

525

Network Application Platform

User's Manual

Rev: 1.0

Date: 2012.03

CONTENTS

CHAPTER 1	PACKAGE CONTENTS	3
CHAPTER 2	INTRODUCTION.....	4
CHAPTER 3	LAYOUT	5
CHAPTER 4	REAR PANEL SKETCH MAP.....	5
CHAPTER 5	INSTALLATION.....	6
	The Interface Definition.....	6
5.1.1	<i>Function Port Panel.....</i>	<i>6</i>
5.1.2	<i>USB Extension Interface</i>	<i>6</i>
5.1.3	<i>COM2-COM4 Extension Interface.....</i>	<i>6</i>
5.1.4	<i>LVDS Flat Panel Connector:LVDS CON.....</i>	<i>7</i>
	Jumper Settings.....	8
5.2.1	<i>Jumper Presentation.....</i>	<i>8</i>
5.2.2	<i>Clear CMOS.....</i>	<i>8</i>
5.2.3	<i>LVDS Power Selection Jumper:LCD-PWR.....</i>	<i>8</i>
5.2.4	<i>Inverter Power Jumper:INVERTER-PWR</i>	<i>8</i>
	Memory installation	9
5.3.1	<i>The system board supports One DDRIII SO-DIMM</i>	<i>9</i>
5.3.2	<i>IDE Devices Installation</i>	<i>9</i>
	Other Device Installation.....	10
CHAPTER 6	DRIVER INSTALLATION.....	12
6.1	Installation Directory	12
6.2	Intel Chipset Software Setup.....	12
6.3	VGA Driver Setup	14
6.4	NETWORK Driver Setup.....	16
CHAPTER 7	BIOS SETUP.....	19

7.1 Entering Setup	19
7.2 Control keys	19
7.3 The Menu Bar	20
7.4 Main menu	21
7.5 Advanced.....	22
7.6 PCIPnP.....	25
7.7 Boot.....	26
7.8 Security.....	26
7.9 Chipset.....	26
7.10 EXIT.....	28
CHAPTER 8 WATCHDOG PROGRAMMING INSTRUCTIONS.....	29
Port explain.....	29
Example.....	29
CHAPTER 10 ENVIRONMENT	30

Chapter 1 Package Contents

Your mainboard package contains the following items:

- 1 One D525 mainboard
- 2 SATA data cable
- 3 Drives installed CD
- 4 One user's manual

Chapter 2 Introduction

Key Features:

-Chipset:

Intel **ATOM D525 + ICH8M**

-CPU:

An onboard low-power INTEL Atom® processors, main frequency D525 as 1.80GHZ, 1MB L2 cache, supports Hyper-Threading technology, which is run at the two thread task.

-Memory:

Supports DDR3 800 Single Channel Mode

Provides 200pin SO-DIMM DDR3 slots

-I/O :

- Provides two channel connecting two SATA drives

With speed up to 300MB/S

Four serial port

One LPT port

One VGA port

Four USB ports

-Onboard network Card

Onboard two RTL8111DL network Card

-Expansion slot:

One 32-bit PCI slots 2.3 specification compliant

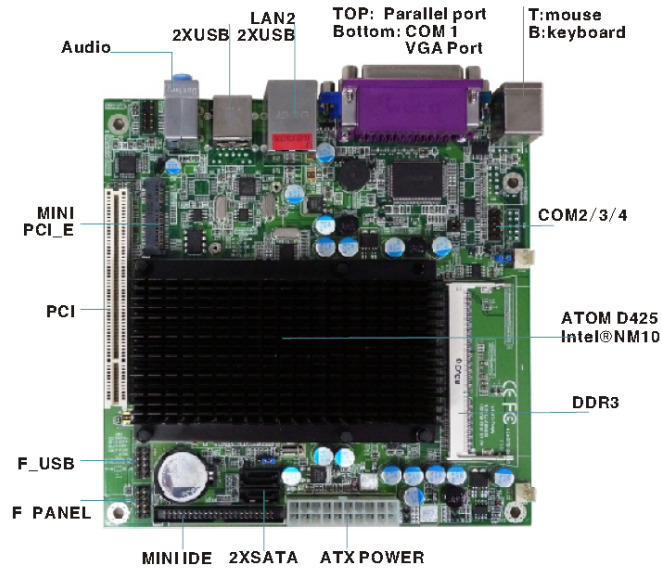
One Mini PCIE port

-Power supply:

ATX standard power mode.

