



BIS-6330A

Digital Signage Player

USER' Manual V1.0

用户手册

USER' Manual



Industrial & Communication Computer →

做中国最可信赖的工控产品

BIS-6330A

Digital Signage Player

USER' Manual V1.0

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Beijing: 010-82671166

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Wuhan: 027-87858983

Tianjin: 022-23727100

Singapore: 65-68530809

For more product information, please visit www.norco.com.cn

Declaration of conformity



Shenzhen NORCO Intelligent Technology Co.,Ltd.

declares that the product

BIS-6330A Network Digital Signage Platform

(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive)

- | | |
|--|--|
| <input checked="" type="checkbox"/> EN 55022 | Limits and methods of measurements of radio disturbance
Characteristics of information technology equipment |
| <input checked="" type="checkbox"/> EN 50081-1 | Generic emission standard Part 1:
Residential, commercial and light industry |
| <input checked="" type="checkbox"/> EN 50082-1 | Generic immunity standard Part 1:
Residential, commercial and light industry |

European Representative:

Shenzhen NORCO Intelligent Technology Co.,Ltd.

Signature:  _____

Place/Date: HONG KONG/2011

Printed Name: Anders Cheung

Position/Title: President

Declaration of conformity



Trade Name : Shenzhen NORCO Intelligent Technology Co.,Ltd.

Model Name : BIS-6330A

Responsible Party : Shenzhen NORCO Intelligent Technology Co., Ltd.


Equipment Classification : FCC Class B Subassembly

Type of Product : BIS-6330A Network Digital Signage Platform

Manufacturer : Shenzhen NORCO Intelligent Technology Co.,Ltd.

Supplementary Information:

This device complies with Part 15 of the 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.

Signature: 

Date: 2011

Disclaimer

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Safety Instructions

1. Please read this manual carefully before using the product.
2. To prevent electronic shock hazard or any damage to the product, please ensure that all power cables for the devices are unplugged when adding or removing devices or reconfiguring the system.
3. To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
4. When adding or removing devices to or from the system, ensure that all the power cables for the devices are unplugged in advance.
5. To prevent any unnecessary damage to the products due to frequent power on/off, please wait at least 30 seconds to restart the unit after the shutdown.
6. Use cross screwdriver to operate the device. Magnetic screwdriver would be better to avoid leaving any screws inside the case. Do not leave any tools or screws inside the case.
7. Keep the system good cooling or ventilation.
8. If system goes wrong during the operation, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

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Packing List

Thanks for purchasing NORCO products. Please check the accessories as per the packing list when you open its package. If you find any defect components or anything damaged or lost, please contact your vendor ASAP.

■BIS-6330A	1 Unit
■Drivers and Utilities	1 pcs
■Screws	4pcs



Chapter 1. Product Introduction

Chapter 1 Product Introduction

1.1 Overview

Taking advantage of Intel's new OPS standard, the BIS-6330A combines compact size and cutting-edge Technology to provide for greater scalability for digital signage applications.

The BIS-6330A Intel 2nd/3rd Generation Core i3/i5 capable OPS module is built to last under dusty extreme temperature environments with a rugged fully-enclosed solid state design. In addition, the system pushes for eco-friendliness with low power consumption. The draw-out type module design enables easy data upgrading. This embedded OPS module is rich with I/O's including two USB 2.0, one Gigabit Ethernet, Two HDMI video with up to 1920x1200 resolution, expandability of 1x SATA I/II/III drives and one Mini PCIe / one PCIe for antennas for wireless communication. The BIS-6330A hopes to bring functional as well as environmentally conscious solutions to the embedded market.

This eco-friendly and cost effective digital signage solution can be deployed in most venues such as restaurants, hotels, vehicles, flights, hospital, shopping mall, cinema, museum, etc.

1.2 Specifications

Processor

- CPU: Ivy Bridge Gen3 /Sandy Bridge Gen2 i3/i5

Chipset

- Chipset: HM76 Mobile

System Memory

- System Memory: 1x single channel SO-DIMM slot supports DDRIII 1066/1333/1600MHZ, up to 4GB. Non-ECC.

Display

- Display Interface: 2x HDMI, 1x Display Port
- HDMI: Maximum resolution: 1920x1200@60Hz, one is extended via OPS and one on the rear panel.
- Display Port: Maximum resolution: 2560x1600@60HZ

Ethernet

- LAN Controller: PCIe LAN chip: RTL8111E
- Rate: 10/100/1000Mbps
- Support Wake-on-LAN (WOL)

Storage

- Provide one 7+15 Pin SATA port
- Support SATAI/SATAII/SATAIII

AUDIO

- Adopt ALC887 audio controller chip; OPS connector supports Side Surround output. Rear panel supports dual channel stereo output.
- Interface: Provide two single-jack sockets: MIC-in (pink); Speak-out (green)

I/O

- I/O Chip: W82627DHG
- Serial Port: OPS connector provides COM1 supporting RS232 mode.

USB

- Rear panel provides one double-layer USB3.0 socket. OPS connector provides 2x USB2.0, 1x USB3.0

Expansion Interface

- 1x standard mini PCIe supports WiFi module

OPS Connector

- Standard OPS connector: including 1x HDMI, 1x Display Port, 1x COM, 2x USB2.0, 1x USB3.0.

Power Supply

- Power supplied via OPS Interface
- Support 12V~19V power input

Watchdog

- Trigger system reset when the timer overflows

BIOS

- BIOS: 8MB SPI FLASH, AMI EFI BIOS

OS

- Support WIN XP, WIN7, WIN8
- Support WIN XPE, WIN7E
- Support LINUX

Operating Environment

- Operating Temperature: 0℃~40℃
- Storage Temperature: -20~80℃
- Operating Humidity: 5%~95%, non-condensing

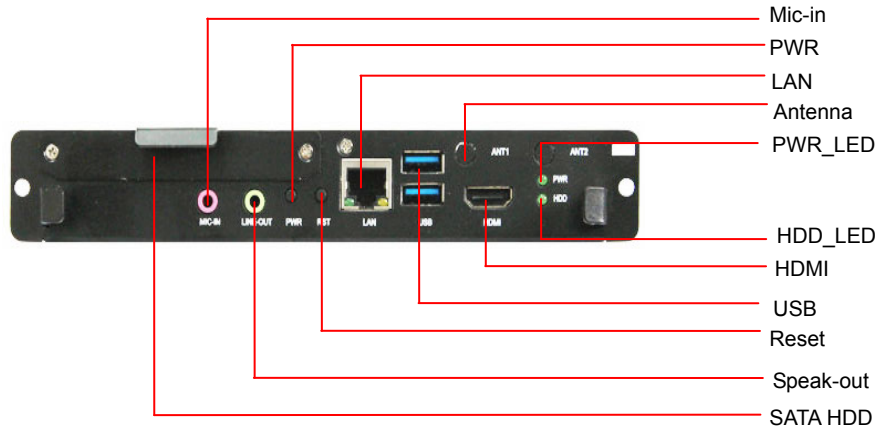


Chapter 2. Product Features

Chapter 2 Product Features

2.1 External Interfaces Location

1: BIS-6330A Front View



2: BIS-6330A Rear View



2.2 Front Panel I/O

2.2.1 Audio (Speak-out, Mic-in)

BIS-6330A adopts ALC887 audio controller chip. The green one is Speak-out; the pink one is the Mic-in.

2.2.2 LED

PWR_LED is on the upper layer. The LED beneath is the HDD_LED.

2.2.3 USB3.0 (USB1/2)

BIS-6330A provides 2x USB3.0, compatible with USB2.0, PnP support.

Pin	Signal Name
1	VCC_USB1
2	USBD_N0
3	USBD_P0
4	GND
5	USB3_RX1_R_DN
6	USB3_RX1_R_DP
7	GND
8	USB3_TX1_R_DN
9	USB3_TX1_R_DP
10	VCC_USB1
11	USBD_N1
12	USBD_P1
13	GND
14	USB3_RX2_R_DN
15	USB3_RX2_R_DP
16	GND
17	USB3_TX2_R_DN
18	USB3_TX2_R_DP

2.2.4 Ethernet (LAN)

BIS-6330A provides 1x RJ-45 Gigabit Ethernet LAN Port with its pins defined as below. LILED & ACTLED are the green LED and Yellow LED on both sides of the port, indicating the status of the LAN port.

RJ45 LAN LED Status:

LILED (GREEN)	Function	ACTLED (YELLOW)	Function
Flash	Effective link	On	Data transfer
Off	Non-effective link/Close	Off	No data

2.2.5 HDMI

BIS-6330A provides 1x HDMI port to transfer uncompressed audio signal and HD video signal

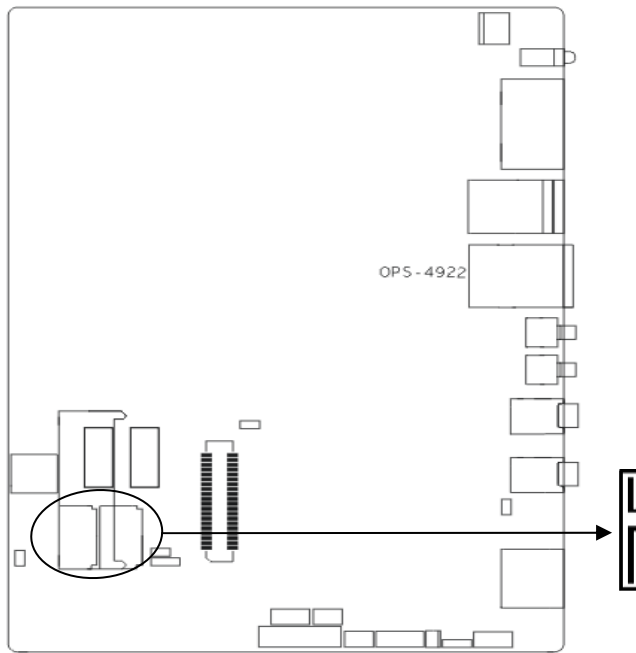
and no analog to digital / digital to analog conversion before transferring signal, securing high quality signal transfer. HDMI supports 1x 1080P video signal and 1x 8CH audio signal.

