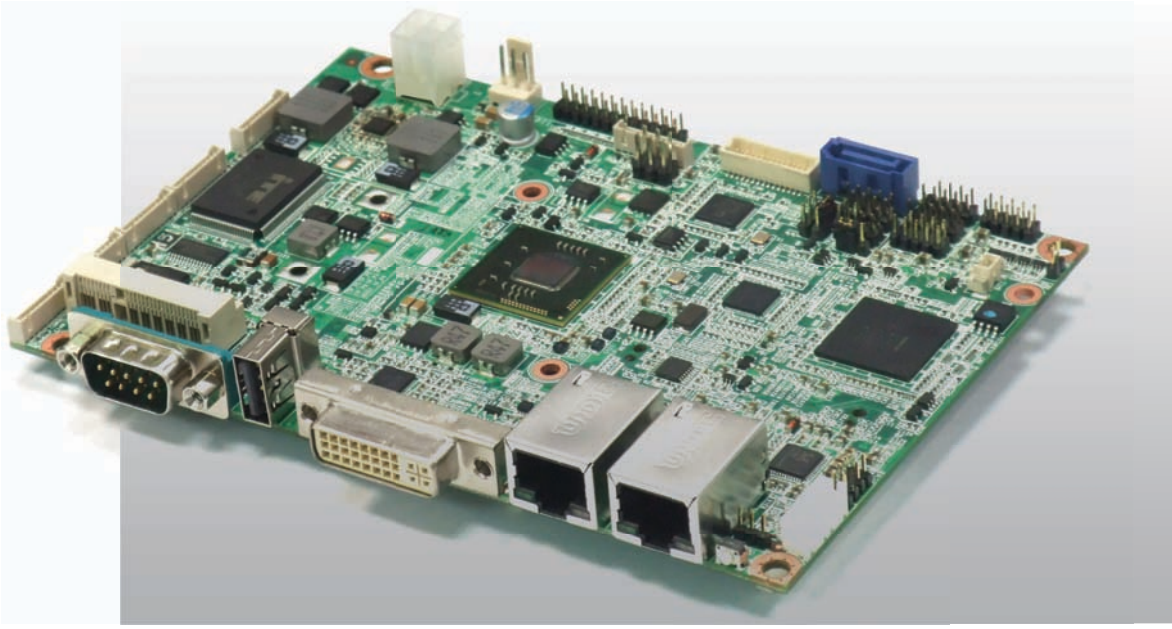
# OXY5320A

## 3.5" Single Board Computer
## User's Manual



# Safety Information

## Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area.
- If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your local distributor.

## Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter any technical problems with the product, contact your local distributor

## Statement

## Revision History

| Revision | Date (dd.mm.yyyy) | Changes |
|---|---|---|
| Version 1.0 | 28.05.2012 | Initial release |
| Version 1.1 | 19.07.2012 | Disable COM5 |
| Version 1.2 | 21.08.2012 | Enable COM5 |

## Packing list

- ☐ **OXY5320A 3.5” SBC**
- ☐ **CD (Driver + user's manual)**

## Optional Accessories

- ☐ **Cable kit for OXY5320A**
- ☐ **Passive heatsink (up to 75°C)**
- ☐ **CPU cooler**

## Ordering Information

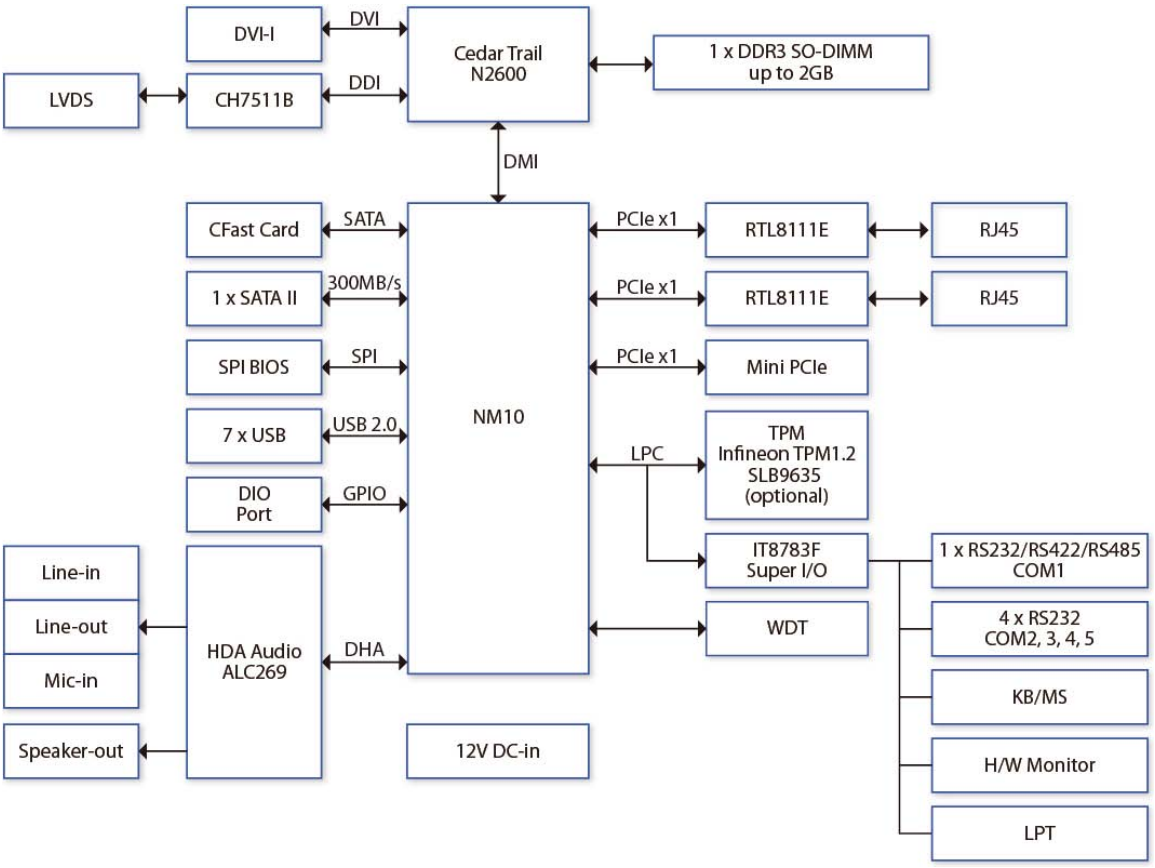
| Model Number | Description |
|---|---|
| OXY5320A-ET | 3.5'' SBC Intel® Cedarview N2600 with DDR3 SODIMM, Dual Display by LVDS/DVI-I, Dual GbE LAN, Audio, 5 x COM, 7 x USB, and 12V DC-in (-20 to 70°C) |
| OXY5320A-UT | 3.5'' SBC Intel® Cedarview N2600 with DDR3 SODIMM, Dual Display by LVDS/DVI-I, Dual GbE LAN, Audio, 5 x COM, 7 x USB, and 12V DC-in (-40 to 85°C) |

If any of the above items is damaged or missing, please contact your local distributor.