Chapter 3 Layout

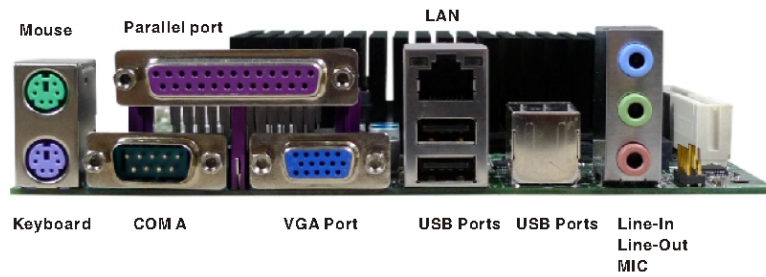
Layout



Chapter 4 Rear panel sketch map

Rear Panel

The rear panel provides the following connectors

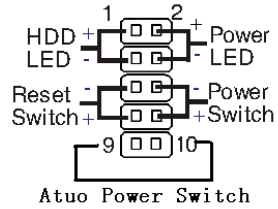


Chapter 5 Installation

The Interface Definition

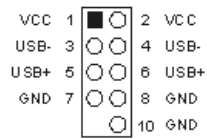
5.1.1 Function Port Panel

FPIO1

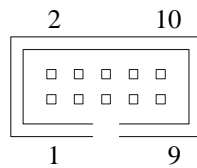


5.1.2 USB Extension Interface

USB2

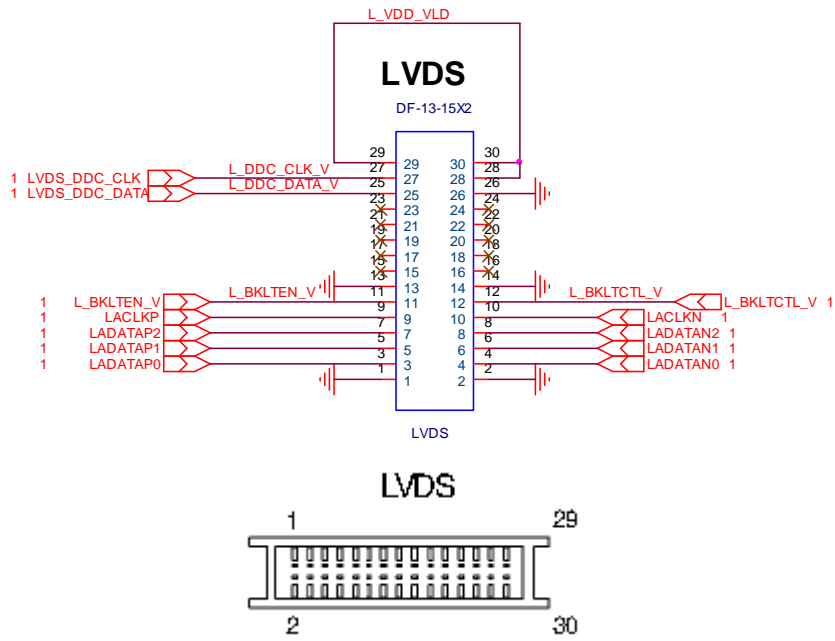


5.1.3 COM2-COM4 Extension Interface



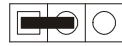
Pin #	Signal Name
1	DCD, Data carrier detect
2	DSR, Data set ready
3	RXD, Receive data
4	RTS, Request to send
5	TXD, Transmit data
6	CTS, Clear to send
7	DTR, Data terminal ready
8	RI, Ring indicator
9	GND, ground
10	COM VCC

5.1.4 LVDS Flat Panel Connector:LVDS CON



Jumper Settings

5.2.1 Jumper Presentation



Pins 1 and 2 are shorted with a jumper cap.

1 2 3

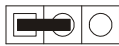



Pins 2 and 3 are shorted with a jumper cap.

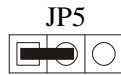
1 2 3

5.2.2 Clear CMOS

J1 is used to clear the CMOS Data in the RTC.

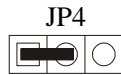
J1	Description
	Normal
	Clear CMOS

5.2.3 LVDS Power Selection Jumper: LCD-PWR



Pin #	MODE
1 & 2short	+3.3V
2 & 3short	+5V

5.2.4 Inverter Power Jumper: INVERTER-PWR



Pin #	MODE
1 & 2short	+12V
2 & 3short	+5V

Memory installation

5.3.1 The system board supports One DDRIII SO-DIMM

1. Single Channel (SC)

Data will be accessed in chunks of 64 bits (8B) from the memory channels.
2. A DIM module simply snaps into a DIMM socket on the system board. Pin 1 of the DIM module must correspond with Pin 1 of the socket.
 - 1). Pull the “tabs” which are at the ends of the socket to the side.
 - 2). Position the DIMM above the socket with the “notch” in the module aligned with the “key” on the socket.



- 3). Seat the module ver tickly into the socket. Make sure it is completely seated. The tabs will hold the DIMM in place.

5.3.2 IDE Devices Installation

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others.

The mainboard support one or two IDE devices. If you connect two

devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable.

Other Device Installation

5.4.1 Serial ATA Installation

(7-Pin SATA1/SATA3)

The motherboard bundles the new Serial ATA technology through the SATA interfaces onboard. The SATA specification allows for thinner, more flexible cables with lower pin count, reduced voltage requirement. These connectors support Serial ATA HDDs and allow up to 300MB/s data transfer rate using thin 4-conductor SATA cables. faster than the standard parallel ATA with 133MB/s(Ultra ATA/133)

Note1: The Serial ATA cable is smaller and more flexible allowing easier routing inside the chassis. The lower pin count of the Serial ATA cable eliminates the problem caused by the wide, flat ribbon cables of the Parallel ATA interface.

Hot plug support for Serial ATA drive and connections are not available in this motherboard.

5.4.2 Clear CMOS (Clear RTC RAM)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The RAM data in CMOS, that include system setup information such as system passwords, is powered by the onboard button cell battery.

- 1、 Turn OFF the computer and unplug the power cord.
- 2、 Move the jumper cap from pin 1-2(default) to pin 2-3.Keep the cap on pin 2-3 for about 5-10 seconds, and then move the cap back to pins1-2.
- 3、 Plug the power cord and turn ON the computer.
- 4、 Hold down the<F1> key during the boot process and enter BIOS setup to re-enter data.

Note1: Except when clearing RTC RAM, never remove the cap on CLRTC1 jumper default position. Removing the cap will cause system boot failure!