Signal Name	Pin		Signal Name
D2+	1	2	D2 Shield
D2-	3	4	D1+
D1 Shield	5	6	D1-
D0+	7	8	D0 Shield
D0-	9	10	CK+
CK Shield	11	12	CK-
CE Remote	13	14	NC
DDC CLK	15	16	DDC DATA
GND	17	18	+5V
HP DET	19	20	SHELL0
SHELL1	21	22	SHELL2
SHELL3	23	24	SHELL4
SHELL5	25	26	SHELL6
SHELL7	27	28	SHELL8
SHELL9	29	30	SHELL10
SHELL11	31		

2.3 Inner Interfaces

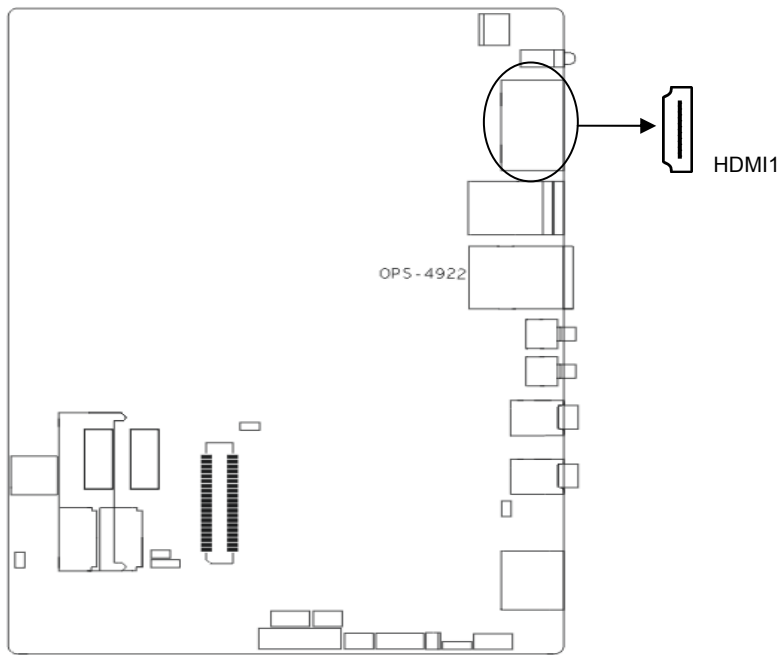
2.3.1 SATA Port (SATA1)

System provides one standard 7+15Pin SATA Port.

**SATA1:**

Pin	Signal Name	Pin	Signal Name
1	GND	P4	GND
2	TX+	P5	GND
3	TX-	P6	GND
4	GND	P7	VCC
5	RX-	P8	VCC
6	RX+	P9	VCC
7	GND	P10	GND
8	NC	P11	GND
9	GND	P12	GND
10	NC	P13	+12V
P1	VCC3	P14	+12V
P2	VCC3	P15	+12V
P3	VCC3		

2.3.2 Display Interface (HDMI1, Display Port)



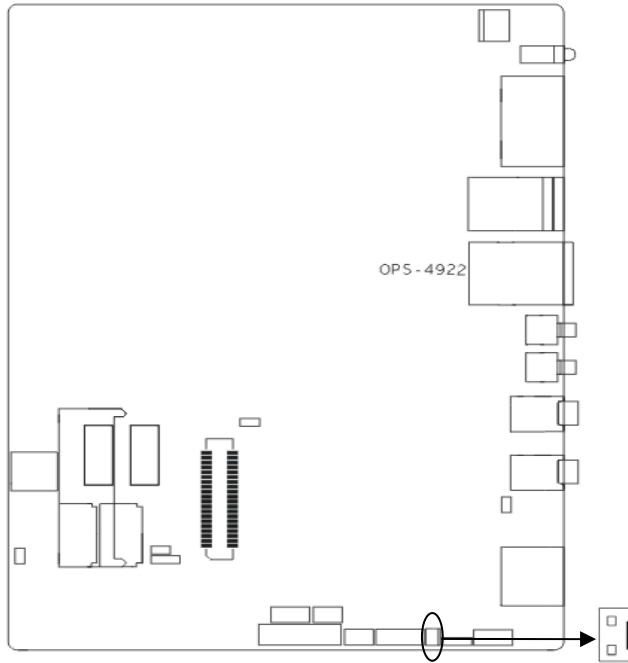
HDMI1:

Signal Name	Pin		Signal Name
D2+	1	2	D2 Shield
D2-	3	4	D1+
D1 Shield	5	6	D1-
D0+	7	8	D0 Shield
D0-	9	10	CK+
CK Shield	11	12	CK-
CE Remote	13	14	NC
DDC CLK	15	16	DDC DATA
GND	17	18	+5V
HP DET	19	20	SHELL0
SHELL1	21	22	SHELL2
SHELL3	23	24	SHELL4

SHELL5	25	26	SHELL6
SHELL7	27	28	SHELL8
SHELL9	29	30	SHELL10
SHELL11	31		

HDMI2, Display Port is provided via OPS connector

2.3.3 JBAT



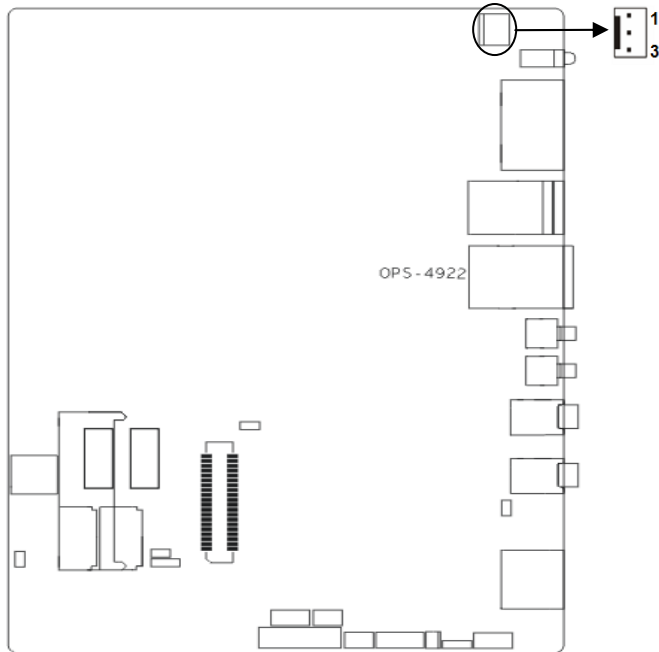
JBAT:

Pin	Signal Name
1	BAT+
2	GND

2.3.4 FAN Interface (CPUFAN)

Board provides one 3Pin CPU FAN interface. Please pay attention to following two points when using this interface:

- (1) The electric current of the FAN should ≤ 350 mA (4.2W, 12V) .
- (2) Please confirm the FAN cable matches the socket cable.



CPUFAN:

Pin	Signal Name
1	GND
2	+12V
3	Speed detect

2.5.5 MINI PCIe (MINI PCIe)

Board provides 1x MINI PCIe slot. Users can use it to expand Mini PCIe devices as per actual needs, such as Wi-Fi.

2.3.6 Serial Port (COM1)

OPS connector provides one COM1 supporting RS232 transmission mode.



Chapter 3. Installation Instructions

Chapter 3 Installation Instructions

Before installing your computer accessories, please keep the following two points in mind:

1. Please make sure that your computer does not connect to power supply .
2. Please wear anti-static wristband/gloves when touching integrated circuit components (e.g. RAM, etc).

3.1 Jumper Setting

Please refer to the following jumper setting guide before installing your hardware devices.

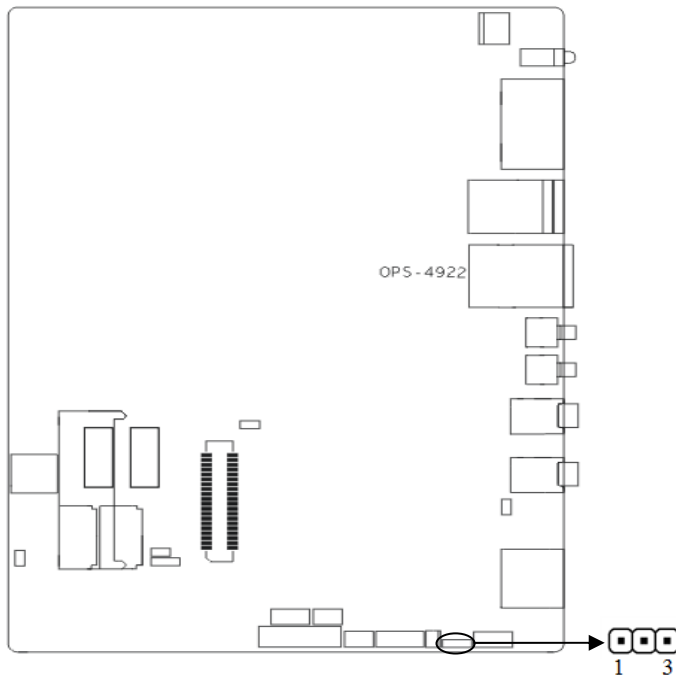
Remark: How to identify PIN1 of jumper and interface: Please observe the word mark of plug socket, it will use "1" or bold line or triangular symbols; and please look at the back of PCB. Each interface weld spot has a square point, that is PIN 1; and PIN1 of all the jumpers has a white arrow beside it..

3.1.1 CMOS Content Clear/ Hold Jumper Setting (JCC)

CMOS powered by onboard button battery. Clear CMOS will lead to a permanent elimination of the previous system setting and back to the original (default setting) system setting.


Steps :

- (1) Turn off the computer, disconnect the power supply
- (2) Use jumper cap short JCC Pin 1 and Pin 2 for 5~6 sec, Then restore the default setting of Pin2 and Pin 3
- (3) Turn on the computer, then press F1 key into the BIOS setting and reload the optimized default value.
- (4) Save and exit setting.

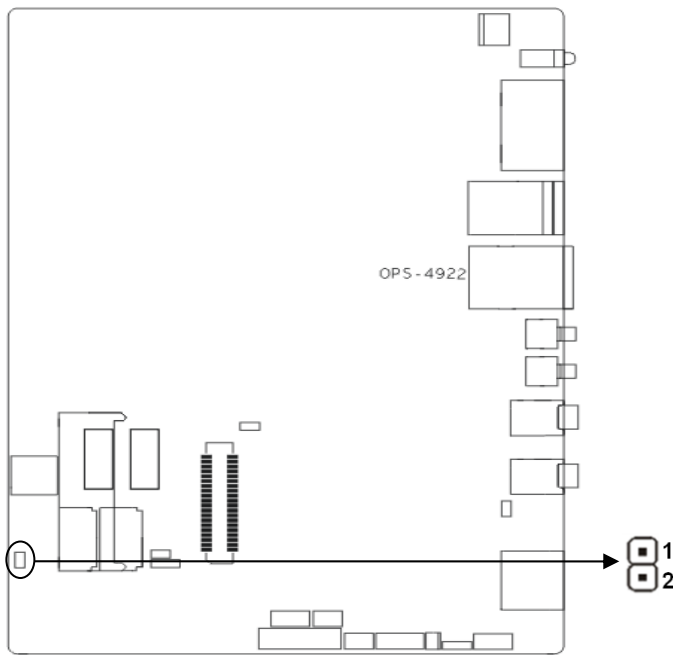


JCC:

Setting	JCC
1-2	Clear CMOS(BIOS renew to initialization)
2-3	Nomal status(default)

 Please do not clear CMOS when system startup in case of damage to the motherboard.