# Table of Contents

# Chapter 1: Product Information

## 1.1 Block Diagram



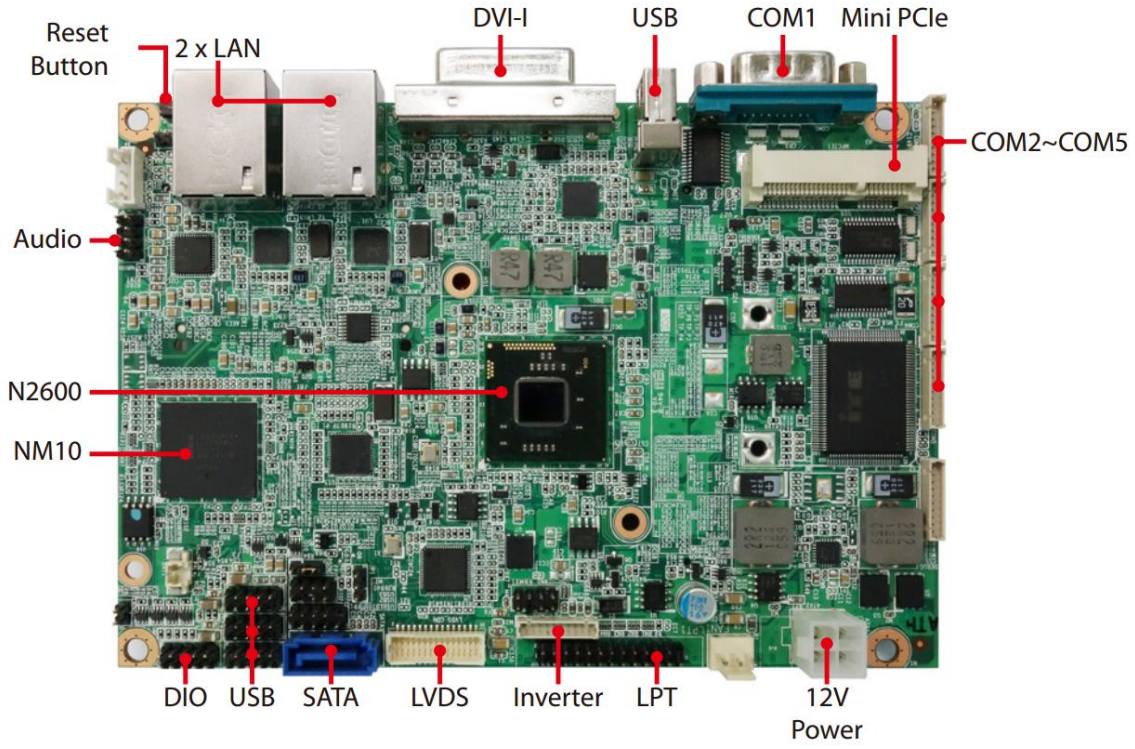
## 1.2 Specifications

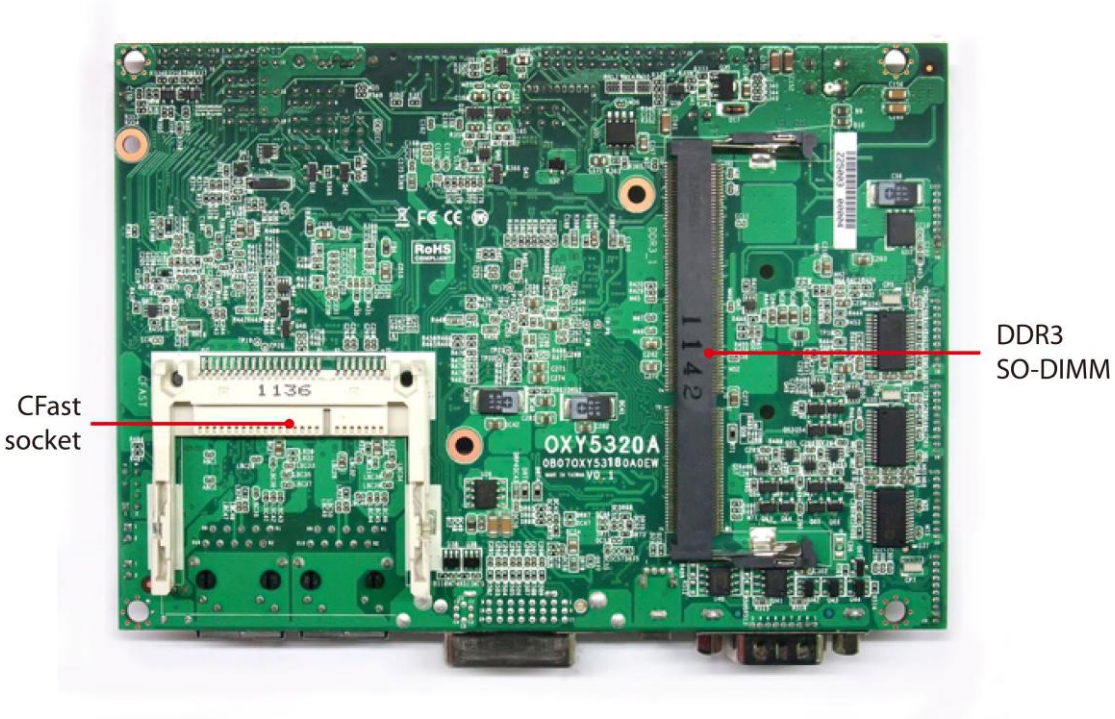
| | |
|---|---|
| Processor & System | |
| CPU Type | Intel® Atom™ N2600 1.60GHz onboard |
| Chipset | Intel® NM10 |
| Memory Type | 1 x 204 pin SO-DIMM DDR3 800/1066 up to 2GB |
| BIOS | AMI® BIOS |
| Super I/O | ITE IT8783F |
| TPM | Infineon TPM1.2 SLB9635 (optional) |
| Expansion Slot | |
| | 1 x Mini PCIe Slot |
| Display | |
| Chipset | Integrated Intel® GMA3600 VR Graphic core SGX545 |
| DVI-I | Yes (Max. resolution 1920 x 1200 @60Hz) |
| LVDS | Supports 18/24-bit single/dual channel LVDS<br>(Max. resolution 1600 x 1200 @60Hz) |
| Dual Independent Displays Capability | LVDS + DVI-I |
| Audio | |
| Codec | Realtek ALC269 High Definition Audio Codec<br>*2W amplifier onboard |
| Ethernet | |
| Chipset | 2 x RTL8111E GbE LAN |
| WOL | Yes |
| Boot from LAN | Yes for PXE |
| Rear I/O | |
| DVI-I | 1 (DVI-D + VGA) |
| Ethernet | 2 x RJ45 |
| USB 1.1/2.0 | 1 |
| COM | 1 x RS-232/422/485 with 5V/12V selection |
| Reset Button | 1 |
| Internal I/O | |
| SATA | 1 x SATAII (3Gb/s) |
| SSD | 1 x CFast Socket |
| USB 2.0 | 6 x USB2.0 ports by 2 x 5-pin header |
| COM | 4 x COM ports |
| | COM2~COM5 ports support RS232 only with<br>5V/12V selectable by 1 x 10-pin header |
| Audio | 1 x 4-pin header for Speak-out |
| LVDS | 30 pin connector |
| PS/2 | 2 x 4 pin header |
| LPT | 2 x 13 pin header |
| DIO | 8-bit (4 in/4 out) |

| Mechanical and Environment | |
|---|---|
| Form Factor | 3.5" SBC |
| Power Type | 12V DC-in, 4-pin ATX power connector, AT/ATX mode support |
| Dimension | 146mm x 102mm (5.7" x 4") |
| Operating Temp. | -20 to 70°C |
| Storage Temp. | -20 to 85°C |
| Relative Humidity | 10% to 90%, non-condensing |

* All specifications and photos are subject to change without notice*

## 1.3 Board Placement

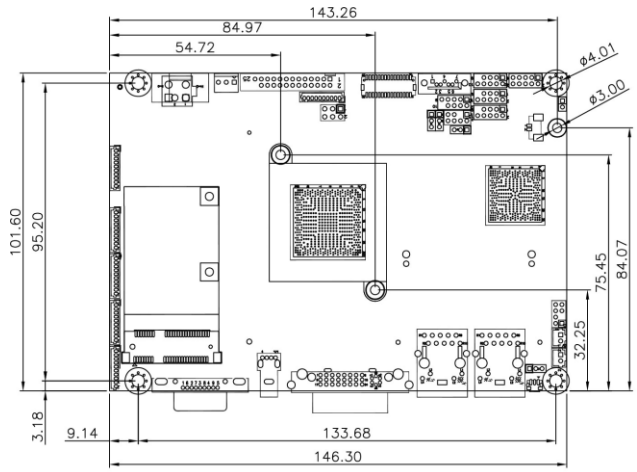


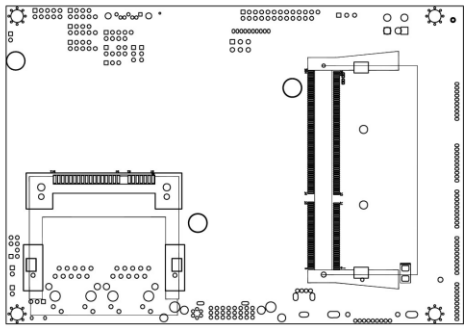
## 1.4 Onboard Connector List

| Label | Function |
|---|---|
| ATX1 | Power input connector |
| FAN1 | 3 pin FAN connector |
| LPT1 | LPT port pin header |
| CLRCMOS1 | Clear CMOS jumper setting |
| PSON1 | ATX/AT MODE setting |
| LVDS_CON | LVDS connector |
| JBKL1 | Inverter connector |
| KBMS1 | PS2 KB/MS |
| FP1 | Front panel 1 |
| FP2 | Front panel 2 |
| USB1 | USB2.0 port 0,1 pin header |
| USB2 | USB2.0 port 2,3 pin header |
| USB3 | USB2.0 port 4,5 pin header |
| RUSB1 | USB2.0 port 6 connector |
| DIO1 | Digital input/output pin header |
| AUDIO1 | LINE-OUT/LINE-IN/MIC-IN |
| SPDIF1 | SPDIF OUT |
| AMP1 | AMP output pin header |
| LAN1 | LAN connector 1 |
| LAN2 | LAN connector 2 |
| DVI | DVI-I |
| COM1 | RS232/422/485 with +12V/+5V selection |
| COM2 | RS232 with +12V/+5V selection |
| COM3 | RS232 with +12V/+5V selection |
| COM4 | RS232 with +12V/+5V selection |
| COM5 | RS232 |
| MPCIE1 | Mini PCIE connector |
| DEBUG | Debug card connector |
| BAT1 | RTC battery connector |
| CFAST | CFAST connector |
| DDR3_1 | DDR3 SO-DIMM connector |
| SATA1 | Serial ATA 2.0 Connector |

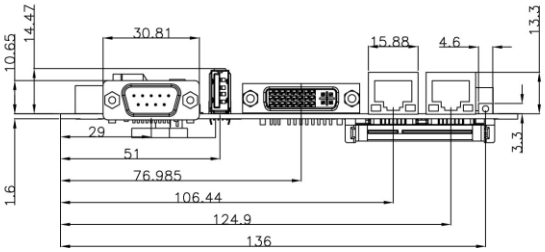
## 1.5 Mechanical Drawings




TOP VIEW



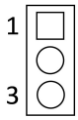
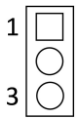
BOTTOM VIEW