Note2: You do not need to clear the RTC when the system hangs due to over clocking. For system failure due to over clocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so BIOS can automatically reset parameter settings to default values.

Chapter 6 Driver Installation

6.1 Installation Directory

The utility CD is supplied with that mainboard the connects contained in it is showed as below:

Directory	Driver	OS
Inf\INF_9.2.0.1021	Intel chipset software	Windows 2000/XP/Vista
VGA\D410_D510	Intel onboard VGA driver	Windows 2000/XP/Vista
Network\Intel\intel 82574	onboard NETWORK driver	Windows 2000/XP/Vista

Before installing audio driver, you must identify the mode of HD Audio codec. For example: If you use Related serial codec, you need to enter into the Related directory installing.

6.2 Intel Chipset Software Setup

Insert the driver CD, running driver software CD, choose the directory: \ CD-ROM:\ Inf\INF_9.2.0.1021\ INF_allOS_9.2.0.1021_PV



Click“NEXT”to continue



Select "YES" to continue



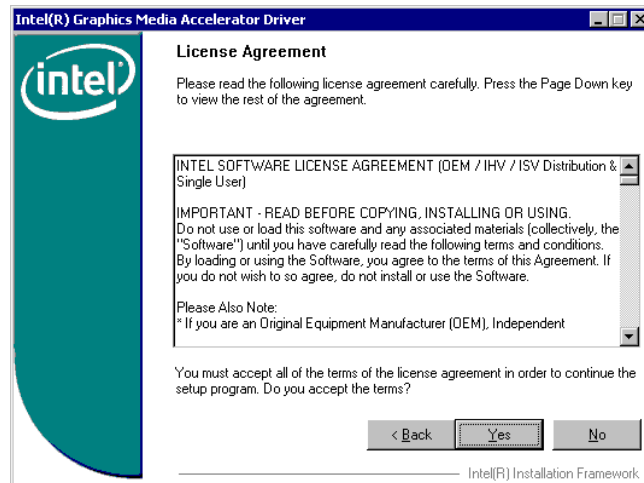
Select "NEXT" to continue



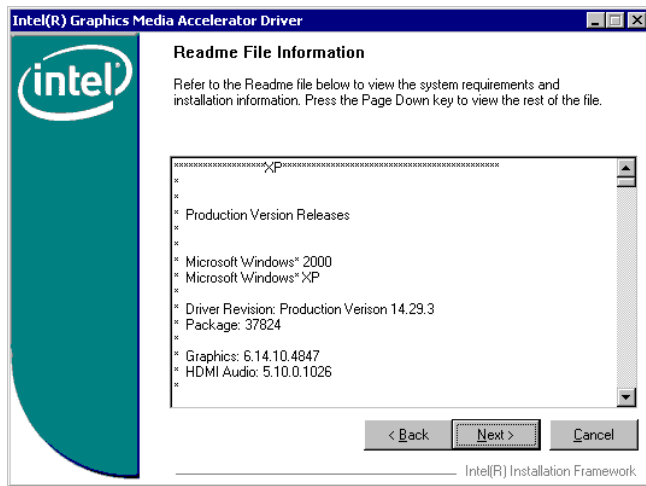
Select "FINISH" to complete the installation.

6.3 VGA Driver Setup

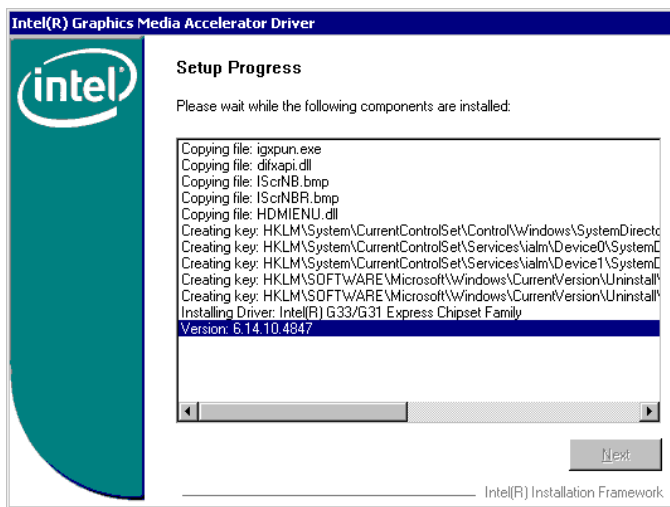
Insert the driver CD, running driver software CD, choose the directory: \CD-ROM:\VGA\D410_D510\