3.1.2 Pins for System Auto Boot upon restore AC power (JAT)



JAT:

Setting	JAT
Open	Non-auto boot
Close	Auto boot

3.2 Install Memory

BIS-6330A provides 1x 204Pin DDRIII SO-DIMM slot supporting DDRIII 1066/1333/1600 MHz RAM up to 4GB. Users can select 512MB to 4GB memory bank for this system. Please follow the steps below to install the memory module:

1. Turn off the power supply and disconnect the power cable.
2. Use screw driver to unscrew the screws on front panel and the base panel, and dismount the chassis cover.
3. Align the connecting finger of the memory bank with the memory slot and the notch of the

connecting finger should be aligned with the socket bulging mark.

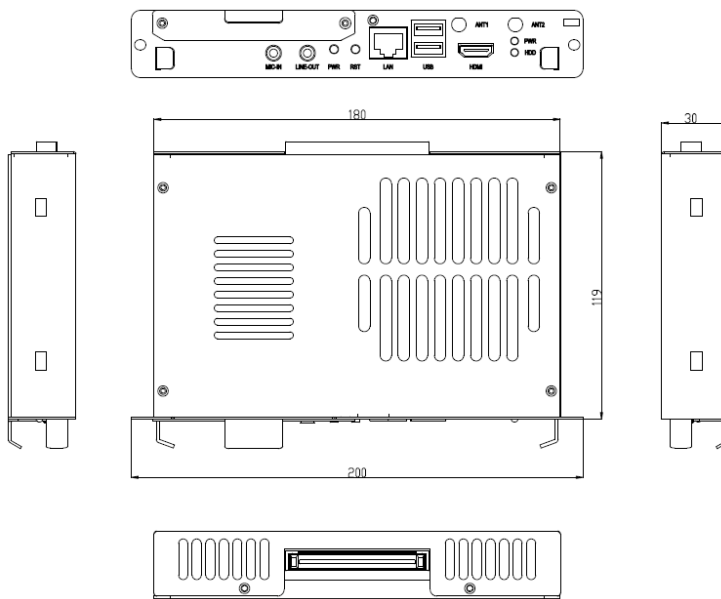
4. Finally press the memory bank into the slot softly until the memory bank fit into the slot.

3.3 Install HDD

System provides 1x 2.5" SATA HDD. Please follow the steps below to install the HDD:

1. Power off
2. Use screw driver to detach the drive bay and unscrew the screws on the front panel.
3. Detach the 2.5" HDD bay
4. Select 2.5" Hard Disk and fix the Hard disk on the Drive bay
5. Install the HDD bay back into the chassis.

3.4 Product Dimension Diagram





Chapter 4. BIOS SETUP

Chapter 4 BIOS SETUP

AMI BIOS Flash

BIOS functions as a bridge connecting hardware and operating system. Hardware and software are upgrading all the time, so when your system goes wrong, for example, your system can not support the newest CPU, you need to upgrade BIOS to keep up with the latest technology.

AFUEFI.EXE is the FLASH IC program for BIOS to upgrade, which needs to be run in DOS mode.

Please use a boot disk to load DOS, then run AFUEFI.EXE to upgrade BIOS (for example: write XXXX.ROM into FLASH IC)

Specific Command: C:\AFUEFI ****.rom /P /B /N /X or C:\FPT -F ****.BIN –BIOS

If you need to add other parameters after the order format, please add <space>/?

Remark:

1. BIOS upgrading is only executed when it is necessary.
2. Please use the BIOS SETUP Utility in the CD-ROM provided by us or downloads the latest version on related websites.
3. Please do not power off or reboot the system during BIOS upgrading, otherwise, the BIOS maybe be damaged or system may not be able to boot again.
4. After BIOS flash, please manually Load Default to optimize BIOS settings.
5. Please backup your BIOS in advance.

AMI BIOS Description

When the computer is power on, BIOS will conduct self-diagnosis to its hardware on motherboard and configure hardware parameter; finally the operating system will take control. BIOS is the communication bridge between hardware and O/S. Correct configuration of BIOS is critical for maintaining system stability and its optimized performance.

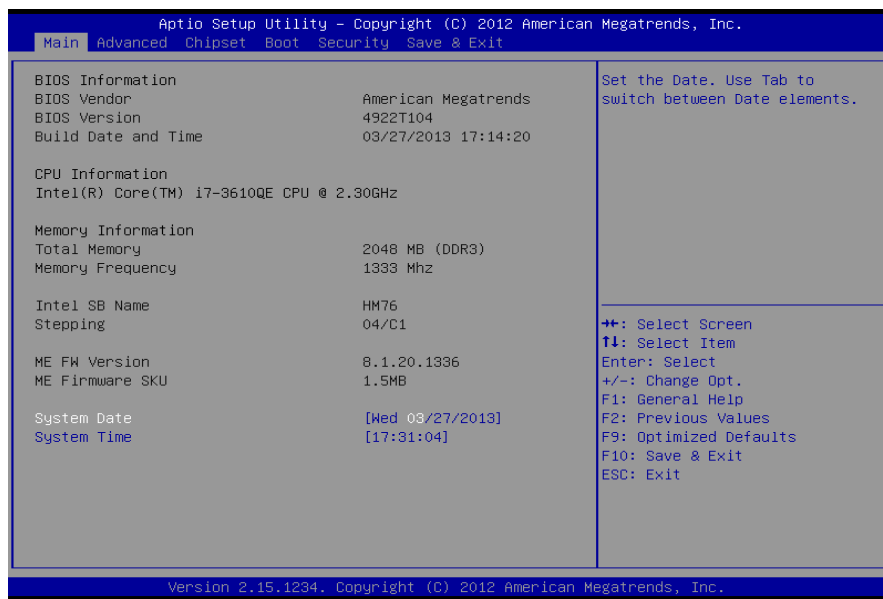
BIOS Settings

1. Power on or reboot the computer, self-detection information will show:
2. When message shows as "Press to enter setup", pls press , then enter into BIOS SETUP Program.

3. Use the “←↑→↓”to choose the option which your want to modify, press <Enter> to the sub-menu.
4. Use the “←↑→↓”and <Enter> to modify the value; press”Enter” to modify BIOS options that you choose.
5. At any time, press<Esc> can go back to the father-menu.

Remark: BIOS settings have direct impacts to computer performance. Incorrect configurations will cause damage to the computer and even lead to system halted. Please use BIOS default settings to recovery system. As our company is always ceaselessly update the BIOS SETUP Utility, so, following BIOS SETUP screens are only for your reference. Some may be different from the BIOS you are using now.

3.1 Main Menu



BIOS Vendor : BIOS vendor: American Megatrends

Project Version : BIOS Version: 4922T104

Build Date and Time : BIOS Date: 03/27/2013 17:14:20

CPU Information: supplier, model, information, etc.

Memory Information: Memory size and frequency

Intel SB Name : Southbridge Model

Stepping : Southbridge stepping information

ME FW Version : ME Firmware version

ME Firmware SKU : ME Firmware SKU

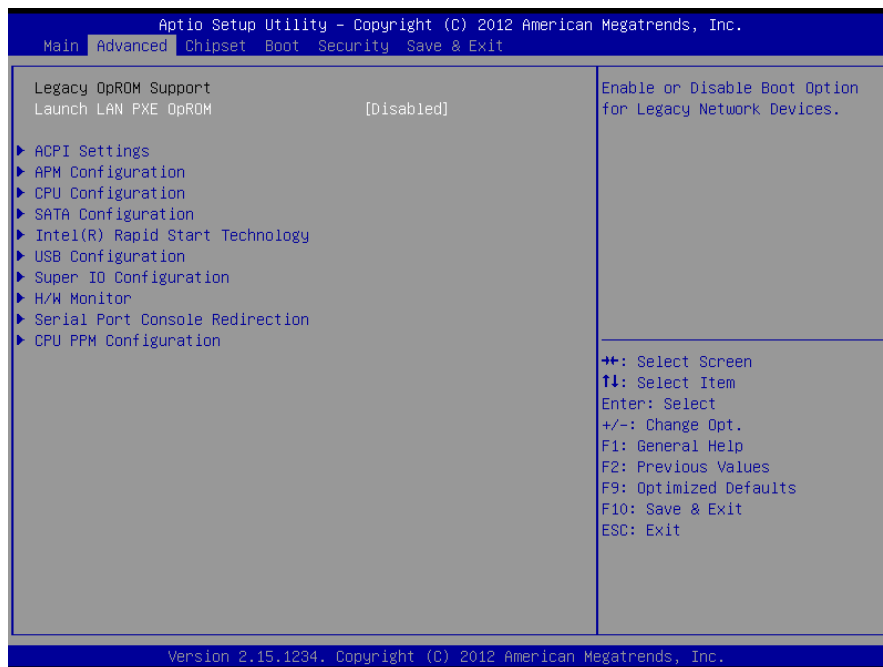
System Date

System Date Format: Month/ (Jan.-Dec.) Date/ (01-31) Year/ (up to 2099) Week/ (Mon.~Sun.)

System Time

System Time Format: Hour/ (00-23) Minute/(00-59) Second/(00-59)

3.2 Advanced



Launch LAN PXE OpROM

Enable or disable boot option for legacy network device.

ACPI Settings

Setup system in deepest sleep mode S1/ S3

APM Configuration

Set RTC parameters

CPU Configuration

CPU parameters and options configuration

SATA Configuration

SATA Mode and Information Setting

Intel(R) Rapid Start Technology

Intel (R) Rapid Start Technology is developed by Intel Corporation and is newly added to Intel 7 series CPU. Intel Rapid Start Technology enables your system to get up and running faster from even the deepest sleep within 5-8 seconds and continue with the work before entering the sleep status, saving time and power consumption. This technology offers users the following benefits:

1. High Security ----System will finally enter the S4 sleep mode. The data is stored in HDD. So even the system is power down, the stored data won't be lost.
2. Fast Wakeup ---- only need 5-8 seconds to wake up from sleep mode, twice as fast as that of 20 seconds from the traditional sleep mode.
3. Low Power Consumption ----The power consumption is almost at 0 when system is in sleep mode.