# Chapter 2: Jumpers and Connectors

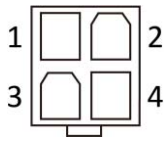
## 2.1 Jumper Settings

**PSON1: ATX/AT mode Selection**

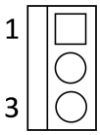
| Jumper | Function description | Setting |
|---|---|---|
| 1-2 | AT Mode |  |
| 2-3 | ATX Mode |  |
| *Default setting is 2-3* | | |

## 2.2 Connector Pin Definitions

**ATX1: Power input connector**

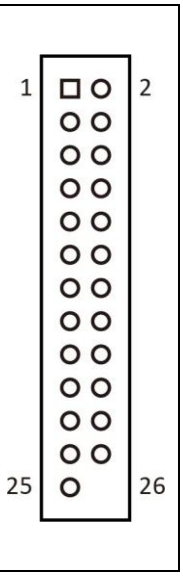
| Pin | Definition | |
|---|---|---|
| 1 | GND |  |
| 2 | GND | |
| 3 | +12V | |
| 4 | +12V | |

**FAN: 3 pin FAN connector**

| Pin | Definition | |
|---|---|---|
| 1 | GND |  |
| 2 | +12V | |
| 3 | FANIN_CPU | |

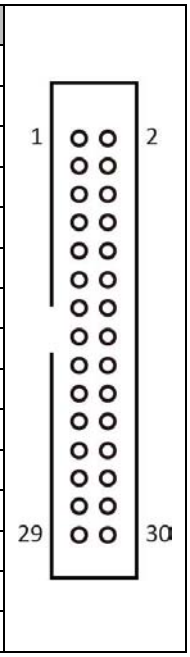
**LPT1: LPT port pin header**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | STB# | 2 | AFD# |
| 3 | SPD0 | 4 | ERROR# |
| 5 | SPD1 | 6 | PINIT# |
| 7 | SPD2 | 8 | SLIN# |
| 9 | SPD3 | 10 | GND |
| 11 | SPD4 | 12 | GND |
| 13 | SPD5 | 14 | GND |
| 15 | SPD6 | 16 | GND |
| 17 | SPD7 | 18 | GND |
| 19 | ACK# | 20 | GND |
| 21 | BUSY | 22 | GND |
| 23 | PE | 24 | GND |
| 25 | SLCT | 26 | NC |



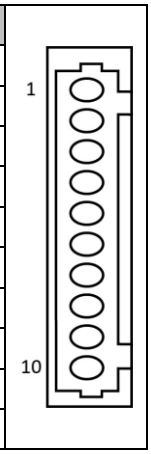

**LVDS_CON: LVDS Connector**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | LVDS_BCLK | 2 | GND |
| 3 | LVDS_BCLK# | 4 | LVDS_A3 |
| 5 | GND | 6 | LVDS_A3# |
| 7 | LVDS_B3 | 8 | GND |
| 9 | LVDS_B3# | 10 | LVDS_ACLK |
| 11 | LVDS_B2 | 12 | LVDS_ ACLK # |
| 13 | LVDS_B2# | 14 | GND |
| 15 | LVDS_B1 | 16 | LVDS_A2 |
| 17 | LVDS_B1# | 18 | LVDS_A2# |
| 19 | LVDS_B0 | 20 | LVDS_A1 |
| 21 | LVDS_B0# | 22 | LVDS_A1# |
| 23 | GND | 24 | LVDS_A0 |
| 25 | LVDS_DCC_SC | 26 | LVDS_A0# |
| 27 | LVDS_DCC_SD | 28 | GND |
| 29 | LVDS_VDD | 30 | LVDS_VDD |



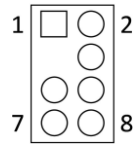
**JBKL1: Inverter connector**

| Pin | Definition |
|---|---|
| 1 | VCC12_LVDSP |
| 2 | VCC12_LVDSP |
| 3 | VCC12_LVDSP |
| 4 | VCC_LVDSP |
| 5 | VCC_LVDSP |
| 6 | GND |
| 7 | GND |
| 8 | BL_EN |
| 9 | BL_ADJ |
| 10 | GND |



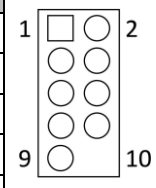

**KBMS1: KB/MS Pin Header**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | +5VSB | 2 | GND |
| 3 | NC | 4 | GND |
| 5 | MSDAT_SIO | 6 | KBDAT_SIO |
| 7 | MSCLK_SIO | 8 | KBCLK_SIO |



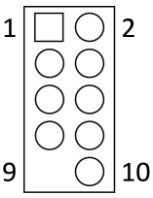

**FP1: Front Panel 1 Pin Header**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | HDLED+ | 2 | PLED+ |
| 3 | HDD_ACT_ | 4 | PLED- |
| 5 | GND | 6 | PWRBTN_ |
| 7 | SYSRST_ | 8 | GND |
| 9 | DUMMY | 10 | NC |



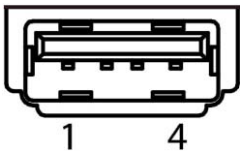

**USB1, USB2, USB3: USB2.0 Pin Header**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | FUSEVCC | 2 | FUSEVCC |
| 3 | USBN | 4 | USBN |
| 5 | USBP | 6 | USBP |
| 7 | GND | 8 | GND |
| 9 | NC | 10 | GND |



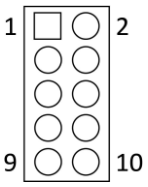
**RUSB1: USB2.0 port 6 connector**

| Pin | Definition |
|---|---|
| 1 | +5V |
| 2 | USBN |
| 3 | USBP |
| 4 | GND |



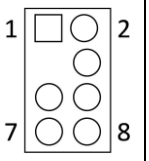

**DIO1: Digital input/output pin header**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | SBDO0 | 2 | SBDI0 |
| 3 | SBDO1 | 4 | SBDI1 |
| 5 | SBDO2 | 6 | SBDI2 |
| 7 | SBDO3 | 8 | SBDI3 |
| 9 | +5VIO | 10 | GND |



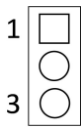

**AUDIO1: LINE-OUT/LINE-IN/MIC-IN**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | L_IN_L | 2 | L_IN_R |
| 3 | NC | 4 | AGND |
| 5 | MIC_IN | 6 | AGND |
| 7 | L_OUT_R | 8 | L_OUT_L |



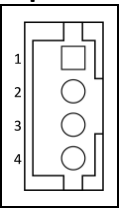

**SPDIF1: SPDIF OUT pin header**

| Pin | Definition |
|---|---|
| 1 | +5V |
| 2 | SPDIF_OUT |
| 3 | GND |



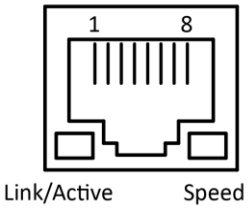

**AMP1: AMP output pin header**

| Pin | Definition |
|---|---|
| 1 | SP_OUT_R- |
| 2 | SP_OUT_R+ |
| 3 | SP_OUT_L+ |
| 4 | SP_OUT_L- |



**LAN1, LAN2: LAN connector**

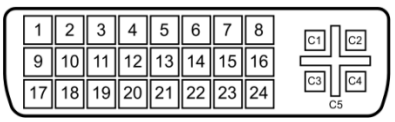
| Pin | Definition | Pin | Definition |
|---|---|---|---|
| R5 | VCC | R6 | VCC |
| R1 | TD1+ | L3 | YLED- |
| R2 | TD1- | L4 | YLED+ |
| R3 | TD2+ | L1 | GLED- |
| R4 | TD2- | L2 | OLED- |
| R7 | TD3+ | G3 | GND |
| R8 | TD3- | G4 | GND |
| R9 | TD4+ | | |
| R10 | TD4- | | |
| G1 | GND | | |
| G2 | GND | | |




| SPEED LED: (Lift) | ACTIVE LED: (Right) |
|---|---|
| GREEN: 1000Mbps | ORANGE (BLINKING): ACTIVITY |
| ORANGE: 100Mbps | No Light: NOT LINK |
| No Light: 10Mbps | ORANGE (NO BLINKING): LINK |

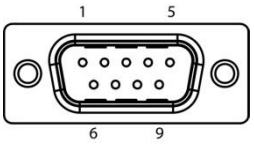
**DVI: DVI-I connector**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | TMDS Data2- | 16 | Hot Plug Detect |
| 2 | TMDS Data2+ | 17 | TMDS Data0- |
| 3 | TMDS Data2/4 Shield | 18 | TMDS Data0+ |
| 4 | TMDS Data4- | 19 | TMDS Data0/5 Shield |
| 5 | TMDS Data4+ | 20 | TMDS Data5- |
| 6 | DDC Clock | 21 | TMDS Data5+ |
| 7 | DDC Data | 22 | TMDS Clock Shield |
| 8 | Analog Vert. Sync | 23 | TMDS Clock+ |
| 9 | TMDS Data1- | 24 | TMDS Clock- |
| 10 | TMDS Data1+ | C1 | Analog Red |
| 11 | TMDS Data1/3 Shield | C2 | Analog Green |
| 12 | TMDS Data3- | C3 | Analog Blue |
| 13 | TMDS Data3+ | C4 | Analog Horiz. Sync |
| 14 | +5V Power | C5 | Analog GND |
| 15 | GND | | |



