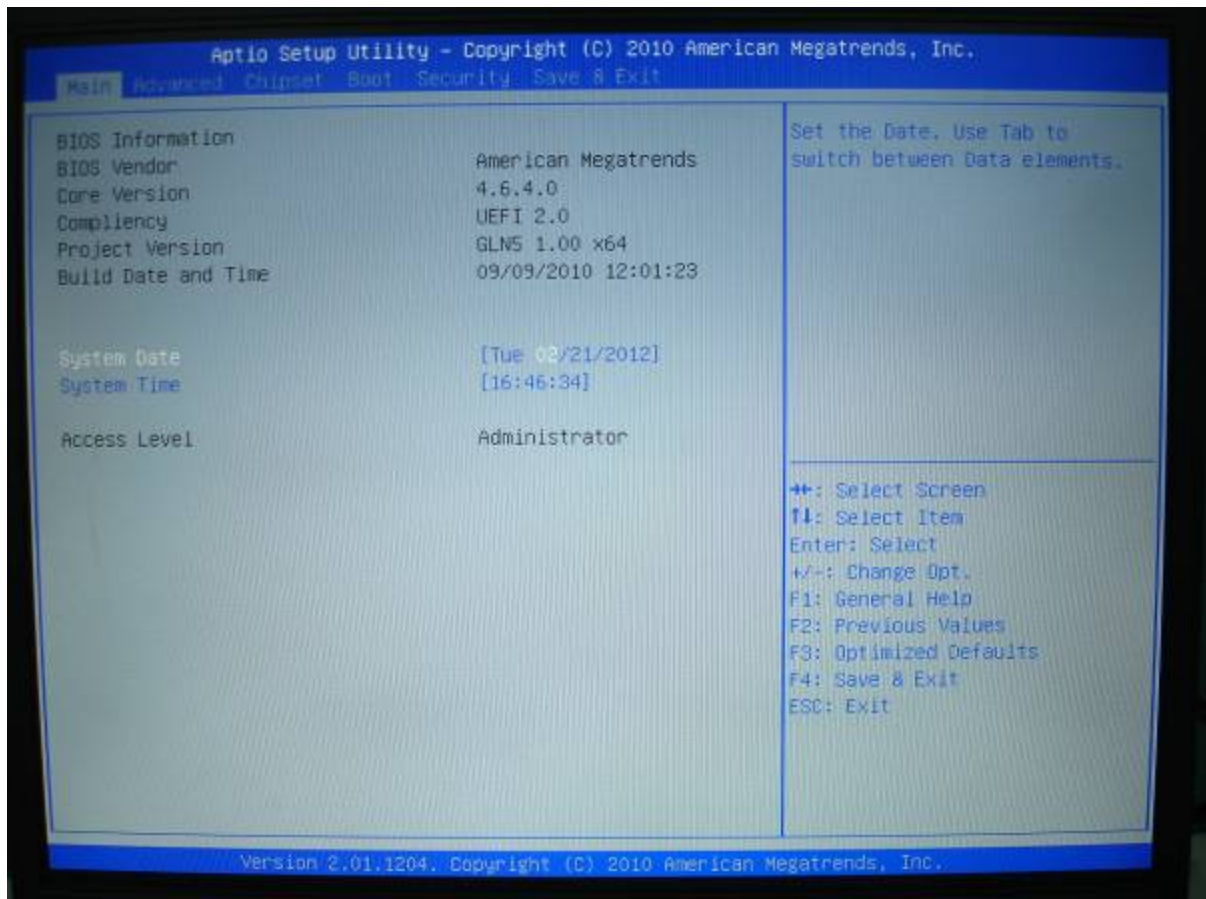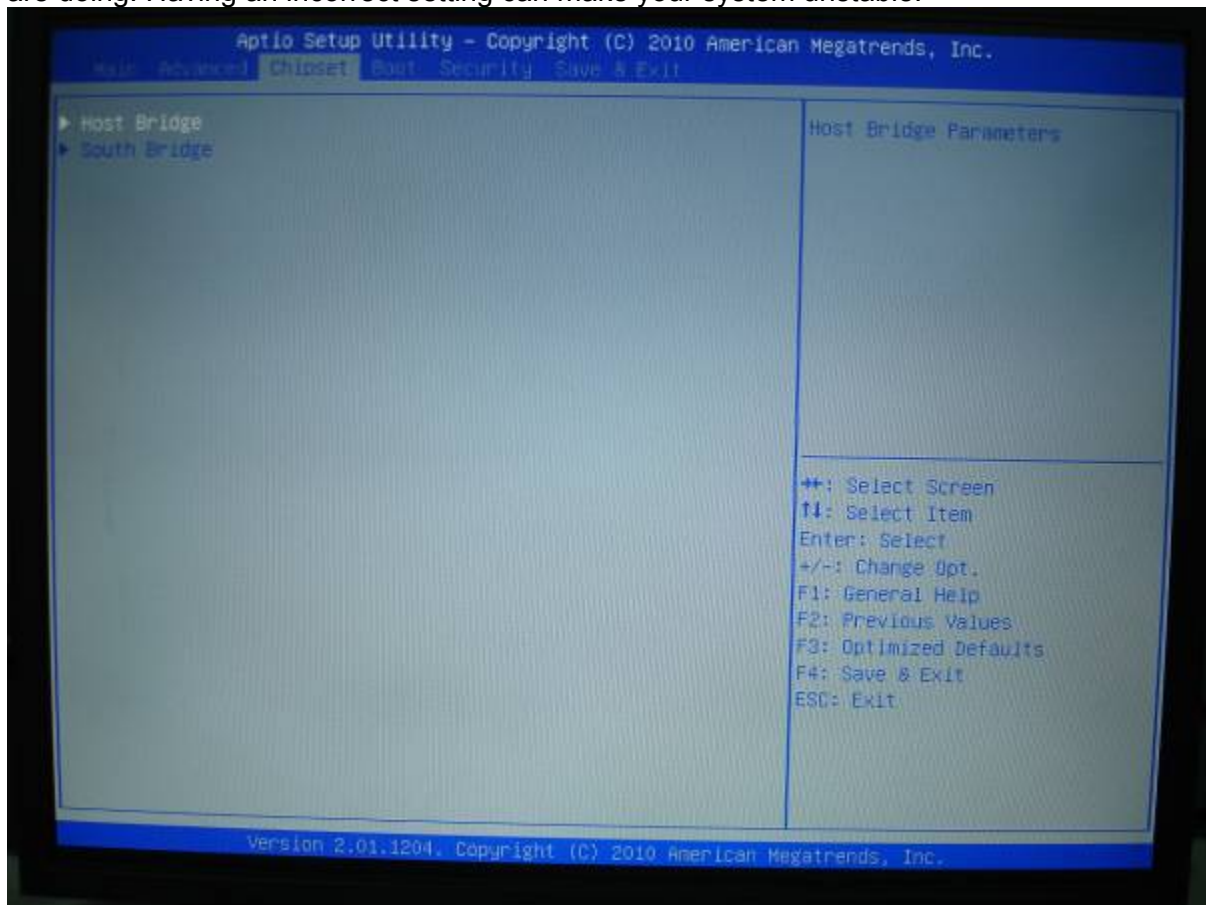

Screen 1

Setup 2: Advanced BIOS Features

As you can see from screen 2, there are numerous advance settings which you can