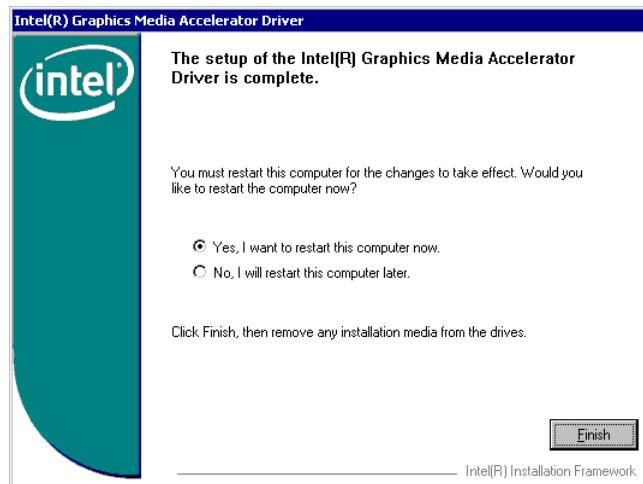
Select "Yes" to continue



Select "Next" to continue



Continue

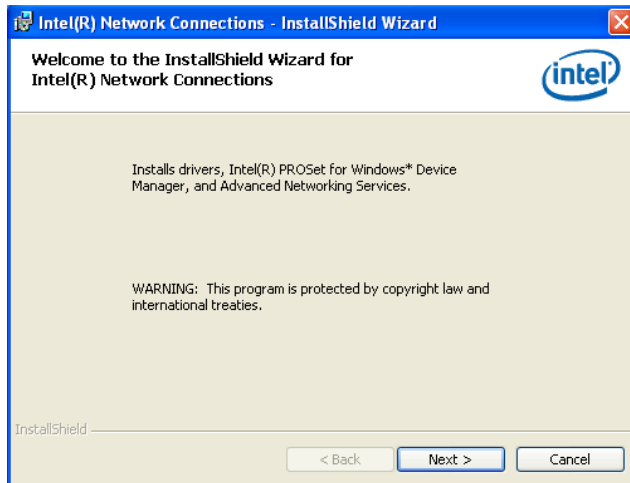


Select "Finish" to complete the installation

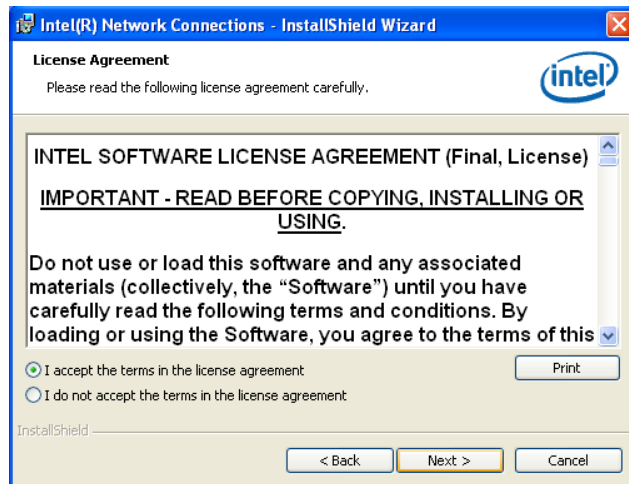
6.4 NETWORK Driver Setup

Insert the driver DVD, running driver software DVD, choose the directory:

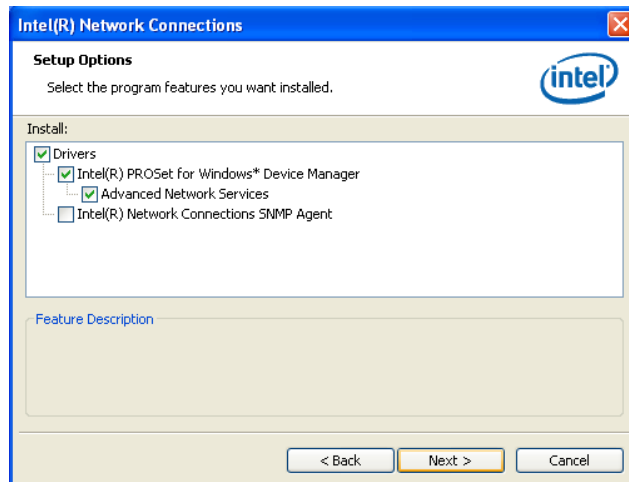
\\DVD-ROM:\ Network\Intel\intel 82574\



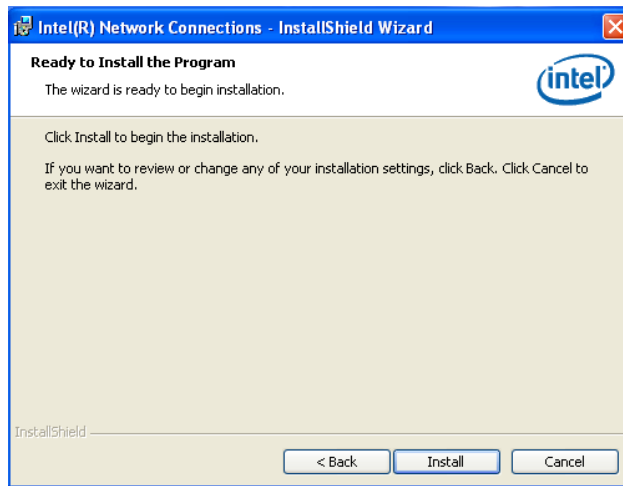
Select "Next" to continue



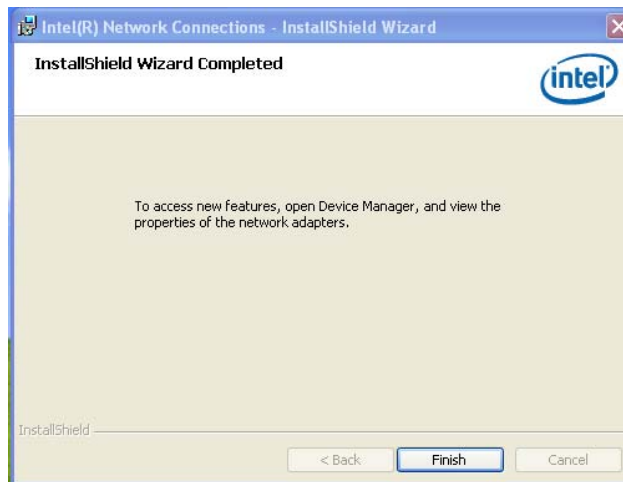
Select "Next" to continue



Select "Next" to continue



Select "Install" to continue



Select "Finish" to continue

Chapter 7 BIOS Setup

7.1 Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. when the message below appears on the screen, press key to enter Setup.

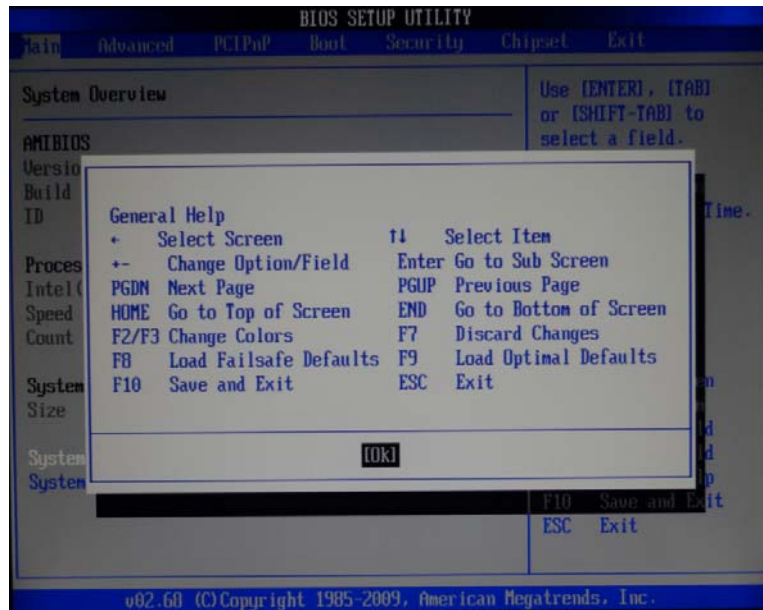
Press to run Setup

If the message disappears before you respond and you still wish to enter setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

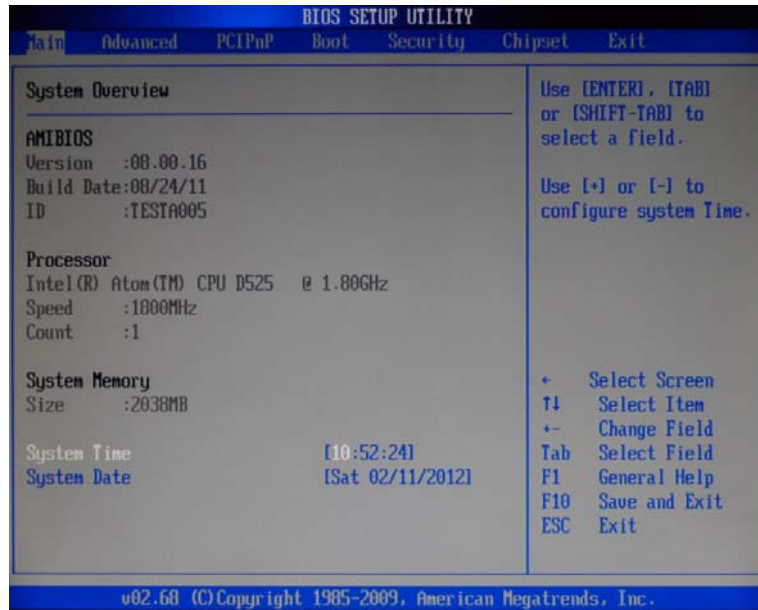
2. Use the arrow keys to select the item and press <Enter> to accept or enter the sub-menu

7.2 Control keys

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

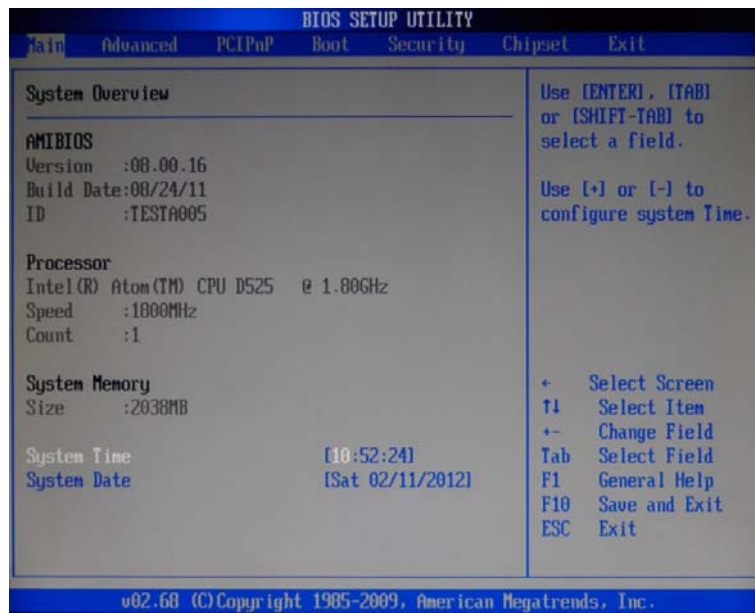


7.3 The Menu Bar



- ✧ **Main**
Use this menu for basic system configurations, such as time, date, etc.
- ✧ **Advanced**
Use this menu to set up the items of special enhanced features.
- ✧ **PCIPnP**
Setup PnP and PCI interface parameter.
- ✧ **Boot**
Use this menu to specify the priority of boot devices.
- ✧ **Security**
Use this menu to set supervisor and user passwords.
- ✧ **Chipset**
This menu controls the advanced features of the onboard Host Bridge and South Bridge.
- ✧ **Exit**
This menu allows you to load the BIOS default values or factory default settings into the BIOS and exit the BIOS setup utility or without changes.