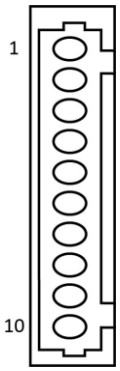
**COM1: RS232/422/485 with +12V/+5V selection**

| Pin | RS-232 | RS-422 | Half Duplex RS-485 |
|---|---|---|---|
| 1 | DCD | TX- | DATA- |
| 2 | RXD | RX+ | NA |
| 3 | TXD | TX+ | DATA+ |
| 4 | DTR | RX- | NA |
| 5 | GND | GND | GND |
| 6 | DSR | NA | NA |
| 7 | RTS | NA | NA |
| 8 | CTS | NA | NA |
| 9 | +5V/+12V/RI | +5V/+12V/NA | +5V/+12V/NA |



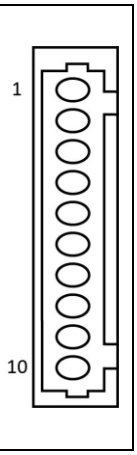

**COM2, COM3, COM4: RS232 with +12V/+5V selection (1x10 pin Wafer)**

| Pin | Definition |
|---|---|
| 1 | +CM_P1 DCD |
| 2 | CM_DSR |
| 3 | CM_RXD |
| 4 | CM_RTS |
| 5 | CM_TXD |
| 6 | CM_CTS |
| 7 | CM_DTR |
| 8 | +CM2_P9 RI |
| 9 | GND |
| 10 | +5VIO |



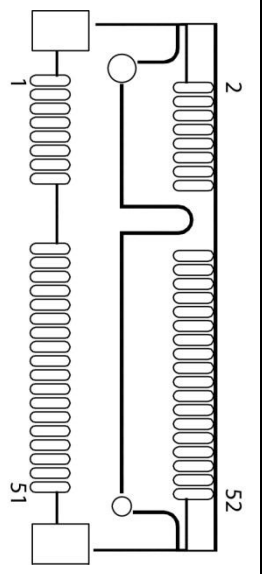

**COM5: RS232**

| Pin | Definition |
|---|---|
| 1 | +CM_P1 DCD |
| 2 | CM_DSR |
| 3 | CM_RXD |
| 4 | CM_RTS |
| 5 | CM_TXD |
| 6 | CM_CTS |
| 7 | CM_DTR |
| 8 | +CM_P9 RI |
| 9 | GND |
| 10 | +5VIO |



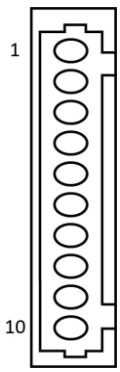
**MPCIE1: Mini PCIE connector**

| Pin | Definition | Pin | Definition |
|---|---|---|---|
| 1 | WAKE# | 2 | +3.3V |
| 3 | Reserved | 4 | GND |
| 5 | Reserved | 6 | +1.5V |
| 7 | CLKREQ# | 8 | Reserved |
| 9 | GND | 10 | Reserved |
| 11 | REF CLK- | 12 | Reserved |
| 13 | REF CLK+ | 14 | Reserved |
| 15 | GND | 16 | Reserved |
| 17 | Reserved | 18 | GND |
| 19 | Reserved | 20 | Reserved |
| 21 | GND | 22 | PERST# |
| 23 | PERN0 | 24 | +3.3VAUX |
| 25 | PERP0 | 26 | GND |
| 27 | GND | 28 | +1.5V |
| 29 | GND | 30 | SMB_CLK |
| 31 | PETN0 | 32 | SMB_DATA |
| 33 | PETP0 | 34 | GND |
| 35 | GND | 36 | USB_D- |
| 37 | Reserved | 38 | USB_D+ |
| 39 | Reserved | 40 | GND |
| 41 | Reserved | 42 | LED_WWAN# |
| 43 | Reserved | 44 | LED_WLAN# |
| 45 | Reserved | 46 | LED_WPAN# |
| 47 | Reserved | 48 | +1.5V |
| 49 | Reserved | 50 | GND |
| 51 | Reserved | 52 | +3.3V |



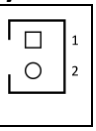

**DEBUG: Debug card connector**

| Pin | Definition |
|---|---|
| 1 | DB_LPC_33M |
| 2 | RST_DB_R# |
| 3 | LFRAME# |
| 4 | LAD3 |
| 5 | LAD2 |
| 6 | LAD1 |
| 7 | LAD0 |
| 8 | +3.3V |
| 9 | GND |
| 10 | GND |



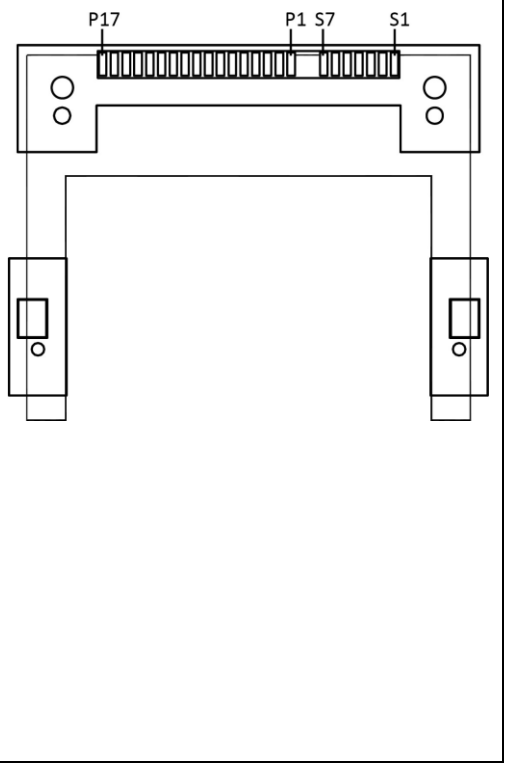

**BAT1: RTC battery connector**

| Pin | Definition |
|---|---|
| 1 | +3V |
| 2 | GND |



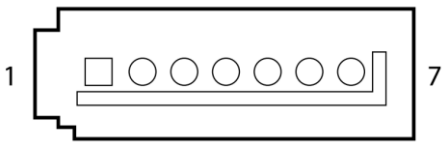
**CFAST: CFAST connector**

| Pin | Segment | Definition |
|---|---|---|
| S1 | SATA | GND |
| S2 | SATA | A+ |
| S3 | SATA | A- |
| S4 | SATA | GND |
| S5 | SATA | B- |
| S6 | SATA | B+ |
| S7 | SATA | GND |
| | Key | |
| | Key | |
| PC1 | PWR/CTL | CDI |
| PC2 | PWR/CTL | GND |
| PC3 | PWR/CTL | TBD1 |
| PC4 | PWR/CTL | TBD2 |
| PC5 | PWR/CTL | TBD3 |
| PC6 | PWR/CTL | TBD4 |
| PC7 | PWR/CTL | GND |
| PC8 | PWR/CTL | LED1 |
| PC9 | PWR/CTL | LED2 |
| PC10 | PWR/CTL | IO1 |
| PC11 | PWR/CTL | IO2 |
| PC12 | PWR/CTL | IO3 |
| PC13 | PWR/CTL | 3.3V |
| PC14 | PWR/CTL | 3.3V |
| PC15 | PWR/CTL | GND |
| PC16 | PWR/CTL | GND |
| PC17 | PWR/CTL | CDO |




**SATA1: Serial ATA 2.0 Connector**

| Pin | Definition |
|---|---|
| 1 | GND |
| 2 | TXP |
| 3 | TXN |
| 4 | GND |
| 5 | RXN |
| 6 | RXP |
| 7 | GND |



# Chapter 3: Getting Started

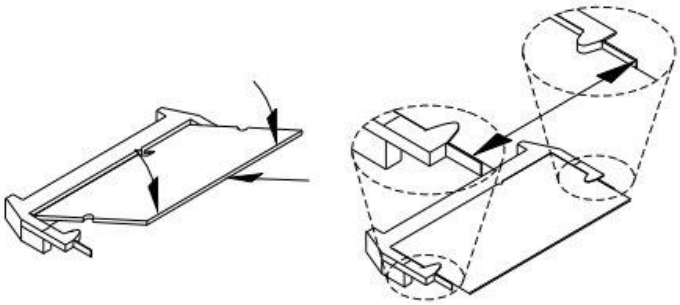
## 3.1 Installing System Memory

The OXY5320A supports DDR3 800/1066 SO-DIMM.

Disconnect all power supplies to the board before installing a memory module to prevent damage to the board and memory module.

To install a memory module:

1. Located the memory module slots on the motherboard.
2. Push the socket retaining clips outward to unlock the slots.
3. Align the memory module with the socket to make sure the notch aligns with the slot key on the socket.
4. Insert the module firmly into the desired slot until the retaining clips lock and secure the memory module.