select if required. For most cases leaving the default setting should be adequate.
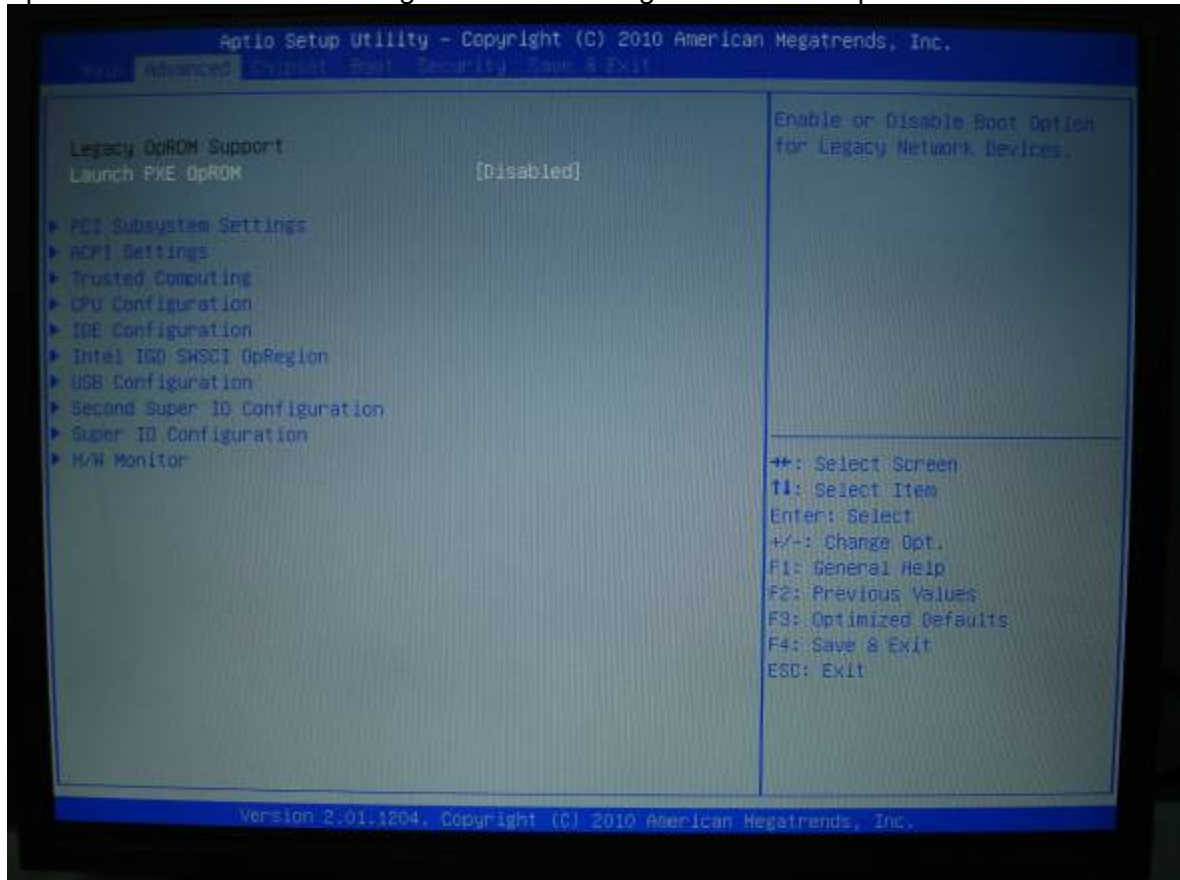
Screen 2

Setup 3: Chipset

Here you can setup the contents of the chipset buffers. It is closely related to the hardware and is therefore recommended that you leave the default setting unless you know what you are doing. Having an incorrect setting can make your system unstable.