7.4 Main menu



✧ **AMIBIOS** (read only)

These items show the BIOS version, write the date and BIOS ID

✧ **Processor** (read only)

These items show the CPU information

✧ **System Memory**

Display the size of the computer memory

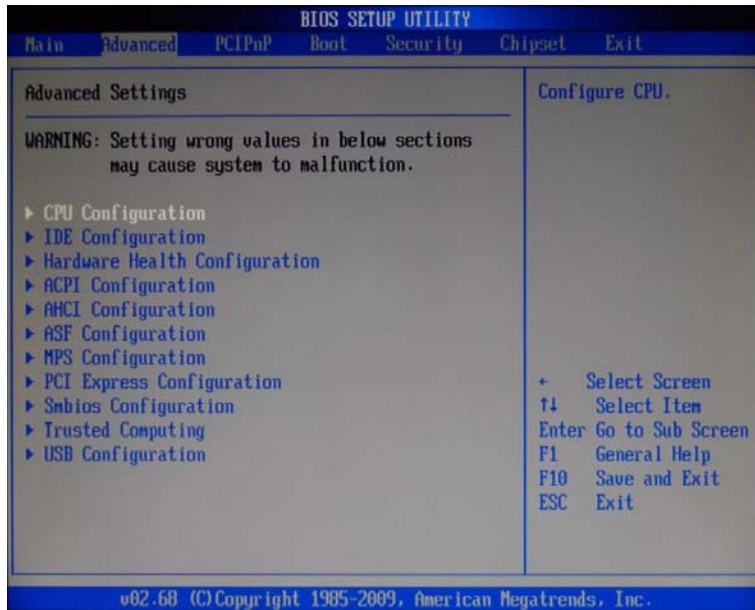
✧ **System Time**

This setting allows you to set the system time, format for hours/minutes/sec

✧ **System Date**

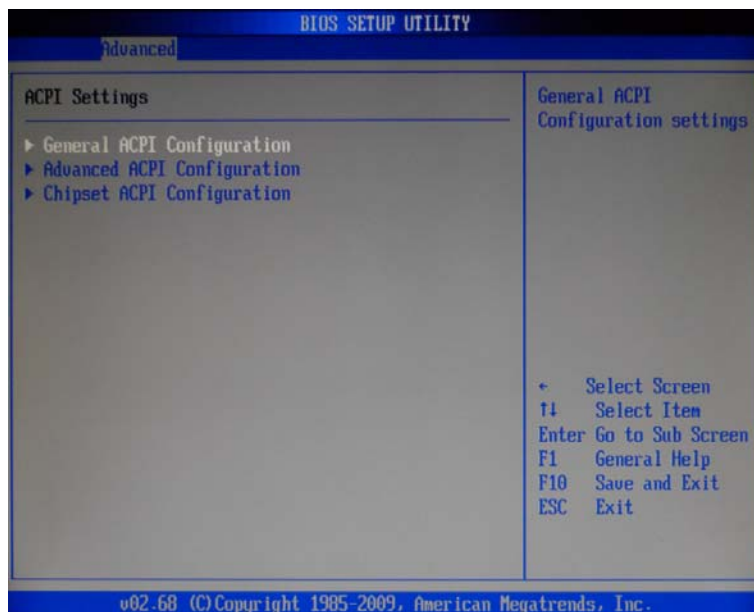
This setting allows you to set the system date, format for the week/month/day/year

7.5 Advanced



Feature	Option	Description
Advanced Settings		
CPU Configuration	Menu item	Options for CPU
IDE Configuration	Menu item	Configure the IDE devices
Hardware Health Configuration	Menu item	Configure/monitor the Hardware Health
ACPI Configuration	Menu item	Section for Advanced ACPI Configuration
AHCI Configuration	Menu item	Section for Advanced AHCI Configuration
ASF Configuration	Menu item	Options for ASF
MPS Configuration	Menu item	MPS Version Control for OS
PCI Express Configuration	Menu item	PCI Device Settings options
Smbios Configuration	Menu item	System Management BIOS
Trusted Computing	Menu item	Whether to support the TCG/TPM
USB Configuration	Menu item	USB Device Settings options

-
- ✧ **CPU Configuration**
 - ✧ Max CPUID Value Limit Default: Disabled
 - ✧ Execute-Disable Bit Capability Default: Enabled
 - ✧ Hyper Threading Technology Default: Enabled
 - ✧ Intel® SpeedStep (tm) tech Default: Disabled
 - ✧ Intel® C-STATE tech Default: Enabled
 - ✧ Enhanced C-States Default: Enabled
 - ✧ **IDE Configuration**
 - ✧ ATA/IDE Configuration Default: Compatible
 - ✧ Legacy IDE Channels Default: SATA Pri, PATA Sec
 - ✧ Primary IDE /Secondary Master/Slave
Press <Enter> to enter the sub menu of detailed options.
Ordinarily, The BIOS will automatically detect the IDE drives type.
 - ✧ Hard Disk Write Protect Default: Disabled
 - ✧ IDE Detect Time Out (Sec) Default: 35
 - ✧ ATA(PI) 80Pin Cable Detection Default: Host & Device
 - ✧ Enhanced C-States Default: Enabled
 - ✧ **ACPI Configuration**