## 3.2 Installing the CFast card

The OXY5320A built-in CFast socket

To install a CFast card:

1. To install a CFast card into OXY5320A, align the notches on the card with the CFast socket.
2. Then firmly insert the card into the socket until it is completely seated. The label side should be facing away from the board.

# Chapter 4: AMI BIOS UTILITY

This chapter provides users with detailed descriptions on how to set up a basic system configuration through the AMI BIOS setup utility.

## 4.1 Starting

To enter the setup screens, perform the following steps:

- Turn on the computer and press the <Del> key immediately.
- After the <Del> key is pressed, the main BIOS setup menu displays. Other setup screens can be accessed from the main BIOS setup menu, such as the Chipset and Power menus.

## 4.2 Navigation Keys

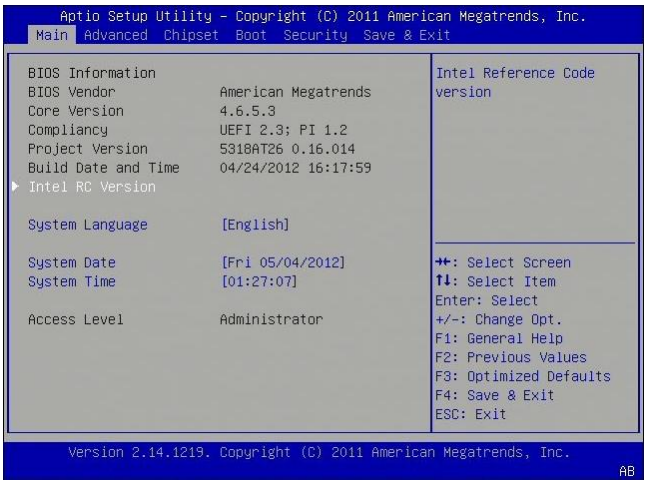
The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process. Some of the hot keys are <F1>, <F10>, <Enter>, <ESC>, and <Arrow> keys.

Some of the navigation keys may differ from one screen to another.

| | |
|---|---|
| Left/Right | The Left and Right <Arrow> keys moves the cursor to select a menu. |
| Up/Down | The Up and Down <Arrow> keys moves the cursor to select a setup screen or sub-screen. |
| +– Plus/Minus | The Plus and Minus <Arrow> keys changes the field value of a particular setup setting. |
| Tab | The <Tab> key selects the setup fields. |
| F1 | The <F1> key displays the General Help screen. |
| F10 | The <F10> key saves any changes made and exits the BIOS setup utility. |
| Esc | The <Esc> key discards any changes made and exits the BIOS setup utility. |
| Enter | The <Enter> key displays a sub-screen or changes a selected or highlighted option in each menu. |

## 4.3 Main Menu

The Main menu is the screen that first displays when BIOS Setup is entered, unless an error has occurred.




You could setup these items on the Main menu:

- System Language: Select this option to set the system language
- System Date: Select this option to set the system date.
- System Time: Select this option to set the system time.

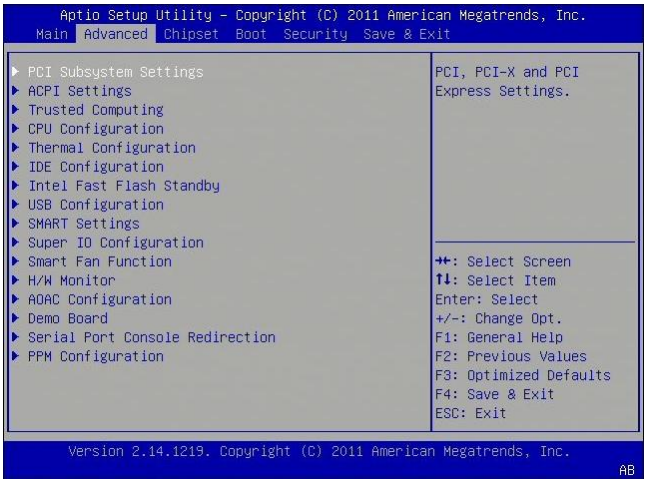
Use the <Arrow> keys to enter the appropriate time and date. Press the <Tab> key or the <Arrow> keys to move between fields. The date setting must be entered in MM/DD/YY format. The time setting is entered in HH:MM:SS format.

**Access Level**

Displays the access level of the current user in the BIOS.

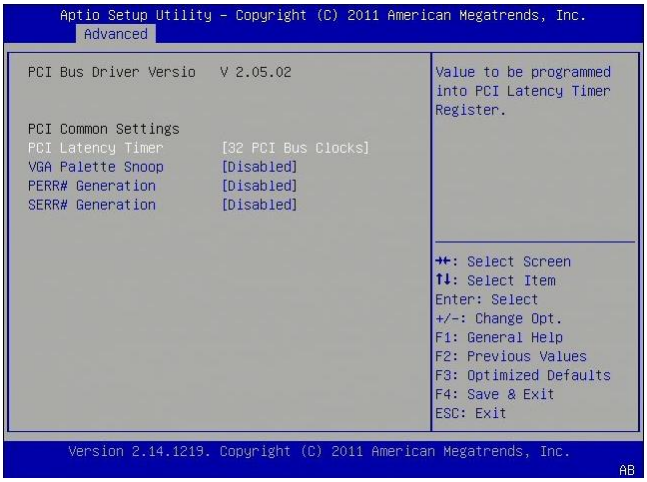
## 4.4 Advanced Menu

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



### 4.4.1 PCI Subsystem Settings

This section allows you to configure the PCI, PCI-X and PCI Express settings.




**PCI Latency Timer**

Set this value to change the PCI Bus clocks. Default is 32 PCI Bus clock

**VGA Palette Snoop**

Set this value to enable or disable the VGA Palette snoop. Default is disable

**PERR# Generation**

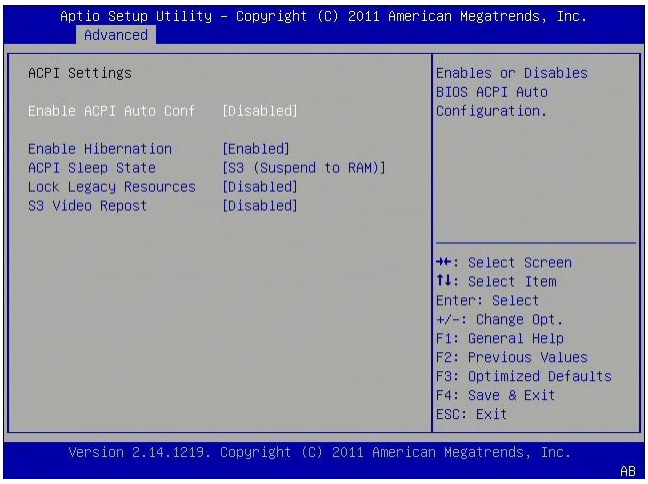
Set this value to enable or disable PERR# generation. Default is disable

**SERR# Generation**

Set this value to enable or disable SERR# generation. Default is disable

### 4.4.2 ACPI Settings

System ACPI Parameters.




**Enable ACPI Auto Config**

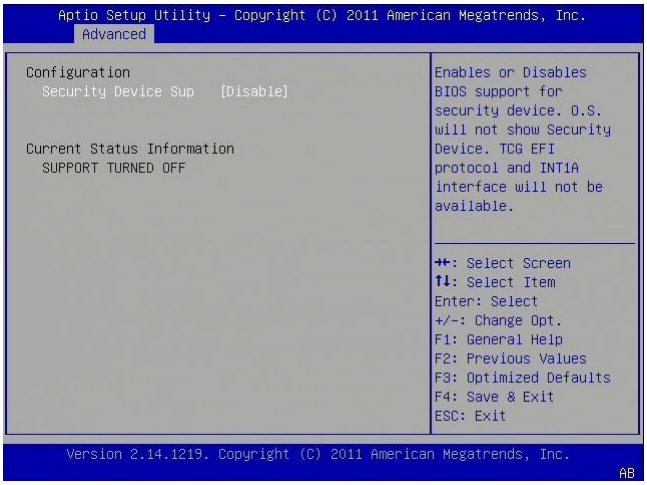
Enable/disable BIOS ACPI Auto Configuration. Default is Disable

**ACPI Sleep State**
Select the highest ACPI sleep state the system will enter when the SUSPEND button is Selected. The Default value is set as S3 (Suspend to RAM).