TO run this technology, you need the following:

1. Intel 7 series chipset based Motherboard
2. Board ACPI of (S3) mode. HDD: AHCI/RAID
3. Motherboard with SSD
4. Install Intel Rapid Start Technology Driver
5. Install Windows 7 or higher level OS

USB Configuration

USB information and control options

Super IO Configuration

Super IO configuration, including COM port IRQ and Address

H/W Monitor

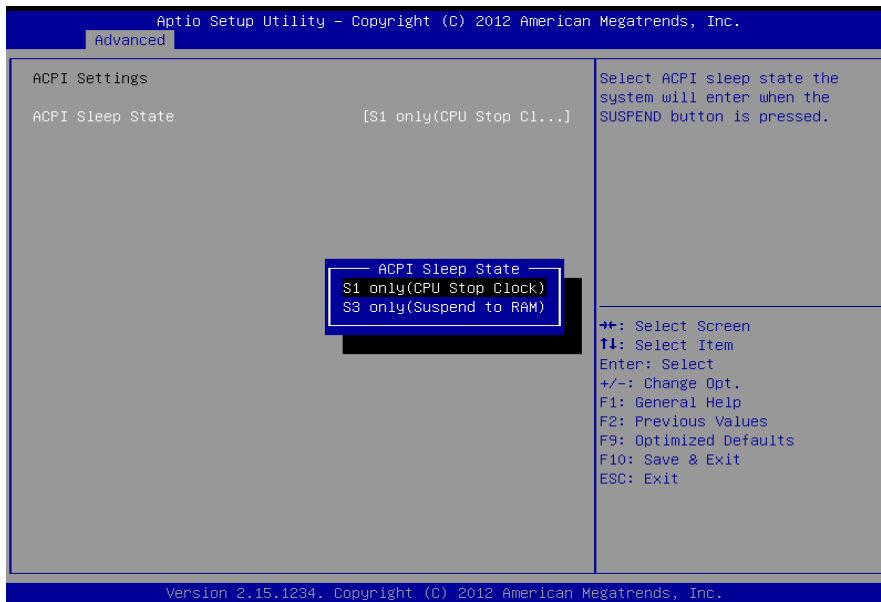
Hardware voltage monitoring

Serial Port Console Redirection

Serial Port Console Redirection setting

CPU PPM Configuration

CPU Power Management Configuration

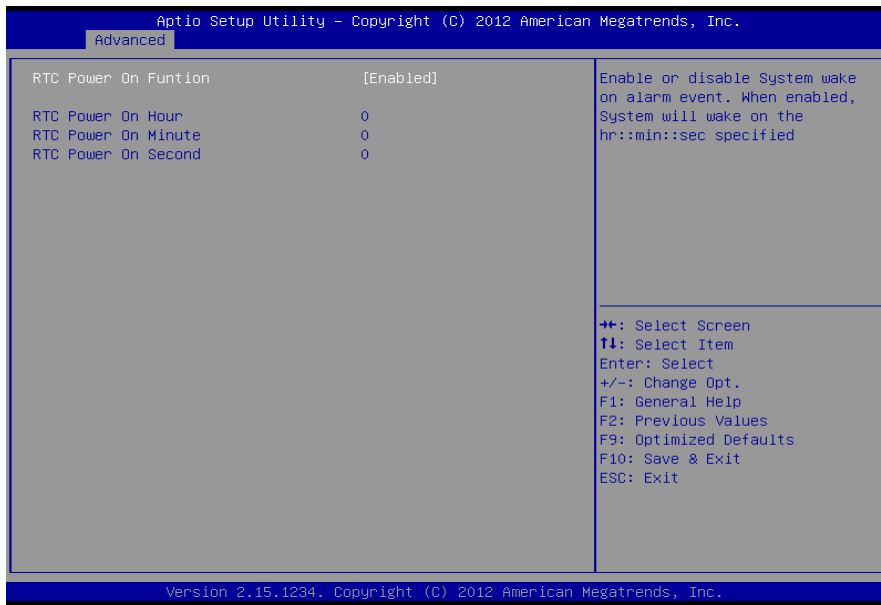
3.2.1 ACPI Configuration**ACPI Sleep State**

Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

S1 (POS): CPU stops working while other devices are still connected to power supply.

S3 (STR): Power is only supplied to system memory.

3.2.2 APM Configuration



RTC Power On Function

Enable or disable the RTC Power On Function.

RTC Power On Hour

To setup RTC Power On Hour.

RTC Power On Minute

Setup RTC Power On Minute.

RTC Power On Second

Setup RTC Power On Second.

3.2.3 CPU Configuration

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Advanced

CPU Configuration		Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.
Intel(R) Core(TM) i7-3610QE CPU @ 2.30GHz		
CPU Signature	306a8	
Microcode Patch	10	
Max CPU Speed	2300 MHz	
Min CPU Speed	1200 MHz	
CPU Speed	2300 MHz	
Processor Cores	4	
Intel HT Technology	Supported	
Intel VT-x Technology	Supported	
Intel SMX Technology	Supported	
64-bit	Supported	
L1 Data Cache	32 kB x 4	
L1 Code Cache	32 kB x 4	
L2 Cache	256 kB x 4	
L3 Cache	6144 kB	
Hyper-threading	[Enabled]	
Active Processor Cores	[All]	
Limit CPUID Maximum	[Disabled]	
Execute Disable Bit	[Enabled]	
Intel Virtualization Technology	[Disabled]	
Hardware Prefetcher	[Enabled]	

++: Select Screen
 F1: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F9: Optimized Defaults
 F10: Save & Exit
 ESC: Exit

Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Advanced

Microcode Patch	10	The Maximum instantaneous current allow for Secondary Plane
Max CPU Speed	2300 MHz	
Min CPU Speed	1200 MHz	
CPU Speed	2300 MHz	
Processor Cores	4	
Intel HT Technology	Supported	
Intel VT-x Technology	Supported	
Intel SMX Technology	Supported	
64-bit	Supported	
L1 Data Cache	32 kB x 4	
L1 Code Cache	32 kB x 4	
L2 Cache	256 kB x 4	
L3 Cache	6144 kB	
Hyper-threading	[Enabled]	
Active Processor Cores	[All]	
Limit CPUID Maximum	[Disabled]	
Execute Disable Bit	[Enabled]	
Intel Virtualization Technology	[Disabled]	
Hardware Prefetcher	[Enabled]	
Adjacent Cache Line Prefetch	[Enabled]	
TCC Activation offset	0	
Primary Plane Current value	0	
Secondary Plane Current value	0	

++: Select Screen
 F1: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F9: Optimized Defaults
 F10: Save & Exit
 ESC: Exit

Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.

The read only options contain the detailed information of CPU, including CPU supplier, model, frequency, Level1 Cache, Level2 Cache, etc.

Hyper-Threading

Enable or disable CPU Hyper-Threading Technology.

Active Processor Cores

Activate Processor Cores (only when the processor has multiple cores)

Limit CPUID Maximum

Please set this item as [Enabled] if the system OS doesn't support the extended CPUID function.

Execute Disabled Bit

Execute Disable Bit (EDB) is a hardware-based security feature that introduced to its new generation CPU by Intel, which can help reduce system exposure to viruses and malicious code. EDB allows the processor to classify areas in memory where application code can or cannot execute. To use Execute Disable Bit you must have Windows XP SP2 operating system to support this function. System default this option [Enabled].

Intel Virtualization Technology

Intel virtualization technology enables to run multiple O/S of the same kind or different kind by using the same physical platform so as to realize the management and allocation of computer resources, maximizing the resource utilization.

Hardware Prefetcher

The hardware prefetcher operates transparently, without programmer intervention, to fetch streams of data and instruction from memory into the unified second-level cache. The prefetcher is capable of handling multiple streams in either the forward or backward direction. Enable or disable this function.

Adjacent Cache Line Prefetch

The Adjacent Cache-Line Prefetch mechanism, like automatic hardware prefetch, operates

without programmer intervention. When enabled through the BIOS, two 64-byte cache lines are fetched into a 128-byte sector, regardless of whether the additional cache line has been requested or not. In applications with relatively poor spatial locality, the cache miss ratio is higher. Enable or disable this function.

TCC Active Offset

Thermal Control Circuit: Thermal monitor uses the TCC to reduce the die temperature by using clock modulation and/or operating frequency and input voltage adjustment when the die temperature is very near its operating limits.

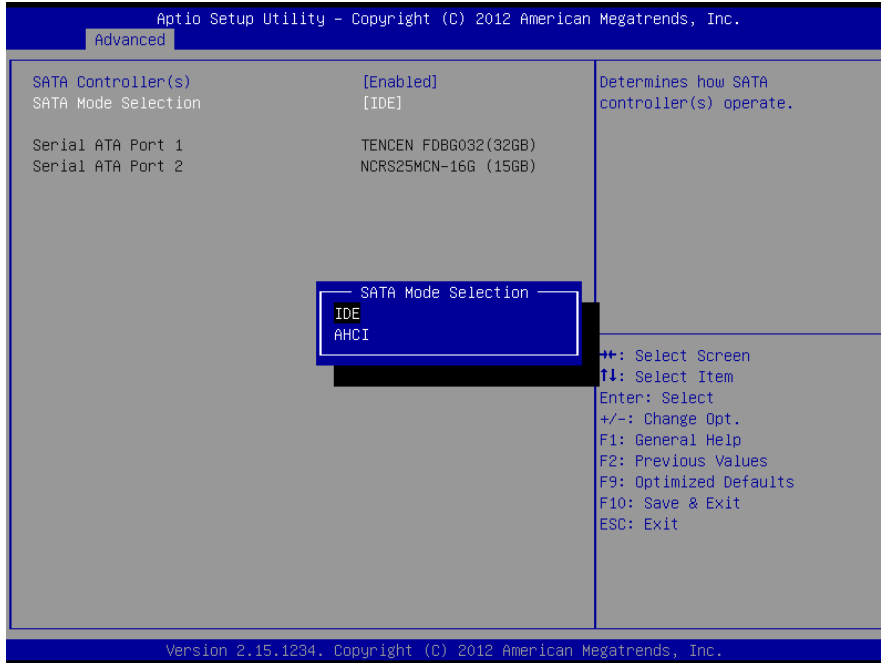
Primary Plane Current value

The default value is [0]. Primary Plane Current Limit Use this item to configure the maximum instantaneous current allowed for the primary plane.