- ✧ **General ACPI Configuration**
 - ✧ Suspend mode Default: Auto
 - ✧ Repost Video on S3 Resume Default: No
-

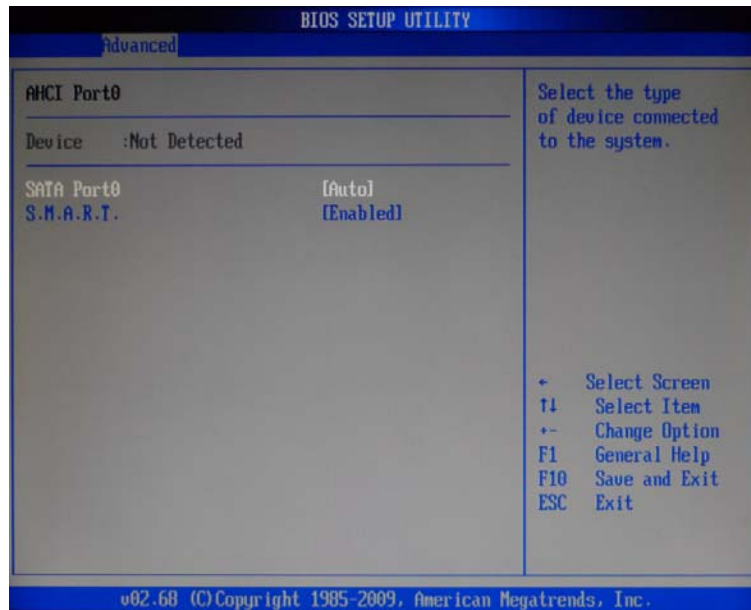
◇ **Advanced ACPI Configuration**

- ◇ ACPI Version Features Default: ACPI v1.0
- ◇ ACPI APIC support Default: Enabled
- ◇ AMI OEMB table Default: Enabled
- ◇ Headless mode Default: Disabled

◇ **Chipset ACPI Configuration**

- ◇ Energy Lake Feature Default: Disabled
- ◇ APIC ACPI SCI IRQ Default: Disabled
- ◇ USB Device Wakeup From S3/S4 Default: Disabled
- ◇ High Performance Event Timer Default: Enabled
- ◇ HPET Memory Address Default: FED00000h

◇ **AHCI Configuration**



- ◇ SATA Port0 Default: Auto
- ◇ S.M.A.R.T Default: Enabled

SATA Port0: Select the type of device connected to the system

S.M.A.R.T: (Self-Monitoring Analysis and Reporting Technology) is a utility that monitors your disk status to predict hard disk failure.

◇	PCI Express Configuration	
◇	Relaxed Ordering	Default: Auto
◇	Maximum Payload Size	Default: Auto
◇	Extended Tag Field	Default: Auto
◇	No Snoop	Default: Auto
◇	Maximum Read Request Size	Default: Auto
◇	Active State Power Management	Default: Disabled
◇	Extended Synch	Default: Auto
◇	USB Configuration	
◇	Legacy USB Support	Default: Enabled
◇	USB 2.0 Controller Mode	Default: HiSpeed
◇	BIOS EHCI Hand-Off	Default: Enabled
◇	USB 3.0 Controller Mode	Default: Enabled
◇	BIOS XHCI Hand-OFF	Default: Enabled
◇	Hotplug USB FDD Support	Default: Auto
◇	USB Mass Storage Device Configuration	
◇	USB Mass Storage Reset Delay	Default: 20 Sec
◇	Emulation Type	Default: Auto

7.6 PCIPnP

◇	Advanced PCI/PnP Settings	
◇	Clear NVRAM	Default: No
◇	Plug & Play O/S	Default: No
◇	PCI Latency Timer	Default: 64
◇	Allocate IRQ to PCI VGA	Default: Yes
◇	Palette Snooping	Default: Disabled
◇	PCI IDE BusMaster	Default: Enabled
◇	OffBoard PCI/ISA IDE Card	Default: Auto
◇	IRQ3	Default: Available
◇	IRQ4	Default: Available
◇	IRQ5	Default: Available
◇	IRQ7	Default: Available
◇	IRQ9	Default: Available
◇	IRQ10	Default: Available
◇	IRQ11	Default: Available
◇	IRQ14	Default: Available
◇	IRQ15	Default: Available

7.7 Boot

✧ Boot Settings Configuration

- ✧ Quick Boot Default: Enabled
- ✧ Quiet Boot Default: Disabled
- ✧ AddOn ROM Display Mode Default: Force BIOS
- ✧ Bootup Num-Lock Default: On
- ✧ PS/2 Mouse Support Default: Auto
- ✧ Wait For 'F1' If Error Default: Enabled
- ✧ Hit 'DEL' Message Display Default: Enabled
- ✧ Interrupt 19 Capture Default: Disabled

✧ Boot Settings Configuration

- ✧ 1st Boot Device [USB:USB Hotplug FD]
- ✧ 2st Boot Device [SATA: xxxxxxxxx]

Specifies the boot sequence from the available devices.

Click [+] [-] can change the boot sequence

7.8 Security

- ✧ Change Supervisor Password Default: Not Installed
- ✧ Change User Password Default: Not Installed
- ✧ Boot Sector Virus Protection Default: Disabled

If you highlight this item and press Enter, a dialog box appears that you can enter a supervisor password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. There will be the second dialog box asking you to retype the password for confirmation. Press Enter after you have retyped it correctly. Then the password is required for the access to the setup utility or for it at start-up, depending on the setting of the password check item in advanced setup.