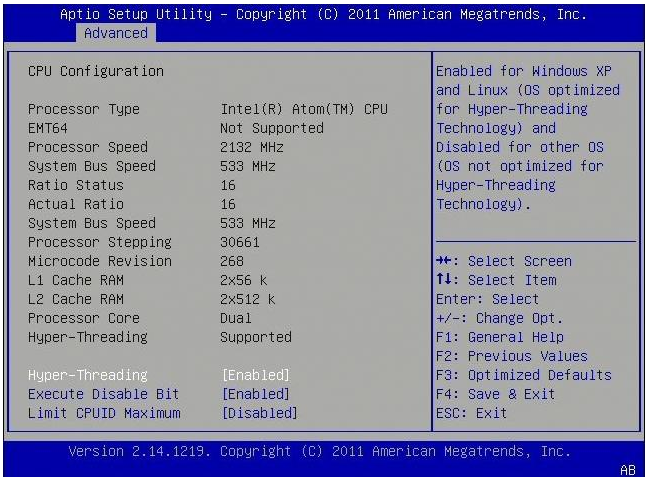
**Lock Legacy Resources**
Enables or Disables System Lock of Legacy Resources.
Options: Disabled (Default) / Enabled

**S3 Video Repost**
Enable or disable S3 Video Repost.
Options: Disabled (Default) / Enabled

### 4.4.3 Trusted Computing
This option allows the user to modify settings related to the optional Trusted Platform Module.




### 4.4.4 CPU Configuration
This option allows the user to view and configure the settings of the CPU installed on the computer system.



**Processor Type**
This option allows the user to view the information of the CPU installed on the hardware platform.

**Processor Speed**
This option allows the user to view the speed of the CPU installed on the hardware platform.

**System Bus Speed**
This option allows the user to view the Front Side Bus (FSB) speed of the CPU.

**Processor Stepping**
This option allows the user to view the stepping information of the CPU.

**L2 Cache RAM**
This option allows the user to view the amount of L2 Cache on the CPU.

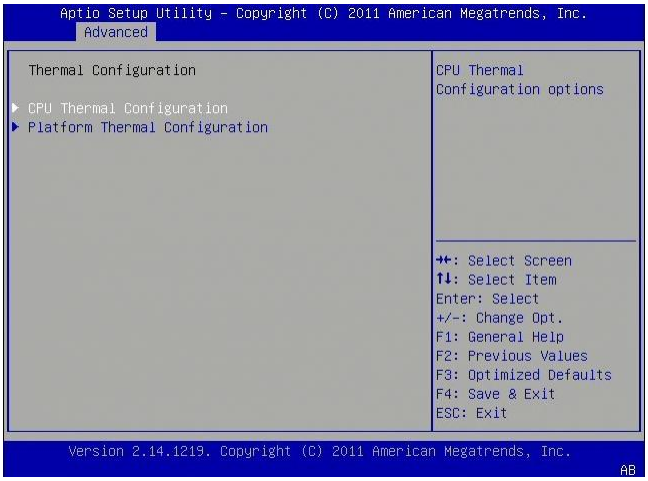
**Hyper-Threading**
This option allows the user to enable or disable the HyperThreading™ support of the Intel® Pentium® 4 HT processor. By default this setting is enabled. This setting should be disabled in Microsoft™ Windows 2000 based systems.

**Execute Disable Bit**
XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)

**Limit CPUID Maximum**
Disabled for Windows XP.

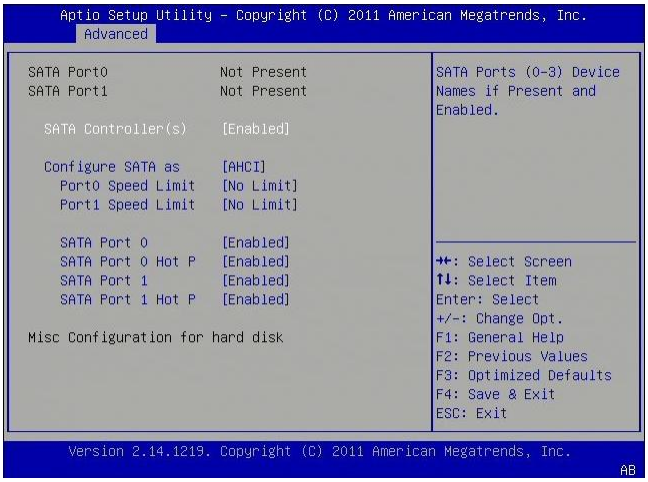
### 4.4.5 Thermal Configuration

This option allows the user to view and configure the settings of the CPU installed on the computer system.



### 4.4.6 IDE Configuration

You can use this option to select options for the IDE Configuration Settings.




**SATA Controller(s)**

This item allows users to enable or disable the SATA controller(s).

**Configure SATA As**

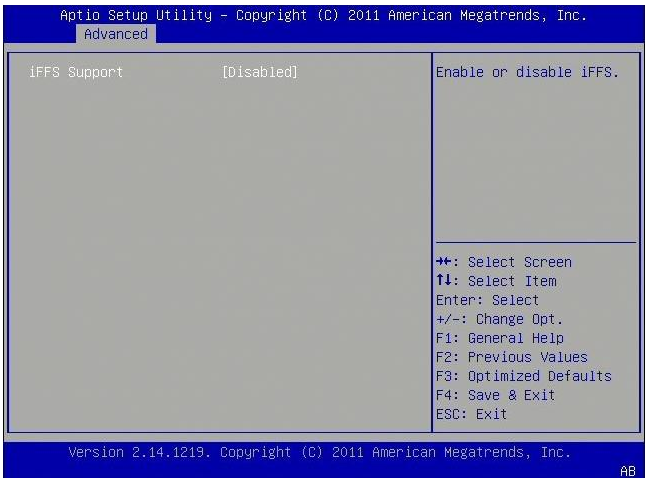
IDE This is option configures the Serial ATA drives as Parallel ATA physical storage device.

RAID This option allows you to create RAID or Intel Matrix Storage configuration on Serial ATA devices.

AHCI This option configures the Serial ATA drives to use AHCI (Advanced Host Controller Interface). AHCI allows the storage driver to enable the advanced Serial ATA features which will increase storage performance.

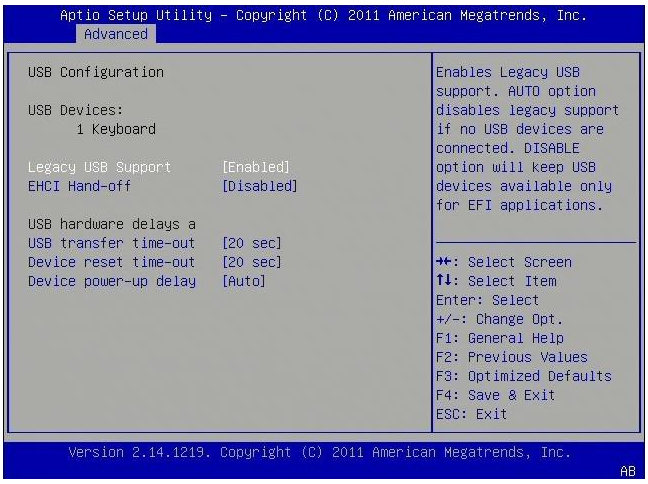
### 4.4.7 Intel Fast Flash Standby

This setting allows the user to enable or disable iFFS



### 4.4.8 USB Configuration

This option allows the user to view and configure the settings of the USB configuration parameters.




**USB Devices**

**Legacy USB Support**

This enables Legacy USB Support, the following tables outlines the different modes of this feature:

| Option | Description |
|---|---|
| Auto | This option disables legacy support if no USB devices are connected |
| Enable | This option will enable Legacy USB support. |
| Disable | This option will keep USB devices available only for EFI applications. |

**Legacy USB Support**

Enable the support for legacy USB. Auto option disables legacy support if no USB devices are connected.

**EHCI Hand-off**

This is a workaround feature for Operating Systems without EHCI hand-off support. The EHCI ownership must be claimed by EHCI Driver.

| Option | Description |
|---|---|
| Enable | This option enables EHCI hand-off support. |
| Disable | This option disables EHCI hand-off support. |

**USB transfer time-out**

Set the time-out value for Control, Bulk, and Interrupt transfers.

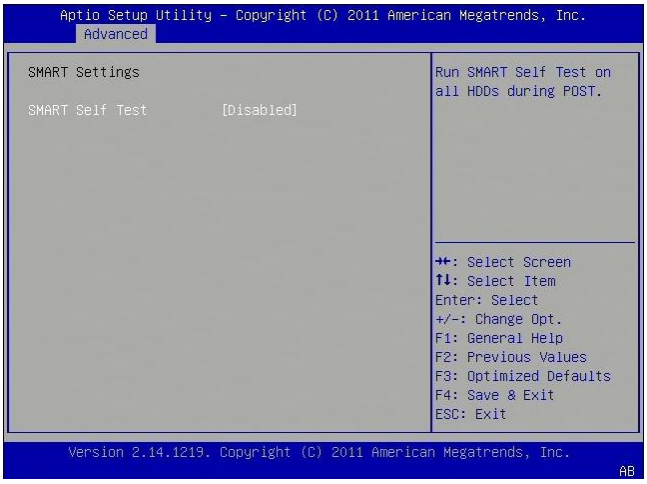
**Device reset time-out**

Set USB mass storage device Start Unit command time-out value.

**Device power-up delay**
Sets the maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses a default value: for a Root port it is 100 ms, for a Hub port the delay is taken from the Hub descriptor.