Screen 3

Setup 4: Boot

This menu allows you to set the "Boot Configuration". You can make changes as necessary.
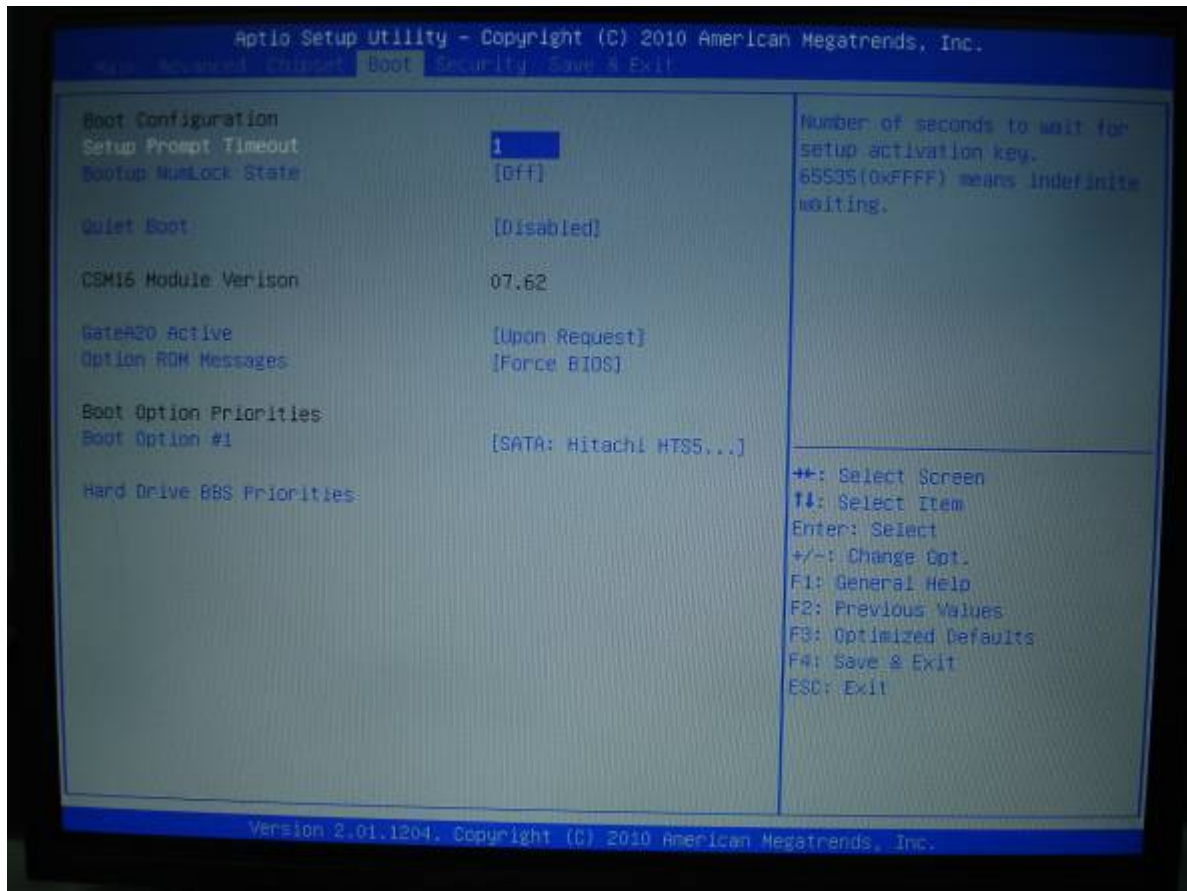
Screen 4