7.9 Chipset

✧ North Bridge Chipset Configuration

- ✧ DRAM Frequency Default: Auto
- ✧ Configure DRAM Timing by SPD Default: Enabled

- ✧ Initiate Graphic Adapter Default: IGD
- ✧ Internal Graphics Mode Select Default: Enabled, 8MB

PEG Port Configuration

▶ Video Function Configuration

✧ Video Function Configuration

◇	DVMT Mode Select	Default: DVMT Mode
◇	DVMT/FIXED Memory	Default: 256MB
◇	Boot Display Device	Default: VBIOS-Default
◇	Flat Panel Type	Default: 640x480LVDS
◇	Backlight Control Support	Default: VBIOS-Default
◇	BIA Connector	Default: VBIOS-Default
◇	TV Standard	Default: VBIOS-Default
◇	Spread Spectrum Clock	Default: Disabled

◇ **South Bridge Chipset Configuration**

◇	USB Functions	Default: 10 USB Ports
◇	USB 2.0 Controller	Default: Enabled
◇	HDA Controller	Default: Disabled
◇	SMBUS Controller	Default: Enabled
◇	SLP_S4# Min. Assertion Width	Default: 1 to 2 seconds
◇	Restore on AC Power Loss	Default: Last State

◇	Bypass1	Default: Disabled
◇	Bypass2	Default: Disabled

◇ **PCIE Ports Configuration**

◇	PCIE Port 0	Default: Auto
◇	PCIE Port 1	Default: Auto
◇	PCIE Port 2	Default: Auto
◇	PCIE Port 3	Default: Auto
◇	PCIE Port 4	Default: Auto
◇	PCIE Port 5	Default: Auto
◇	PCIE High Priority Port	Default: Disabled

◇	PCIE Port 0 IOxAPIC Enable	Default: Disabled
◇	PCIE Port 1 IOxAPIC Enable	Default: Disabled
◇	PCIE Port 2 IOxAPIC Enable	Default: Disabled
◇	PCIE Port 3 IOxAPIC Enable	Default: Disabled
◇	PCIE Port 4 IOxAPIC Enable	Default: Disabled
◇	PCIE Port 5 IOxAPIC Enable	Default: Disabled

◇ PCIE Port 0-PCIE Port 5 Default value selection Disabled, can be closed nic 1-5 .

7.10 EXIT

✧ Save Changes and Exit

After you have finished the configuration of BIOS, save your settings and exit setup utility. Select “Save Changes and Exit” and press <Enter>, the following message will display, type “Y” and press <Enter> to confirm.

✧ Discard Changes and Exit

After you have finished the configuration of BIOS, If you do not want to save the settings and exit setup utility. Select “Discard Changes and Exit” and press <Enter>, the following message will display, type “Y” and press <Enter> to confirm.

✧ Discard Changes

If you do not want to save the settings, select “Discard Changes” to don’t exit setup utility without saving any change.

✧ Load Optimal Defaults

If you select this item and press enter a dialog box appears.

If you press Y, and then Enter, the setup utility loads a set of best-performance default values. These default values are quite demanding and your system might not function properly if you are using slower memory chips or other low-performance components.

✧ Load Failsafe Defaults

The safest default settings. You can use this function to detect the errors. Select this item and press <Enter>, the following message will display, type in “Y” to load the default values, type “N” to cancel.

Chapter 8 Watchdog Programming Instructions

Port explain

2EH: Address register

2FH: Data registers

Example

Set Watchdog Timer for 30 seconds

◇ In the DOS mode DEBUG command

```
-----  
C:\>debug  
-o 2e 87  
-o 2e 87 ; unlock  
-o 2e 2d  
-o 2f e0 ; bit4=0, set pin as wathdog func  
-o 2e 07  
-o 2f 08 ; Choose logic device  
-o 2e 30  
-o 2f 01 ; Activate logic device  
-o 2e f5  
-o 2f 00 ; Set time unit for seconds (Set time unit for minutes o 2f 08)  
-o 2e f6  
-o 2f 30 ; Set Timer Count h 30h= 48 seconds  
-o 2e aa ; Lock registers  
-q  
C:\>
```

After the last line of user input after enter, system in 48 seconds after time reboot

◇ **C++ language Reference code**

```
-----  
outputb (0x2e, 0x87)  
outputb (0x2e, 0x87) //open SUPER IO register  
outputb (0x2e, 0x2D)  
outputb (0x2f, 0xE0) //bit4=0, set pin as watchdog func  
outputb (0x2E, 0x07)  
outputb (0x2F, 0x08) //Select logical device  
outputb (0x2e, 0x30)  
outputb (0x2f, 0x01) //active the device  
outputb (0x2e, 0xF5)  
outputb (0x2f, 0x00) //Set time unit for seconds (Set minutes outputb (0x2f, 0x08))  
outputb (0x2e, 0xF6)  
outputb (0x2f, 0x30) // Set Timer Count h 30h= 48 seconds  
outputb (0x2E, 0xAA) // Lock SUPER IO registers  
//----- code end -----  
-----
```

If there was a system crash, through the watchdog function make the system reboot.

Chapter 10 Environment

- ◇ Operating temperature:0℃ to 60℃
- ◇ Storage temperature:-20℃ to 80℃
- ◇ Relative humidity:10% to 90% (Non self-solidifying)