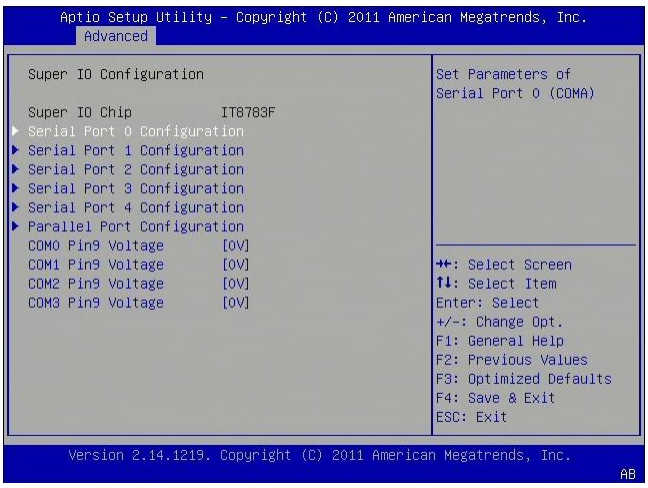
### 4.4.9 SMART Settings

SMART (Self-Monitoring, Analysis and Reporting Technology) is a monitoring system for computer hard disk drives to detect and report on various indicators of reliability, in the hope of anticipating failures. SMART. failure messages might indicate the need to replace the storage device.




### 4.4.10 Super IO Configuration

Set Parameters of Serial Ports. User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device.

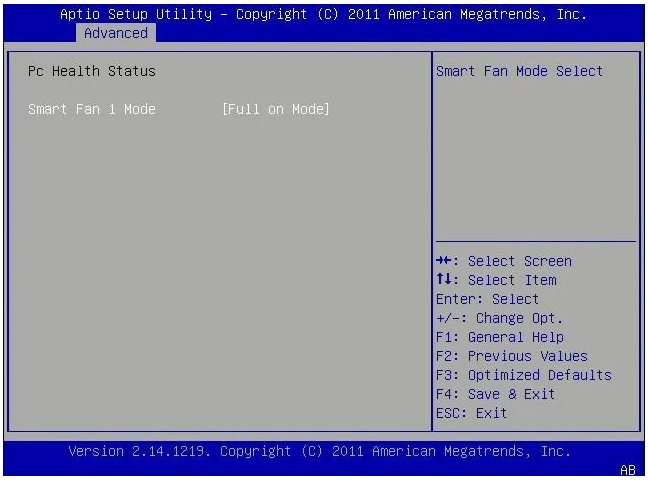



**Serial Port 0-4 Configuration**
Use this item to enable or disable the onboard serial port.

**Parallel Port configuration**
Use this item to enable or disable the onboard parallel port.

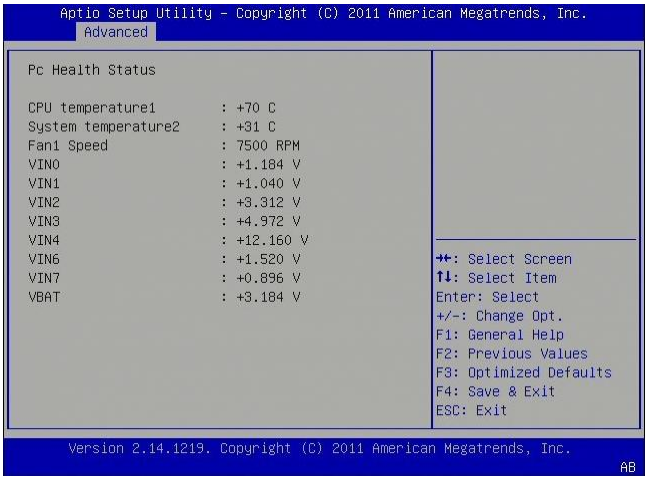
### 4.4.11 Smart Fan Function

Use this feature to control CPU/System Temperature vs. Fan speed. When enabling Smart Fan function, Fan speed is controlled automatically by CPU/System temperature. This function will protect CPU/System from overheat problem and maintain the system temperature at a safe level.




### 4.4.12 H/W Monitor

This section is used to monitor hardware status such as temperature, fan speed and voltages.




**CPU Temperature**

Detects and displays the current CPU temperature.

**System Temperature**

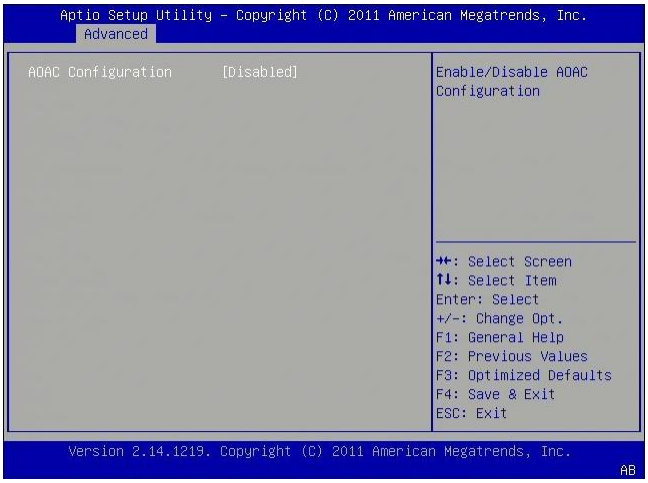
Detects and displays the current system temperature.

**Fan1 Speed**

Detects and displays the current CPU fan speed.

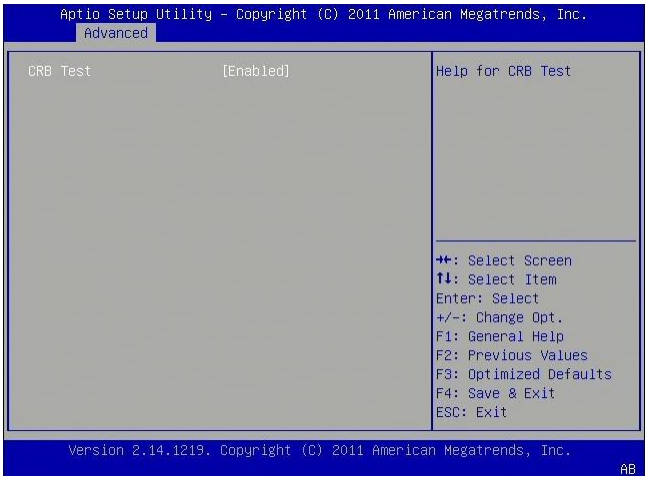
### 4.4.13 AOAC Configuration

This item allows users to enable or disabled AOAC function.



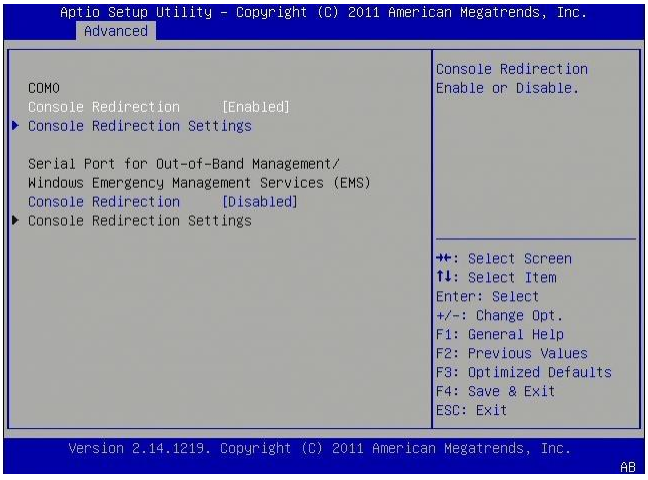

### 4.4.14 Demo Board

This item helps users for CRB test.



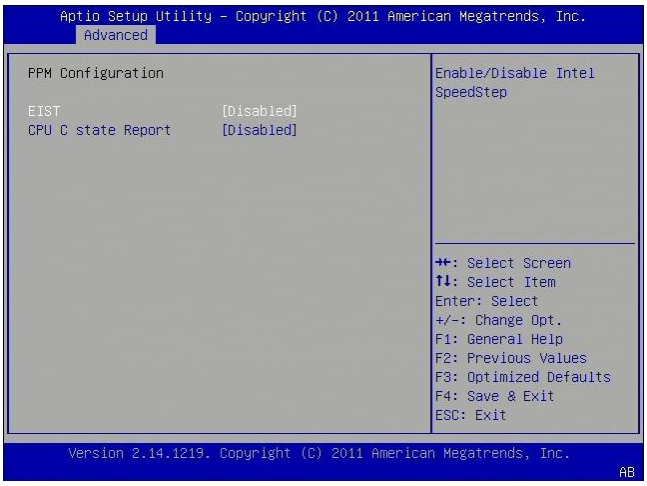

### 4.4.15 Serial Port Console Redirection

This setting allows the user to enable or disable console redirection



**Console Redirection**
Enabling or disabling of the serial port on the module is specified in the Advanced Configuration menu. Available option are: Disabled, Enabled

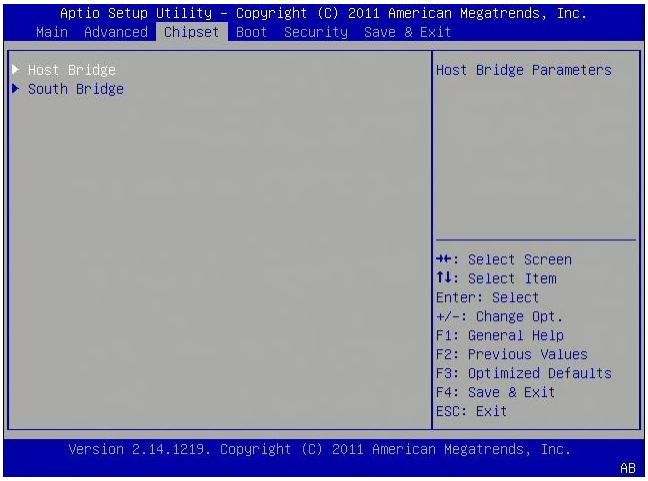
### 4.4.16 PPM Configuration
This item allows users to enable or disabled Intel SppedStep.



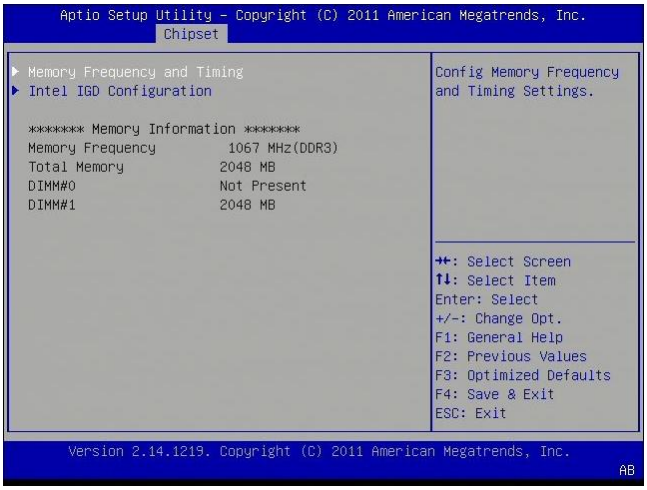

**EIST**
This item allows users to enable or disabled Intel SpeedStep function.

**CPU C state Report**
This item allows users to enable or disabled CPU C state report to OS.

## 4.5 Chipset
This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



**Host Bridge**
This section is used to configure the host bridge features.

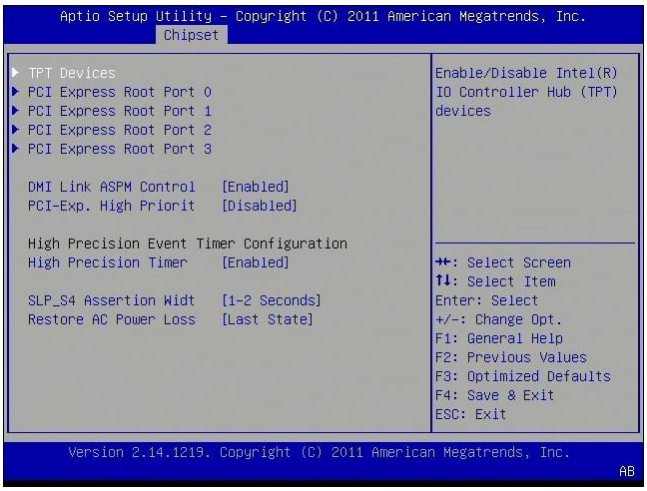



**Memory Frequency and Timing**
Configures memory frequency and timing settings

**Intel IGD Configuration**
Configures the options for Intel IGD function.

**Memory Information**
Detects and displays information on the memory installed in the system.

**South Bridge**
This item shows the South Bridge Parameters.




**High Precision Event Timer Configuration**
Enable or Disable the High Precision Event Timer.

**SLP_S4 Assertion Stretch Enable**
Select a minimum assertion width of the SLP_S4# signal.

**Restore AC Power Loss**

Options are Power Off, Power On and Last State.

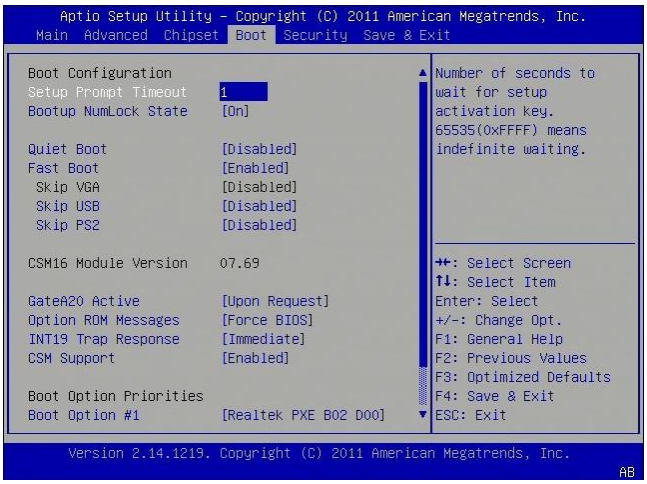
Power Off When power returns after an AC power failure, the system’s power is off. You must press the power button to power-on the system.

Power On When power returns after an AC power failure, the system will automatically power-on.

Last State When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system’s power is off when AC power failure occurs, it will remain off when power returns. If the system’s power is on when AC power failure occurs, the system will power-on when power returns.

## 4.6 Boot Setting

Use this menu option to configure your boot settings




**Setup Prompt Timeout**

Selects the number of seconds to wait for the setup activation key. 65535(0xFFFF) denotes indefinite waiting.

**Bootup NumLock State**

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

**Quiet Boot**

Set this value to allow the boot up screen options to be modified between POST messages or OEM logo.

**Fast Boot**

Enable/Disable faster booting to reduce POST time.[Disabled] performs a complete set of system initialization tasks

**GateA20 Active**
The CPU address bit 20 is controlled by a signal called gateA20. ften gatea20 signal is generated by a peripheral controller (E.g. keyboard Controller) which is a part of the overall system.

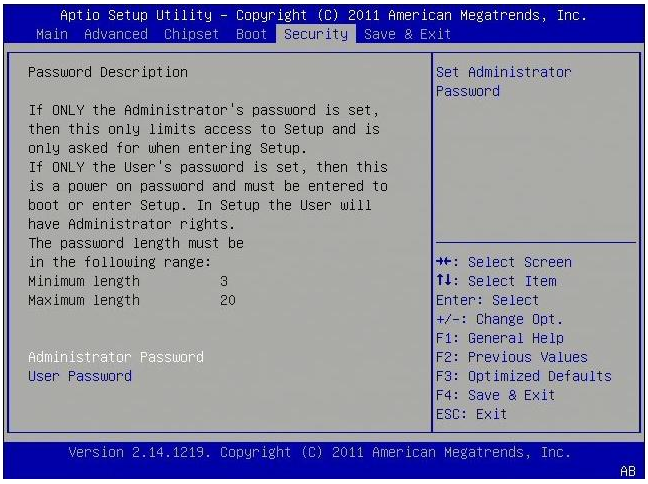
**Optional ROM Messages**
Set display mode for Option ROM. Based on this value it displays the messages from Option ROM

**INT19 Trap Response**
Enable: Allows Option ROMs to trap Int 19.

**Boot Option Priorities**
This option shows the priorities of the boot options. User can change the priorities by selecting the particular boot option. The boot option selected in Boot option #1 will be the first priority, followed by second, third and so on.

## 4.7 Security

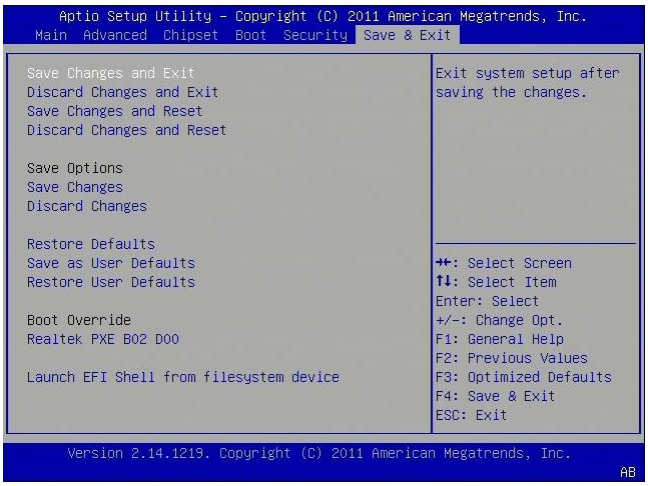
Use the Security Menu to establish system passwords




**Administrator Password**
Select this to reconfigure the administrator’s password.

**User Password**
Select this to reconfigure the user’s password.

## 4.8 Save and exit




**Save Changes and Exit**
Exit system setup after saving the changes.

**Disacard Changes and Exit**
Exit system setup without saving any changes.

**Save Changes and Reset**
Reset the system after saving the changes.

**Discard Changes and Reset**
Reset system setup without saving any changes.

**Save Changes**
Save Changes done so far to any of the setup options.

**Discard Changes**
Discard Changes done so far to any of the setup options.

**Restore Defaults**
Restore/Load Defaults values for all the setup options.

**Save as User Defaults**
Save the changes done so far as User Defaults.

**Restore User Defaults**
Restore the User Defaults to all the setup options.

**Boot Override**
Pressing ENTER causes the system to enter the OS.

**Launch EFI Shell from file system device**
To launch EFI shell from a file system device, select this field and press <Enter>.