Secondary Plane Current Value

The default value is [0]. Secondary Plane Current Limit Use this item to configure the maximum instantaneous current allowed for the secondary plane.

3.2.4 SATA Configuration



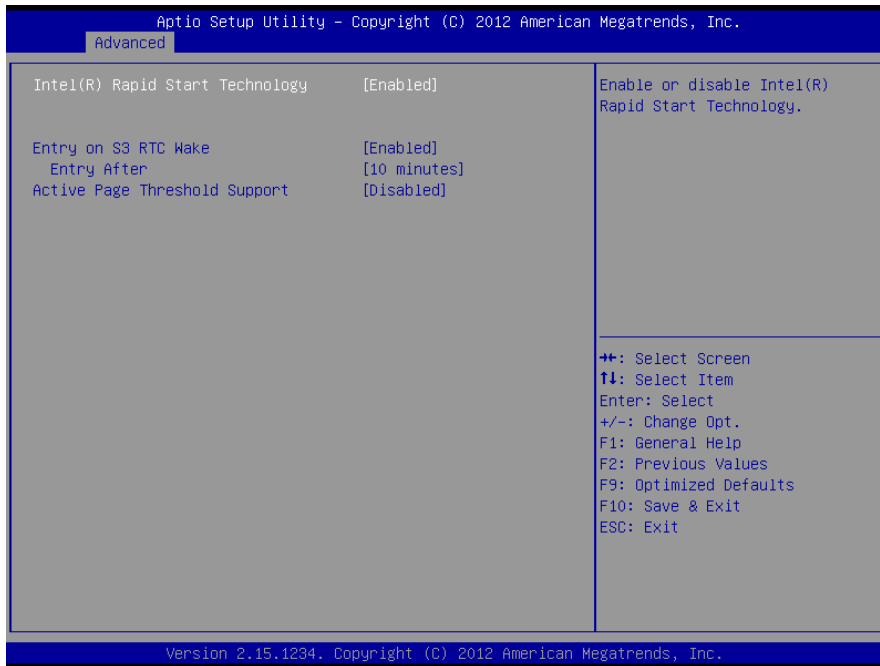
Serial-ATA Controller(S)

Enable or disable Serial-ATA controllers. Setting values include [Disabled], [Enhanced], [Compatible].

SATA Mode

This option is used to configure SATA mode: [IDE] or [AHCI].

3.2.5 Intel(R) Rapid Start Technology



Intel(R) Rapid Start Technology

Enable or disable Intel Rapid Start Technology.

Entry on S3 RTC Wake

Intel rapid start technology needs to wake from S3 to enter S4. Enable or disable Entry on S3 RTC Wake.

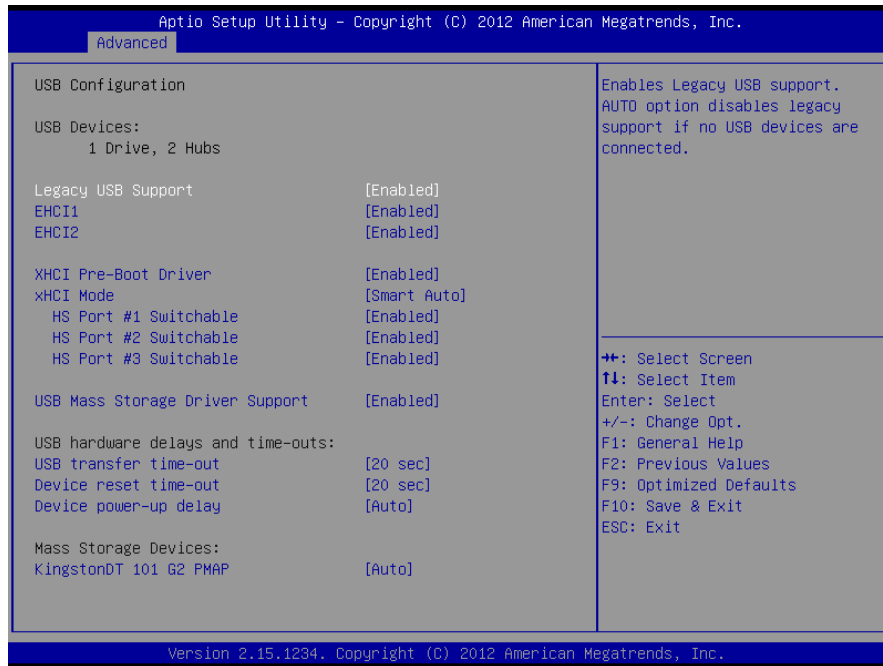
Entry After

RTC Wake Time Setting: select wake right now or wake after 1 minute, 2minutes, etc. System default [10 Seconds].

Active Page Threshold Support

Enable or disable Active page threshold support.

3.2.6 USB Configuration



Legacy USB Support

Enable Legacy USB support. Set this option [Enabled] or [Auto] if you want system to support USB devices, such as U disk, USB keyboard, etc. in DOS. Otherwise, select this option as [Disabled]. [Auto] option disables legacy support if no USB devices are connected.

EHCI/EHCI2

Enable or disable USB2.0 controller.

XHCI Pre-Boot Driver

USB3.0 Pre-Boot Option: please [Enable] this option if XHCI Mode is selected as [Smart Auto]. System default [Enable].

XHCI Mode

USB3.0 Controller mode select: [Smart Auto]/[Auto] enables system to auto switch to USB 2.0 or USB 3.0. [Enable] only enables USB3.0 support. [Disable] will disable USB3.0 controller and does not switch to USB2.0. After installing USB3.0 driver in WIN7, it is recommend to set XHCI

Mode as [Enable] to prevent speed down of USB3.0 device. XP has no USB3.0 driver. WIN8 comes with USB3.0 driver.

HS Port ## Switchable

USB3.0 Port Switchable setting.

[Enabled]: connect to USB3.0 Controller;

[Disabled]: connect to USB2.0 Controller

USB Mass Storage Driver Support

USB Mass Storage Device Support setting

USB Transfer time-out

USB transfer time-out: Set the time-out for USB mass transfer/transfer control/ transfer interrupt. Default time-out [20Sec].

Device reset time-out

Device reset time-out: Set mass capacity USB disk start command time-out. System default [20Sec].

Device Power-up Delay

Device Power-up Delay: Set the maximum delay time for USB device report to Master controller.

USB Mass Storage Device

This option is used to set the USB device type connected, including [Auto][Floppy][Forced FDD][Hard Disk][CD-ROM]. System default [Auto].

3.2.7 Supper IO Configuration

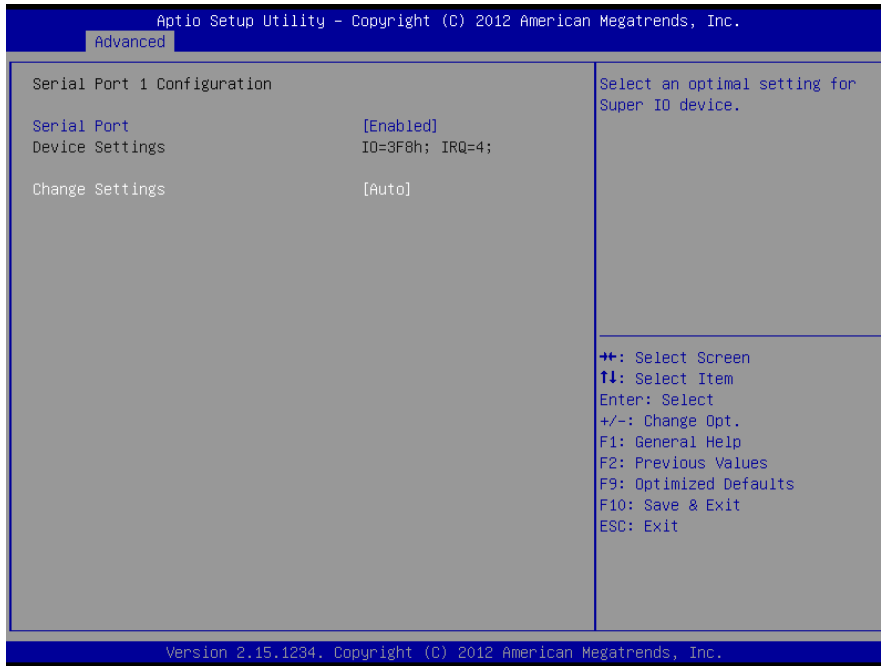


Serial Port 1/2 Configuration

Set parameters for serial port 1/2.

Watchdog Configuration

Set watchdog function.

**Serial Port**

Enable or disable the serial port.

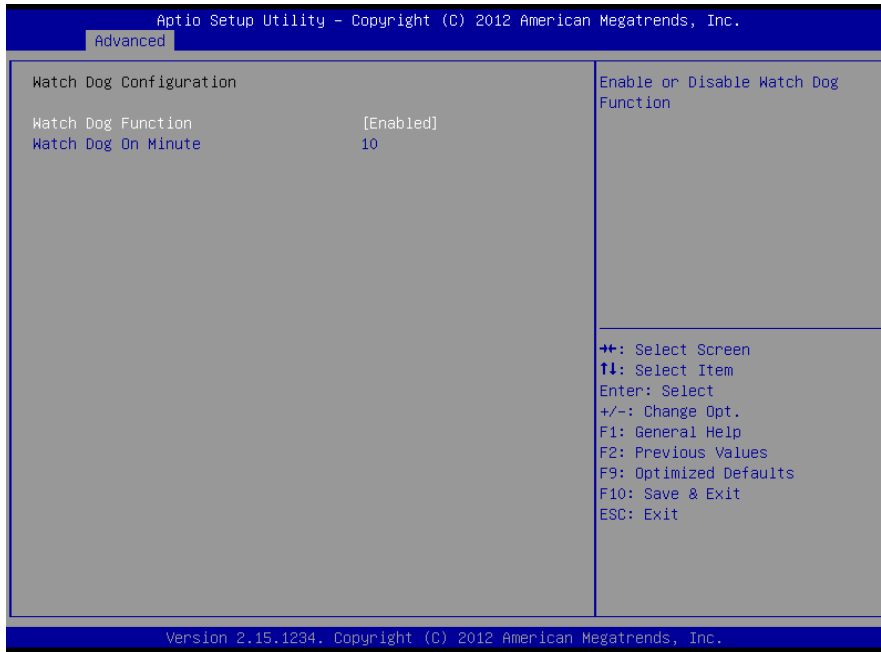
Device Setting (Read Only)

Set serial port IRQ and Address. COM1 default 3F8/IRQ4; COM2 default 2F8/IRQ3.

Change Setting

Change the setting of serial port IRQ and Address. System default [Auto].

Serial Port 2 Configuration follows the above steps.

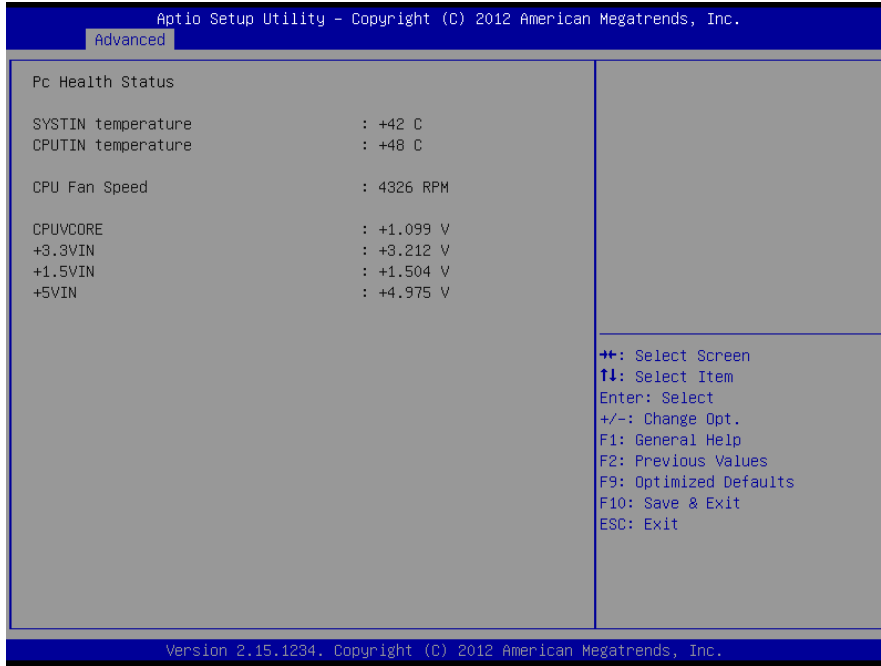
**Watchdog Function**

Enable or disable watchdog function. System default [Disable].

Watchdog On Minute

Watchdog Timer Countdown setting. System defaults [10sec].

3.2.8 H/W Monitor



Hardware Health Monitor

SYSTIN temperature

CPUITN temperature

CPU Fan Speed

CPUVCORE

+3.3VIN

+1.5VIN

+5VIN

Console Redirection

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Advanced

<p>COM1 Console Redirection [Disabled] ▶ Console Redirection Settings</p> <p>COM2 Console Redirection [Disabled] ▶ Console Redirection Settings</p> <p>Serial Port for Out-of-Band Management/ Windows Emergency Management Services (EMS) Console Redirection [Disabled] ▶ Console Redirection Settings</p>	<p>Console Redirection Enable or Disable.</p> <hr/> <p> ++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit </p>
--	--

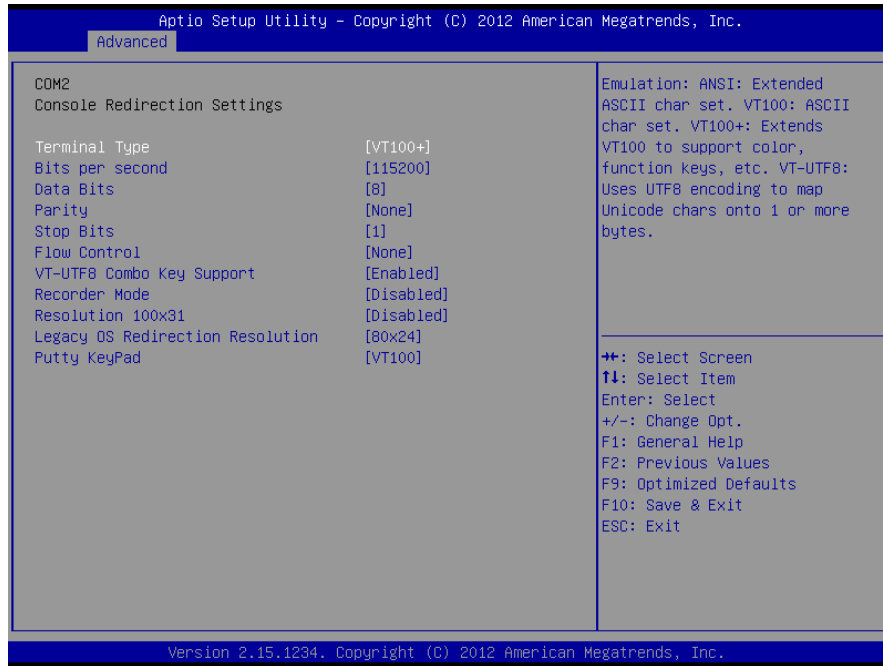
Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Advanced

<p>COM1 Console Redirection Settings</p> <p>Terminal Type [VT100+] Bits per second [115200] Data Bits [8] Parity [None] Stop Bits [1] Flow Control [None] VT-UTF8 Combo Key Support [Enabled] Recorder Mode [Disabled] Resolution 100x31 [Disabled] Legacy OS Redirection Resolution [80x24] Putty KeyPad [VT100]</p>	<p>Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.</p> <hr/> <p> ++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit </p>
---	---

Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.

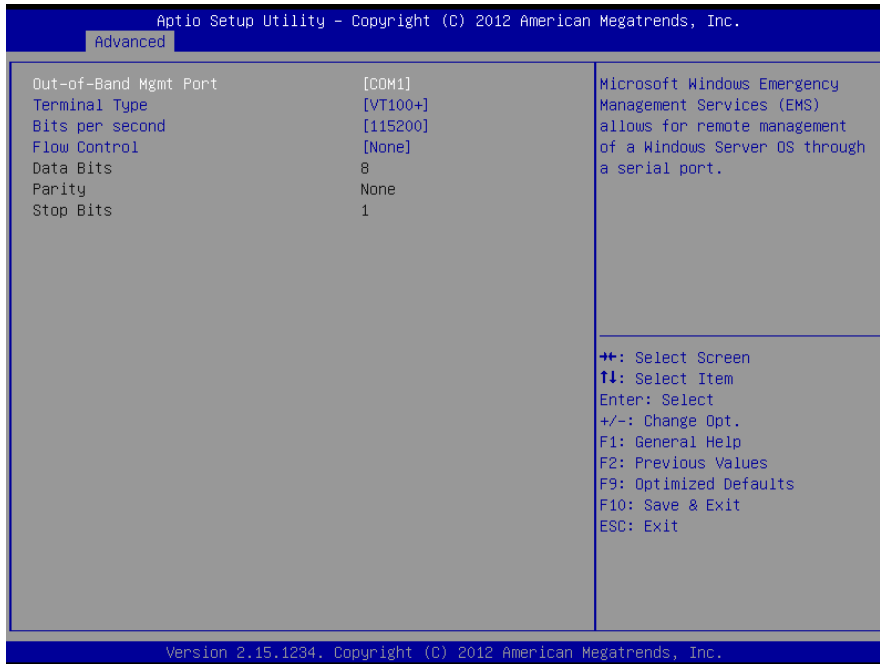
**Console Redirection:**

Console Redirection. Motherboard supports COM1/2 console redirection. System defaults [Disable]. To enable redirection function just need to enable COM1 or COM2 console redirection. There is no need to enable EMS redirection.

General Options:

1. **Console Redirection:** Console Redirection Options
2. **Terminal Type:** Terminal types include VT100/VT100+/ VT-UTF8/ANSI. If system gets unreadable code of the terminal console, you need to adjust this option. Default [VT100+].
3. **Bits per Second:** Default 115200

Windows Emergency Management Services

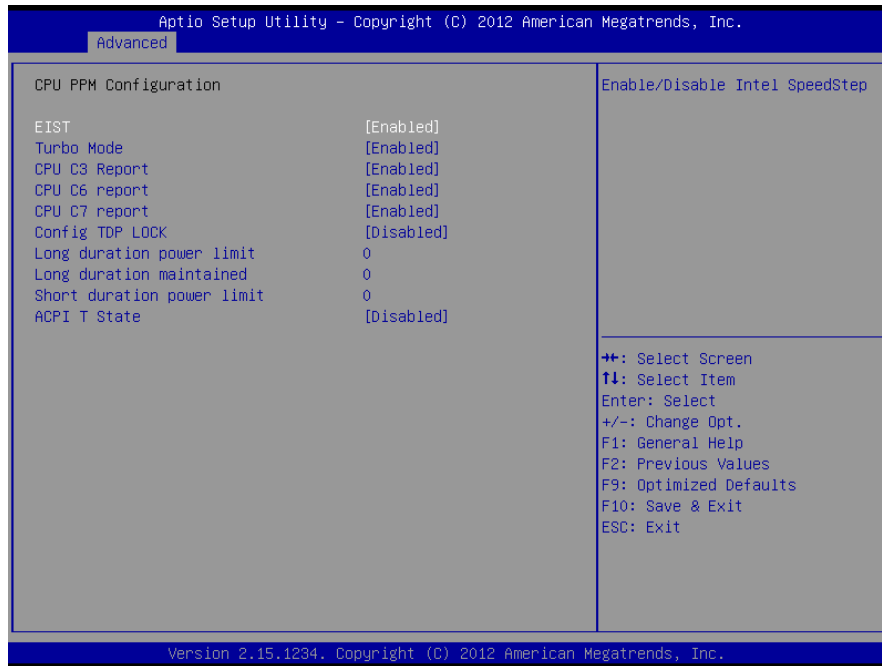


The Emergency Management Services (EMS), available in Windows Server 2003 and Windows Server 2008, provides “headless” support for today enterprise servers. It enables management services without the need for a keyboard, mouse, local monitor, and video adapter. A server administrator interacts with EMS through a Special Administration Console (SAC) to perform management and recovery tasks, even when the system’s operational status is questionable. There is no need to enable EMS redirection when enabling serial port console redirection.

General Settings:

1. **Out-of-Band Mgmt Port:** Serial Port Setting
2. **Terminal Type:** Terminal Type Setting includes VT100/VT100+/ VT-UTF8/ANSI. If system gets unreadable code of the terminal console, you need to adjust this option. Default [VT100+].
3. **Bits per second**

3.2.9 CPU PPM Configuration



EIST

Enhanced Intel Speed Step Technology (EIST) is a power and thermal management technology developed by Intel. Enhanced Intel Speed Step Technology allows the system to dynamically adjust processor voltage and core frequency, which can result in decreased average power consumption and decreased average heat production. Ensure it is set to "Enabled."

Turbo Mode

Intel Turbo Boost is a technology implemented by Intel in certain versions of their Nehalem-, Sandy-Bridge- and Ivy-Bridge-based CPUs, including Core i5 and Core i7 that enables the processor to run above its base operating frequency via dynamic control of the CPU's "clock rate". It is activated when the operating system requests the highest performance state of the processor.

CPU C3/C6/C7 Report

This option allows you to determine whether to let the CPU enter C3/C6/C7 mode in system

halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. The C3/C6/C7 state is a more enhanced power-saving state than C1. (Default: Enabled).

Config TDP LOCK

TDP “Thermal Design Power”: Use this feature to lock the Config TDP Control register. You can select to enable or disable this option.

Long duration power limit

This is the processor power consumption limit (in Watts) during a long duration time window. The default setting is 0.

Long duration maintained

Long Duration maintained(ms): This is the time in milliseconds where the Long Duration Power Limit is maintained. The default setting is 0.

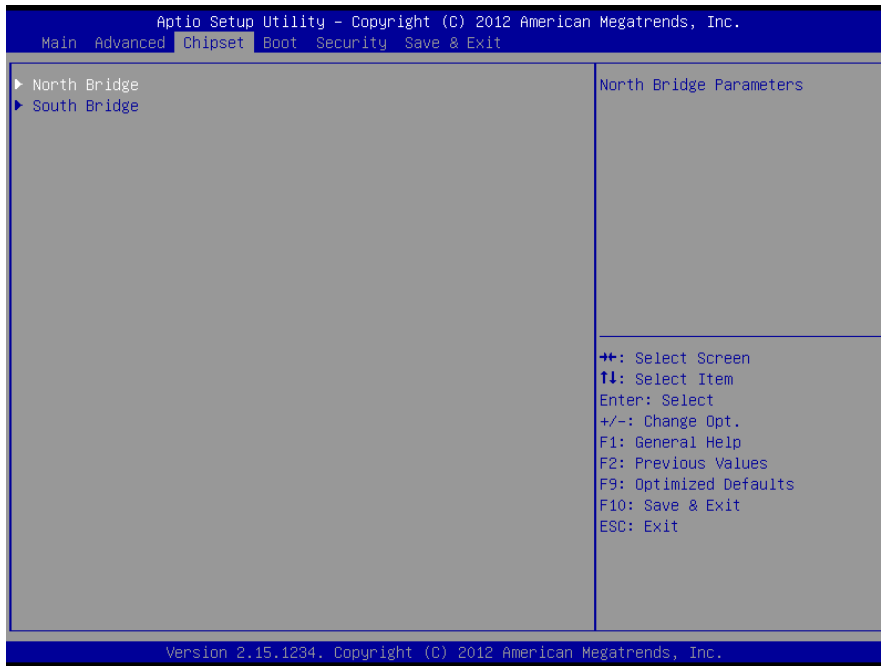
Short duration power limit

During Turbo Mode, the system may exceed the processor’s default power setting and exceed the Short Duration Power Limit. By increasing this value, the processor can provide better performance for a short duration. The default setting is 0.

ACPI T State

T-States (Processor Throttling States): T-states refer to throttling the processor clock to lower frequencies in order to reduce thermal effects. This means that the CPU is forced to be idle a fixed percentage of its cycles per second. Throttling states range from T1 (the CPU has no forced idle cycles) to Tn, with the percentage of idle cycles increasing the greater n is.

3.3 Chipset Menu



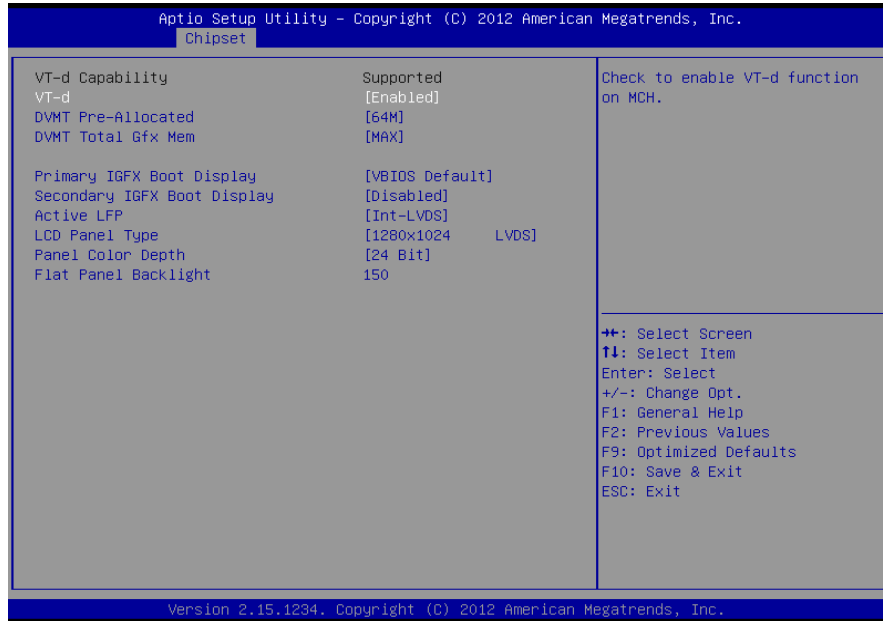
North Bridge

North Bridge Parameters: including Video memory, display, LVDS and other options.

South Bridge

South Bridge Parameters: including Audio Card, Network Card, Restore AC Power Loss and other options.

3.3.1 North Bridge



VT-d

Check to enable VT-d Function on MCH

DVMT Pre-Allocated

DVMT Pre-Allocated for inbuilt Graphic card.

DVMT Total Gfx Mem

DVMT Total Gfx Mem for inbuilt Graphic card.

Primary IGFX Boot Display

Select onboard Graphic Card Primary Boot Display (such as HDMI, DP, LVDS). System default [VBIOS] to auto detect the boot display device.

Secondary IGFX Boot Display

To select onboard graphic card secondary boot display (such as HDMI, DP, LVDS), to manually select display according to primary display options. System defaults [Disable] as the primary display select [VBIOS Default], enabling system auto detect display device.

Active LFP

Activate or disable LVDS display.

LCD Panel Type

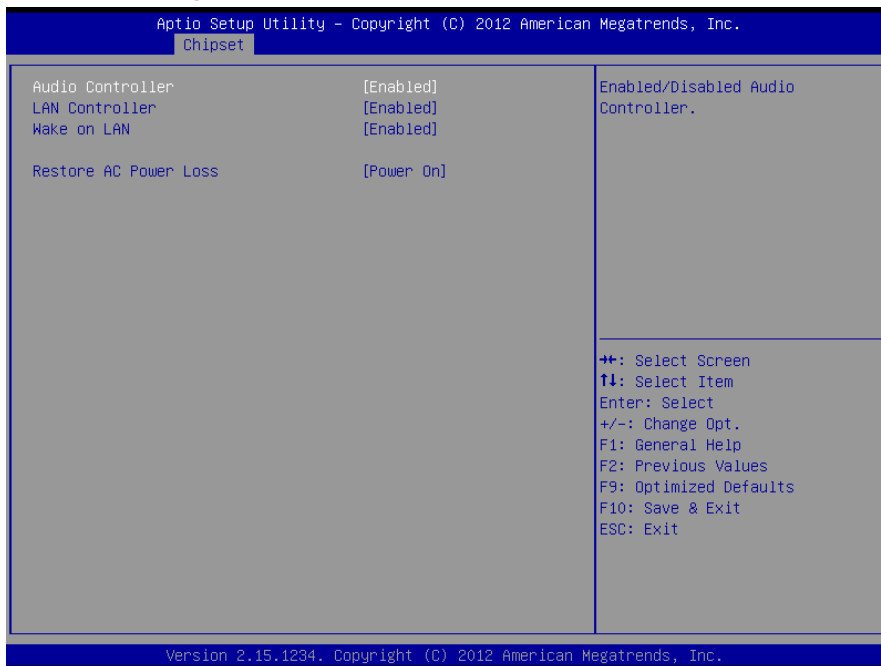
Setup LVDS display resolution.

Panel Color Depth

Setup the LVDS 24-bit Color or 18-bit Color.

Flat Panel Backlight

Setup and adjust LVDS Flat panel backlight

3.3.2 South Bridge**Audio Controller**

Enable or disable the onboard audio controller.

LAN Controller

Enable or disable the onboard LAN Controller.

Wake on LAN

Enable or disable Wake-on-LAN function.

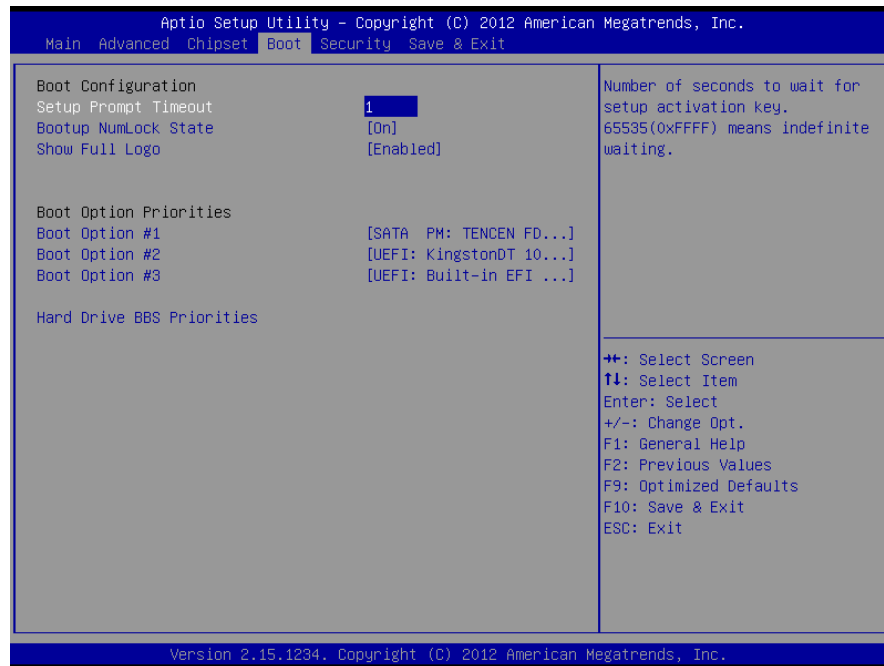
Restore AC Power Loss

This option is to setup the system status while connecting the power again after the AC Power Loss

<Power Off>: System remains the status of power off. Users need to press the power button to start the computer.

<Power On>: System will reboot automatically when connecting to power supply.

<Last State>: Remain the same state as that before the power loss.

3.4 Boot Menu

Setup Prompt Timeout

Number of seconds to wait for setup shortcut key. 60s is the max seconds of timeout. If don't press Setup key within the preset time, system will continue to start.

Bootup Numlock State

This function allows users to activate Numlock function when boot up.

[ON]: Numlock is activated when system boots up

[OFF]: Numlock under cursor control.

Show Full Logo

[Enabled]: Computer boot screen will show supplier's LOGO.

[Disabled]: Self-detect info will show when system boots.

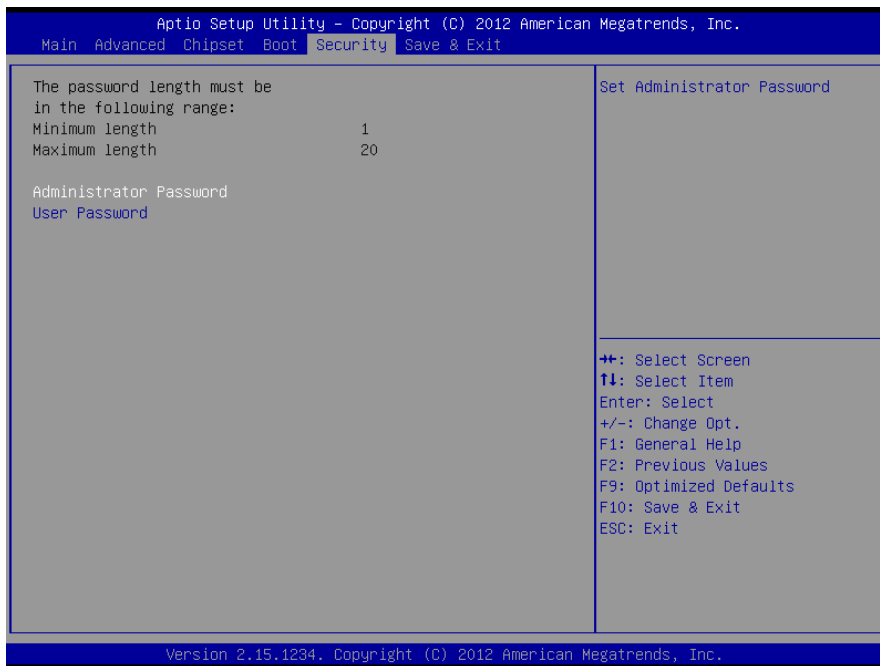
Boot Option Priorities

System will detect devices according to the preset sequence until to find a boot device. Option #1 is the prior boot device.

Hard Drive BBS Priorities

This option contains HDD that can be used as boot device. If multiple HDDs in this option, priority should set for these HDDs, then the prior one will show in Boot Option #1.

3.5 Security Menu



The password length: Min: 1 character, Maximum: 20 characters.

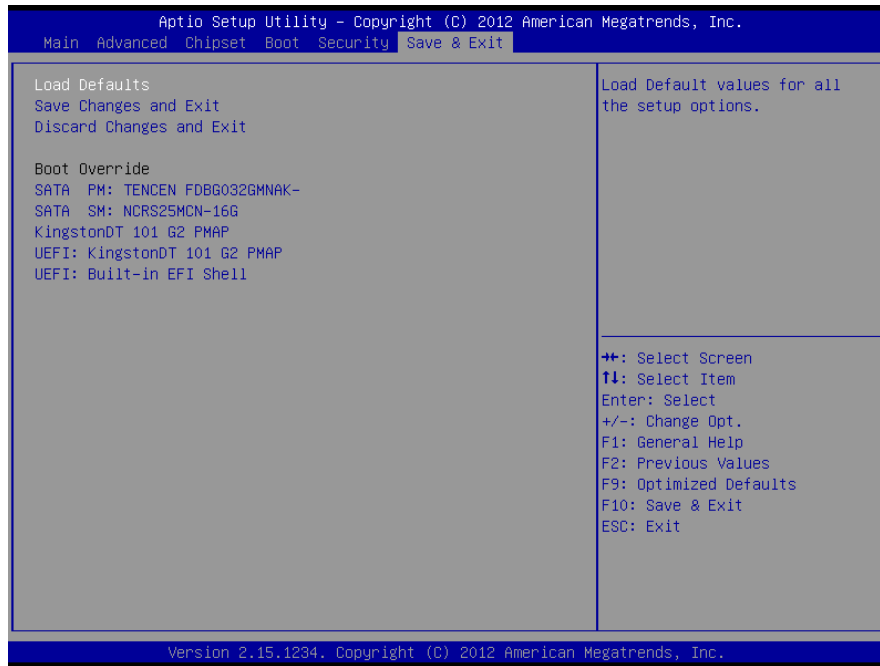
Administrator Password

To setup the password for administrator

User Password

To setup User's Password. If you have set the password, system will display "Installed"; If not, system will display "Not Installed".

3.6 Save & Exit Menu



Load Defaults

Restore/Load Default values for all BIOS setup options.

Save Changes and Exit

Press [Enter] to select this option and press [Enter] to confirm to save all BIOS changes and Exit.

Discard Changes and Exit

Press [Enter] to select this option and press [Enter] to confirm to discard all changes and exit.

Boot Override

Select the allocated Boot device, such as SATA HDD, U Disk, EFI Shell, PXE, etc, to boot directly and don't need to save and exit. Press F11 to select assigned device to boot.



Appendix

Appendix

Appendix 1: Watchdog Programming Guide

watchdog reference code (C)

Set the port to realize watchdog function through DEBUG order, so that it can carry out Watchdog Timer's various functions.

Port Instruction:

```
void main()
{int indexp = 0x2e,datap = 0x2f;
 unsigned char temp;
 Outportb(indexp,0x87);
 Outportb(indexp,0x87); //unlock
 Outportb(indexp,0x2d);
 temp = (unsigned char) inportb (datap);
 temp &= 0xfe;
 Outportb(indexp,0x2d);
 Outportb(datap,temp); //set pin for watchdog
 Outportb(indexp,0x07);
 Outportb(datap,0x08);
 Outportb(indexp,0x30);
 Outportb(datap,0x01); //enable logical device
 Outportb(indexp,0xf5);
 Outportb(datap,0x00); //set second
 Outportb(indexp,0xf6);
 Outportb(datap,0x05); //set 5seconds
 Outportb(indexp,0xf7);
 Outportb(datap,0x00);
 Outportb(indexp,0xaa); //lock}
```

If system halted, the watchdog enables the system to reboot automatically.

Appendix 2: Glossary

ACPI

Advanced Configuration and Power Management. ACPI specifications allow O/S to control most power of the computer and its add-ons

BIOS

Basic input/output system. It is a kind of software including all in/out control code interface in PC. It will do hardware testing while system is booting, and then the O/S runs. BIOS provides a interface between O/S and hardware and is stored in a ROM chip.

BUS

In a computer system, it is the channel among different parts for exchanging data; it is also a set of hardware lines. BUS here refers to part lines inside CPU and the main components of system memory.

Chipset

Chipset is a Integrated set of chips for executing one or more related functions. Here it refers to a system level chipset structured by Southbridge & Northbridge; It decides the structure and main functions of motherboard.

CMOS

Complementary Metal-Oxide Semiconductor, which is a widely used semiconductor with the characteristics of high-speed and low-power. COMS here refers to part of space on-board CMOS RAM for saving date, time, system information and system parameter, ect.

COM

Computer-Output Microfilmer. A universal serial communication interface, usually adopts normative OB 9 connector.

DIMM

Dual-Inline-Memory-Modules. It is a small circuit board with memory chipset providing 64 bit memory bus width.

DRAM

Dynamic Random Access Memorizer. It is a normal type of memory often with a transistor and a capacitance to store 1 bit. With the development of the technology, more and more types of DRAM with different specifications exist in computer applications. For example: SDRAM/DDR SDRAM/RDRAM.

LAN

Network interface. Network grouped by correlative computers in a small area, generally in a company or a building. Local area network is buildup by sever, workstation, some communications links. Terminals can access data and devices anywhere through cables, which enables users to share costly devices and resource.

LED

Light-Emitting Diode. A semiconductor device that shines when power supply is connected, It is often used to denote information directly, for example, to denote power on or HDD working normally.

PnP

Plug-and-Play. It is a specification that allows PC to configure its external devices automatically and can work independently without the manual operation by its user . To achieve this function, its BIOS should be able to support PnP and a PnP expansion card

POST

Self-test when power on. While the system is booting, BIOS will do an uninterrupted testing to the system, including RAM, keyboard, hard disk drive etc. to check if all the components are in normal situation and work well.

PS/2

A keyboard & mouse connective interface specification developed by IBM.PS/2 is a DIN interface with only 6PIN; it also can connect other devices, like modem

USB

It is the Universal Serial Bus for short. A hardware interface adapts to low speed peripherals, and is always used to connect keyboard, mouse etc. One PC can connect maximum 127 USB devices, providing 12Mbit/s transmit bandwidth USB supports hot swap and multi- data stream, namely, you can plug USB devices while system is running, system can auto-detect and makes it work on.

Appendix 3: Install Driver

Please install the driver as per the following steps:

Insert the programmed disk into CD-ROM, so installation of the driver can be made either automatically or manually. Now manually installation instructions are given as below:

- 1) A variety of options are available regarding manually installation, which you can check from Device Manager.
- 2) Right click "my computer ", select "management", and go to "Device Manager"
- 3) Right click "display controller" in the menu of graphic card, select "Properties ", click "Driver", select "update driver".
- 4) Select "Show the list of all drivers which are designated locations so that choices can be made from it ", select "next."
- 5) Select the location of display driver, click "ok"
- 6) Complete the installation, restart the system.

Proceed with the installation of other drivers after restarting the system, till all installations are completed. Then user can check from the device manager that it says device is working.



敬请参阅

<http://www.norco.com.cn>

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