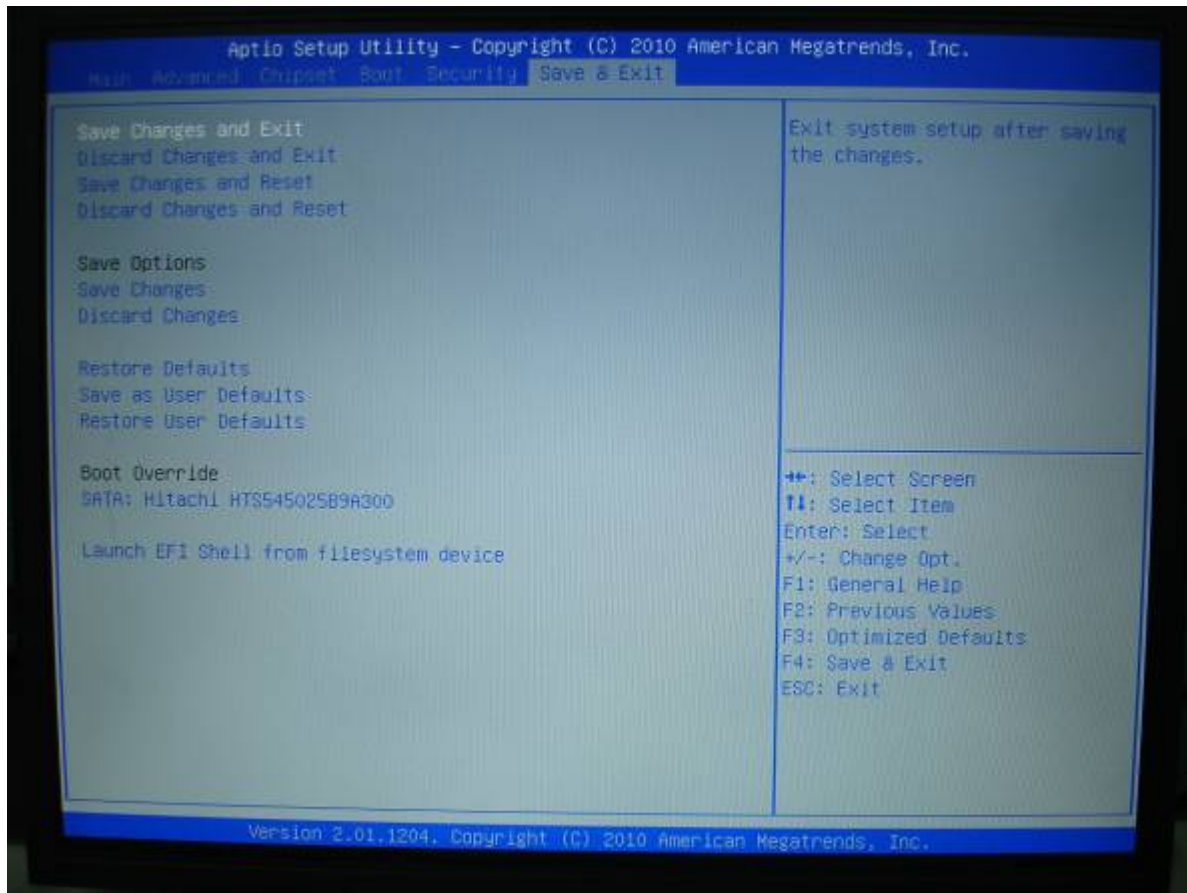**Setup 5: Power Management Setup**

This menu allows you to set the "Password".
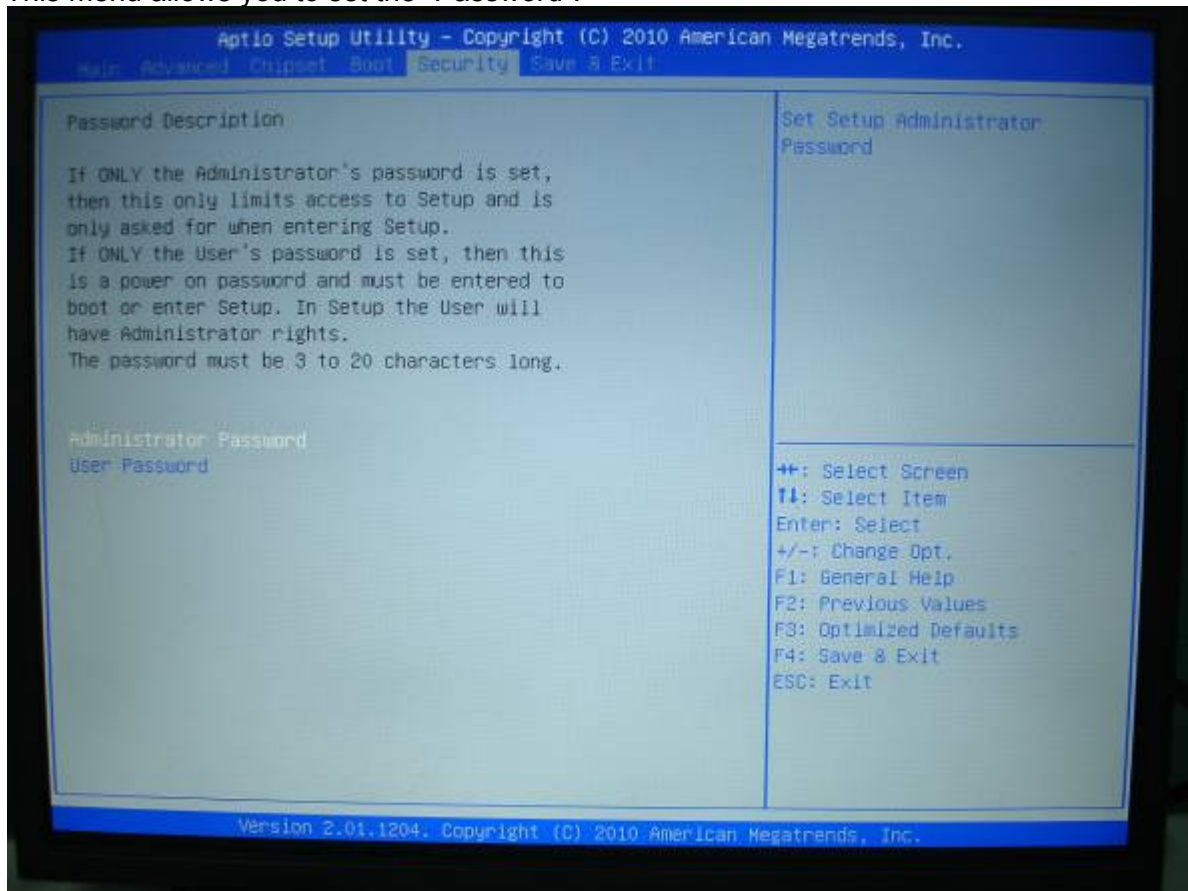
Screen 5

Setup 6: Save and Exit Setup

To save any changes you made to the BIOS you must choose this option.

Screen 6

4.0 DRIVER INSTALLATION

The REC3424 comes with a CD-ROM that contains all drivers and utilities that meet your needs.

Follow the sequence below to install the drivers:
Step 1 – Install INF Driver
Step 2 – Install VGA Driver
Step 3 – Install LAN Driver
Step 4 – Install Audio Driver

USB 2.0 Drivers are available for download using Windows Update for both Windows XP and Windows 2000. For additional information regarding USB 2.0 support in Windows XP and Windows 2000, please visit www.microsoft.com/hwdev/usb/.

Please read instructions below for further detailed installations.

4.1 Installation:
Insert the REC3424 CD-ROM into the CD-ROM Drive. And install the drivers from Step 1 to Step 5 in order.

Step 1 – Install Intel INF Driver

1. Click on the ***Step 1-Intel Inf Driver*** folder and then double click on the ***Setup.exe***
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 2 – Install Intel VGA Driver
1. Click on the ***Step 2-Intel VGA Driver*** folder and select the OS folder your system is
2. Double click on the ***.exe*** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 3 – Install Intel LAN Driver
1. Click on the ***Step 3-Intel LAN Driver*** folder and select the OS folder your system is
2. Double click on the ***.exe*** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 4 – Install Realtek Audio Driver

1. Click on the ***Step 4-Realtek Audio Driver*** folder and select the OS folder your system is
2. Double click on the ***setup.exe*** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically