User Manual

FES2215: Fanless Embedded System Atom D2550
Dual Core 1.86GHz Processor

ACNODES
14628 Central Ave,
Chino, CA 91710
tel:909.597.7588, fax:909.597.1939

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Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2. Shielded interface cables must be used in order to comply with the emission limits.

Static Electricity Precautions

It is quite easy to inadvertently damage the system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build up.

1. To prevent electrostatic build up, leave the system board in its anti-static bag until you are ready to install it.
2. Wear an antistatic wrist strap.
3. Do all preparation work on a static-free surface.
4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.
5. Avoid touching the pins or contacting all modules and connectors. Hold modules or connectors by their ends.

Important:

Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

Safety Measures

To avoid damage to the system:

- Use the correct AC input voltage range to reduce the risk of electric shock.
- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

Battery:

- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

Warranty

1. Warranty does not cover damages or failures caused by misuse of the product, inability to use the product, unauthorized replacement or any kind of alterations of components and product specifications.
2. The warranty is voided if the product has been exposed to physical abuse, improper installation, any kind of modification, accidents or unauthorized repair of the product.
3. Unless otherwise instructed in this user manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product himself, whether the product is still covered by warranty or not. It must be returned to the place it was purchased at, the factory or an authorized service agency for any repair work.
4. We will not be liable for any indirect, special, incidental or consequent damages to the product that has been modified or altered.

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Table of Contents

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Chapter 1: Introduction

1-1 Overview

Acnodes' FES 2215 is an outstanding and reliable Fan-less embedded system with high performance and low power consumption remained.

The new FES2215 provides customer a choice of Atom D2550 / N2800 / N2600 Processor, depends on the model being selected. FES2215 has applied by the recent launched Atom™ Processor D2550 Dual-core 1.86 GHz Processor, which deliveries enhanced performance in multi-media capability on the market at the present moment and it offers to reach the maximum memory size up to 4 GB DDR3-800/ 1066 while as the graphic dock speed of 640 MHz. FES2215 supports for dual display of VGA and HDMI. Furthermore, while as the new FES2215 is equipped of NM10 South Bridge Chipset, which deliveries high speed storage interface that supports for faster data transferring rate as to increase efficiency

In order to meet the network stability, the FES2215 series use two Realtek 81xx 100/ 1000 Mbps LAN with Wake-On LAN & DMI to support and maintain Ethernet function. The system designed with two DB-9; one supports for RS-232/ 422/ 485 and one supports for RS-232 interface, and one RJ-45 supports for RS-232. There are three of DB-9 for RS-232 reserved for optional expansion availability. A software programming Watchdog (WDT) with timer range from 1 to 255 seconds is enabled in Pipal 2215. For the audio output, there has occupied with an ALC662 for speaker.

The power supply is capable for DC power input of 12V or 24V. The power consumption is able to reach up to 22W in maximum. The system is valuable for all the embedded applications, and also well support with the Window 7, Windows XP and Linux Operation system.

The new FES2215 is not only capable and reliable to offer you an unprecedented experience with extremely high graphic performance along with remaining low on power consumption but also present an outstanding cost-competitive advantage in the market.

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1-2 Product Specification

Processor& Chipset

- Support Atom D2550 Dual-core 1.86 GHz low power Processor
- NM10 South Bridge Chipset

Graphic Engine

- Graphic core 640 Mhz
- Support AVC/ H.264, VC1/ WMV9, MPEG2 HW engine
- Blu-Ray Support
- HDCP 1.3ans PAVP 1.1C content protection support
- Support Microsoft DXVA 2.0 and Overlay DD
- MS COPP and PVP-OPM support
- Enabling Key ISVs-Corel, CyberLink, ArcSoft
- Supports OpenGL 3.0 and Microsoft DirectX 9

System Memory

- 2 SODIMM Socket, up to 4 GB 800/ 1066 MHz DDR3 Memory

Display Function

- Support VGA + HDMI dual display
- HDMI, VGA support 1920 x 1200 (1080P) resolution

BIOS

- AMI BIOS. Support Power On After Power failure

Expansion

- 1 Mini-PCI-E expansion slot

  Note: may install mSATA SSD, Wireless LAN module

Audio

- ALC 662 HD Codex support, 2W amplifier for Speaker out

Ethernet

- 2 Realtek 81xx 100/1000 Mbps LAN with Wake-On-LAN & DMI

Disk Drive Storage

- 2.5” SATA HDD & 1 Mini-PCI-E mSATA (share Mini-PCI-E slot)

RS-232/422/485 Support

- Default: 2 DB-9 as 1 for RS-232/422/485 & 1 for RS-232, 1RJ-45 for RS-232
- Optional Expansion: 3 DB-9 for RS-232

Watchdog Timer

- Programmable WDT from 1 to 255 seconds/ minutes

Power On/Off Mode

- Push button AT/ATX power on/ off
- RTC Alarm Power on

Front Panel Extend I/O Ports

- Power & HDD Led. Power & System, Power & Reset button

Rear Panel Extend I/O Ports

- Screw-Lock DC power input connector
- 2 DB-9 as 1 for RS-232/422/485 & 1 for RS-232, 1 RJ-45 for RS-232
- VGA + HDMI display interface
- 4 USB , 2 RJ-45 100/1000 Mbit LAN connector
- 1 Micro phone-in, 1 Line-out connector
- 1 PS/2 Keyboard and 1 PC/2 Mouse connector

Rear Panel Optional I/O

- 3 DB-9 for COM 4, 5, 6 RS-232 port or 2 COM + 1 Digital I/O
- 1 DB-25 for Printer port

Power Supply

- DC 12V or 24V input. 12VFC/ 2.5A, 24VDC/1.25A, AT/ATX power type
- Power adapter : AC to DC , DC 12V/5A 60W (Optional)

Power Consum ption (with HDD)

- Typical Power Consumption : 17W
- Maximum Power Consumption: 22W

Environment

- Operation Temperature:
  - With extend temperature HDD: -20°C~60°C
  - With extend temperature SSD: -20°C~60°C
- Storage Temperature: -40°C~85°C
- Relative Humidity: 10%~90% (Non-condensing)

Mechanical

- Dimension W x H x D : 200 mm x 89.83 mm x 185.5mm (7.87" x 5.34'' x 7.30')'
- Mounting: Desk/Wall Mount
- Construction: Aluminum housing
- Weight (Net/ Gross): 4.4KG (9.68lb)/ 5.0KG (10.4lb)

Certification

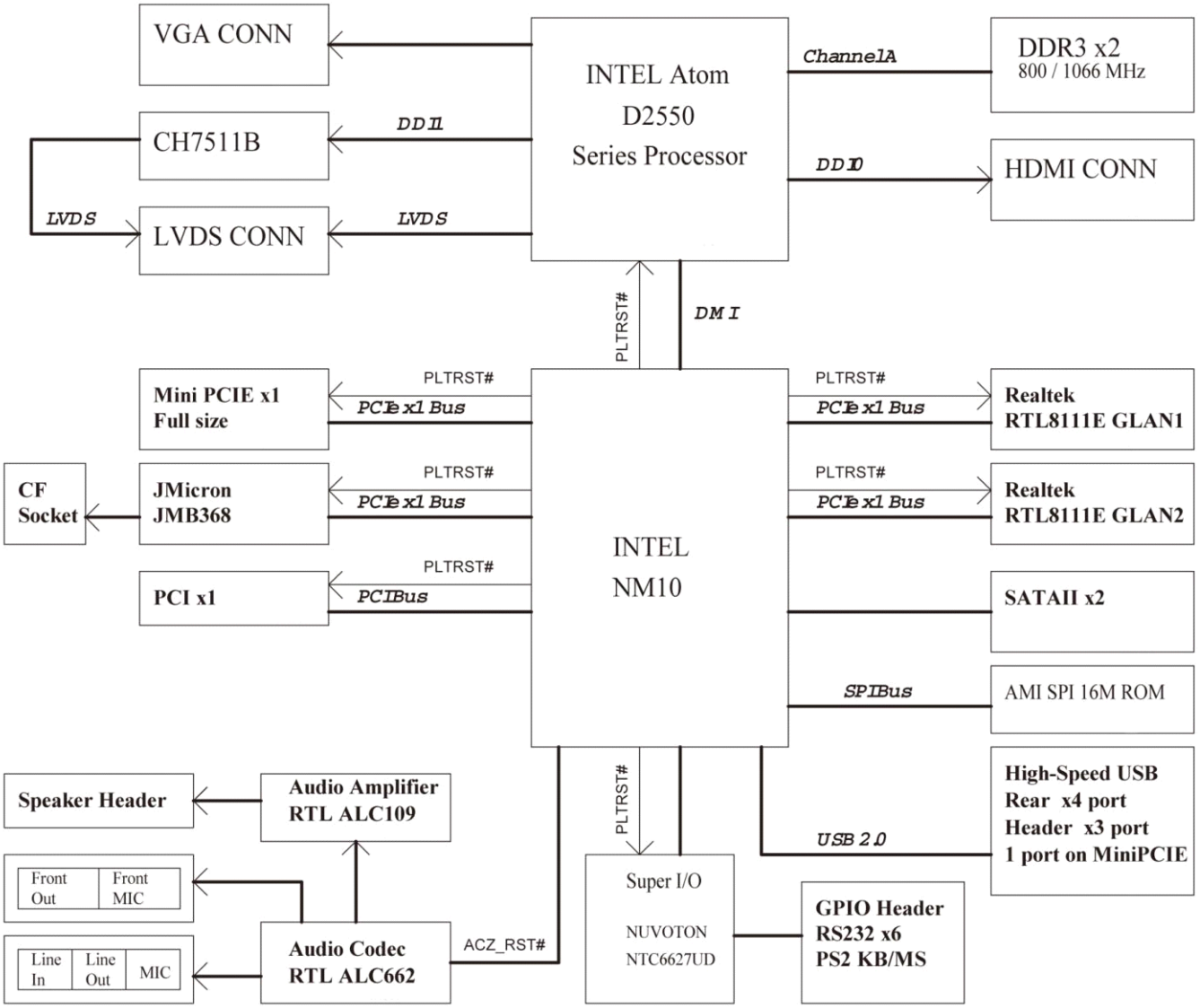
- CE/FCC Class A

OS Supports

- Windows 7, Win XP, Linux

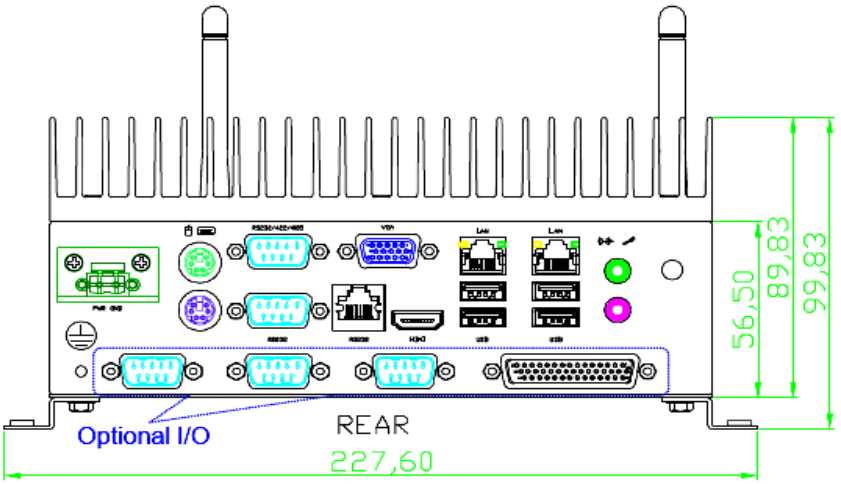
1-3 System Block Diagram

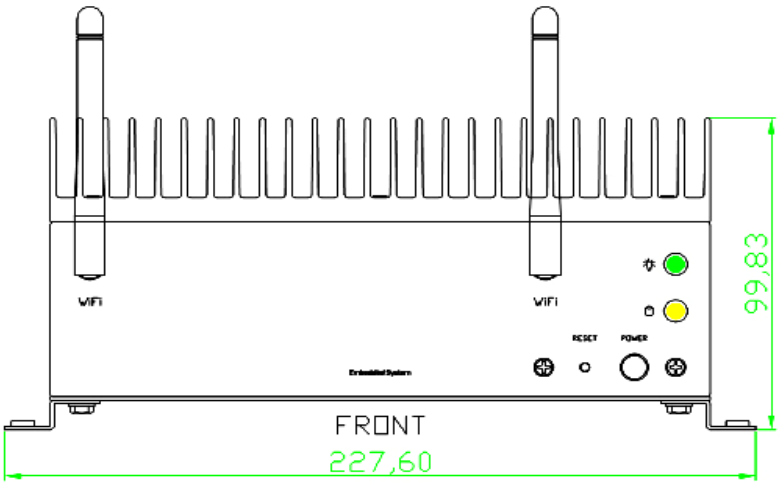
FES 2215

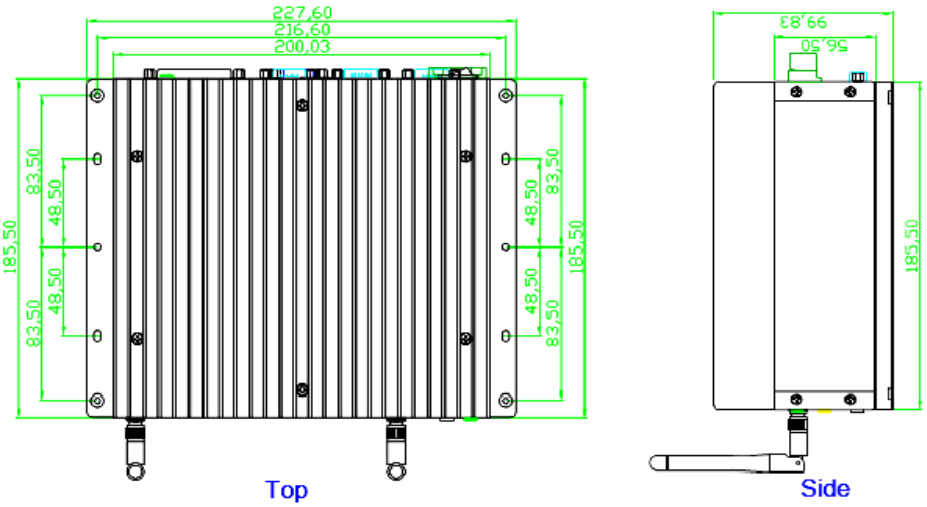


1-4 Mechanical Diagrams

FES 2215

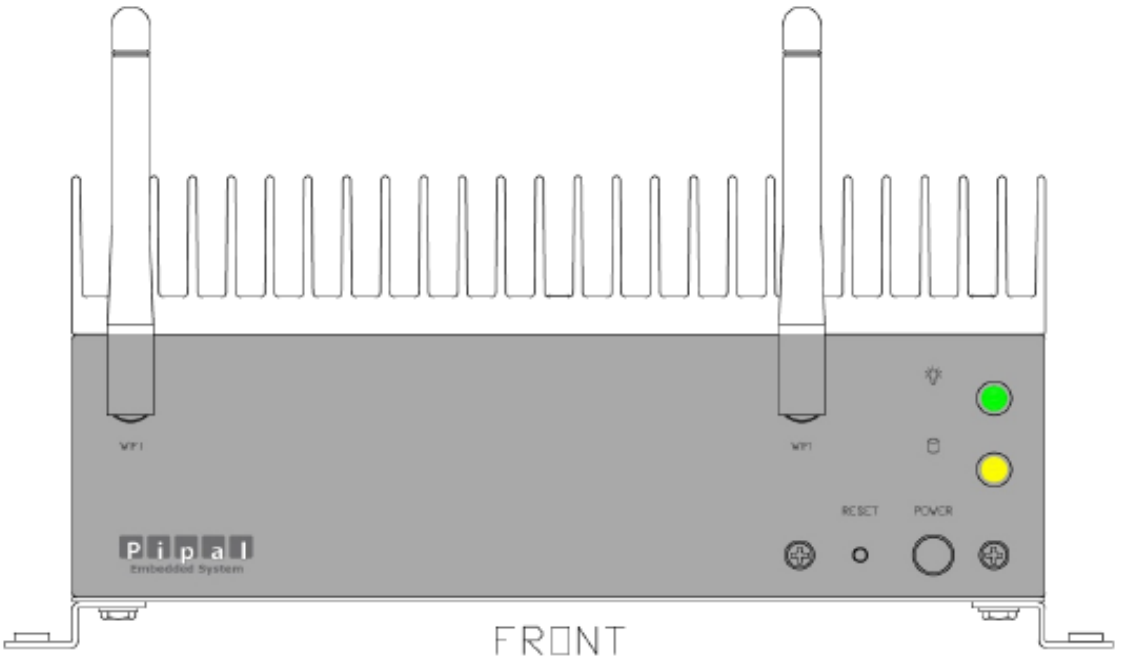




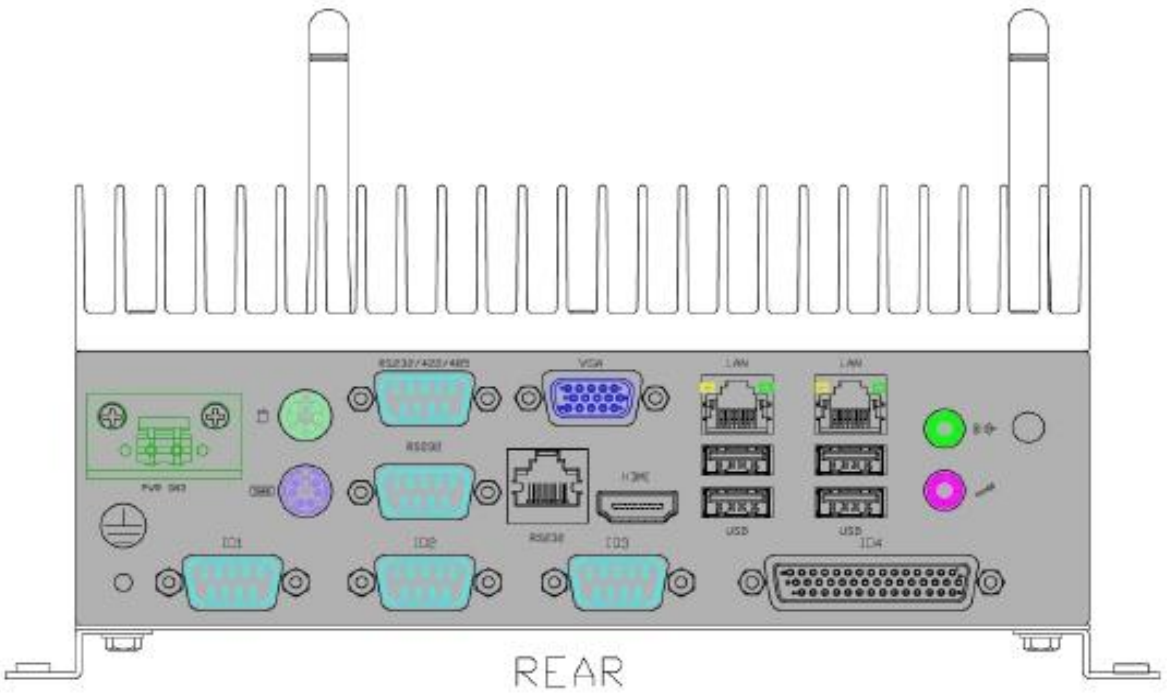


1-5 Front & Rear panel

- **Front Panel**



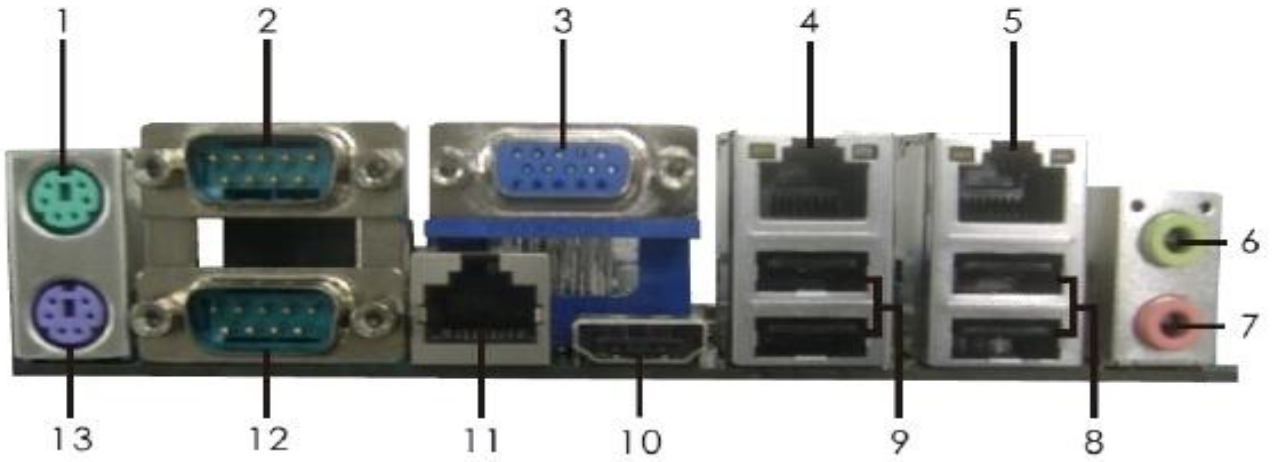
- **Rear Panel**



2-1 Front panel Pin Definition

1. **Power On/ Off Button**
2. **Power Reset Button**
3. **Power & HDD LED**

2-2 Rear Panel Pin Definition



1	PS/2 Mouse Port	8	USB 2.0 Ports (USB23)
2	Com Port A (COM1)	9	USB 2.0 Ports (USB01)
3	VGA Port (VGA1)	10	HDMI Port (HDMI1)
* 4	LAN RJ-45 Port	11	RJ-45 Com Port C (COM3)
* 5	LAN RJ-45 Port	12	Com Port B (COM2)
6	Line out (Green)	13	PS/2 Keyboard Port
7	Microphone (Pink)		

2. COM 1 (DB-9): RS-232/ 422/ 485 [refer to P.17-18, No. 8 jumper setting]

PIN	RS-232	RS-422	RS-486
1	DCD#	TX+	RTX+
2	RXD	RX+	Not Used
3	TXD	TX-	RTX-
4	DTR#	RX-	Not Used
5	GND	GND	GND
6	DSR#	Not Used	Not Used
7	RTS#	Not Used	Not Used
8	CTS#	Not Used	Not Used
9	RI#	Not Used	Not Used

4 & 5. LAN 1 & 2 (RJ-45)

PIN	Definition	PIN	Definition
1	Lan_TX1+	2	Lan_TX1-
3	Lan_TX2+	4	Lan_TX3+
5	Lan_TX3-	6	Lan_TX2-
7	Lan_TX4+	8	Lan_TX4-

6. Line-Out Connector

PIN	Definition	PIN	Definition
1	LINE_OUT_Left	2	LINE_OUT_Right
3	AUDIO_AGND	4	AUDIO_AGND
5	LINE_IN_Left	6	LINE_IN_Right
7	AUDIO_AGND	8	AUDIO_AGND
9	Micro phone_IN1	10	Micro phone _IN2

8 & 9. USB Connector [refer to P.17, No. 10 jumper setting]

PIN	Signal	PIN	Signal
1	5V	5	5V
2	D-	6	D-
3	D+	7	D+
4	GND	8	GND

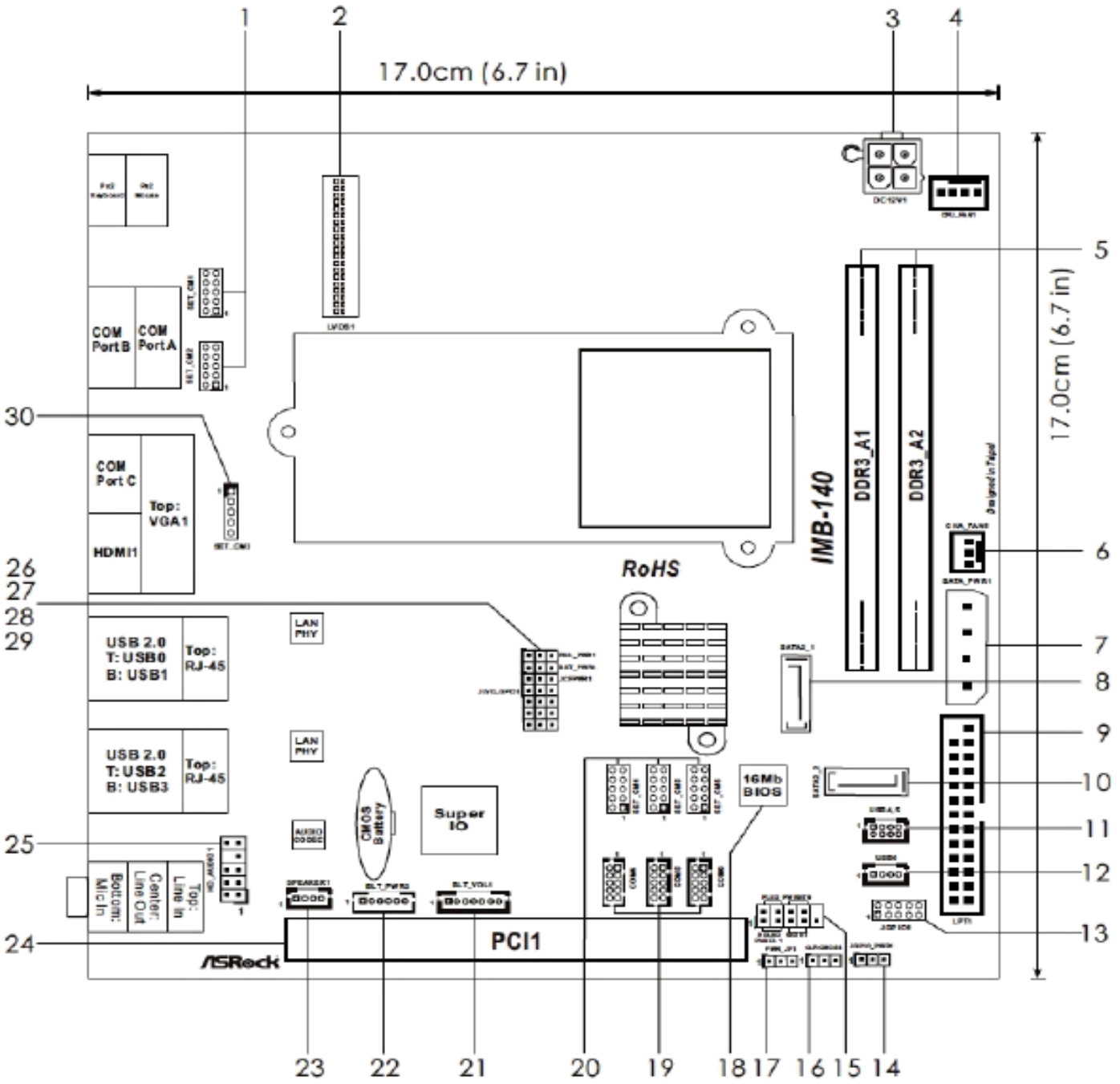
11. COM 3 (RJ-45): RS-232 [refer to P.21, No. 22 jumper setting]

12. COM 2 (DB-9): RS-232

Pin	Definition	Pin	Definition
1	DCD	2	RX
3	TX	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

2-3 Internal Pin Definition & Jumper Settings

2-3.1 Main Board Top View



2-3.2 Main Board Pin Definition

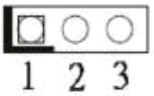
1	SET COM Ports 1,2 (SET_CM1,2)
2	LVDS Con (LVDS1)
3	4-Pin DC PWR (DC12V1)
4	CPU Fan Connector (CPU_FAN1)
5	2 x DDR3 DIMM Slots
6	Chassis Fan Connector (CHA_FAN1)
7	Output Power (SATA_PWR1)
8	SATA2 Connector (SATA2_1, Blue)
9	Printer Port Header (LPT1)
10	SATA2 Connector (SATA2_2, Blue)
11	USB 2.0 Ports 4,5 (USB4,5)
12	USB 2.0 Port 6 (USB6)
13	Digital I/O Header (JGPIO1)
14	Digital I/O Header PWR Setting (JGPIO_PWR1)
15	System Panel Control Header (PANEL1)
16	Clear CMOS Header (CLRCMOS1)
17	PWR-On mode Setting (PWR_JP1)
18	SPI Flash Memory (16Mb)
19	COM Ports 4,5,6 (COM4,5,6)
20	SET COM Ports 4,5,6 (SET_CM4,5,6)
21	Panel Brightness and Speaker Volume Control (BLT_VOL1)
22	Panel Backlight Inverter connector (BLT_PWR2)
23	Speaker Connector (SPEAKER1)
24	PCI1
25	Front Panel Audio Header (HD_AUDIO1)
26	Panel VDD PWR Setting (PNL_PWR1)
27	Panel Backlight PWR Setting (BKT_PWR1)
28	Bottom Side CF Card PWR Setting (JCFPWR1)
29	Panel Resolution Selection (JLVD_GPIO1)
30	SET COM Port 3 (SET_CM3)

2-3.3 Jumper Settings

1. **Clear CMONS Jumper (CLRCMOS1)** [refer to P.13, No. 16]

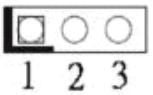
It allows you to clear the data in CMOS. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short pin 2 and pin 3 on CLRCMOS1 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action. Please be noted that the password, date, time, user default profile and MAC address will be cleared only if the CMOS battery is removed.

2. **Digital I/O Header PWR Setting (3-pin JGPIO_PWR1)** [refer to P.13, No.14]



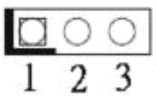
1-2: +12V.
2-3: +5V.

3. **PWR-On Mode Setting (3-pin PWR_JP1)** [refer to P.13, No.17]



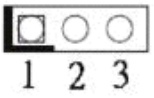
1-2: AT Mode.
2-3: ATX Mode.

4. **Panel VDD PWR Setting (3-pin PNL_PWR1)** [refer to P.13, No.26]

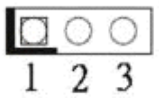


1-2: +3.3V.
2-3: +5V.

5. **Panel BackLight PWR Setting (3-pin BKT_PWR1)** [refer to P.13, No. 27]

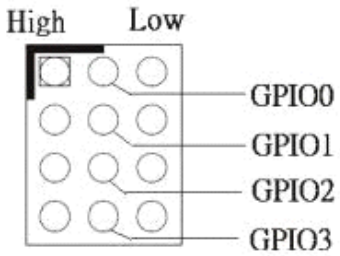


1-2: +5V.
2-3: +12V.



1-2: +3.3V.
2-3: +5V.

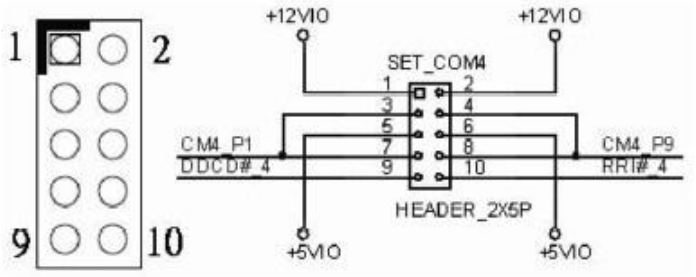
7. Panel Resolution Selection (12-pin JLVD_GPIO1) **[refer to P.13, No. 29]**



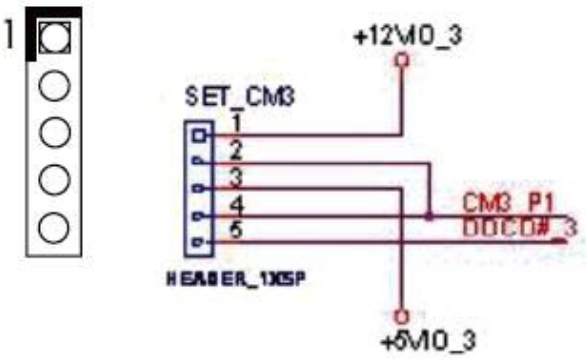
Reserved.
Default set by BIOS.

8. SET COM Ports

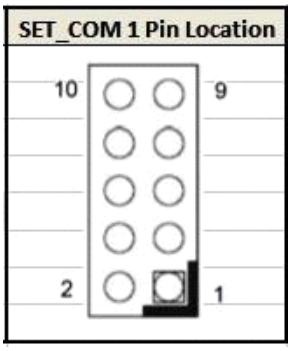
(10-pin SET_CM1,2) **[refer to P.13, No. 1]**
(10-pin SET_CM4,5,6) **[refer to P.13, No. 20]**



(5-pin SET_CM3) **[refer to P.13, No. 30]**



(COM 1 Pin1 & Pin 9 Function Setting)



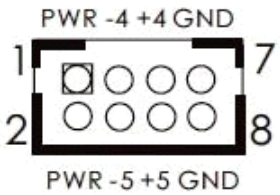
Item	Pin 1 Function	Connector SET_COM1 Jumper Setting
Config. 1	Provide +12V Power Source	Pin 1 & Pin 3 short, Pin 5 & 7 & 9 NC
Config. 2	Provide +5V Power Source	Pin 3 & Pin 5 short, Pin 1 & 3 & 9 NC
Config. 3	Provide DCD# Function	Pin 7 & Pin 9 short, Pin 1 & 3 & 5 NC
Item	**Pin 9 Function**	**Connector SET_COM1 Jumper Setting**
Config. 1	Provide +12V Power Source	Pin 2 & Pin 4 short, Pin 6 & 8 & 10 NC
Config. 2	Provide +5V Power Source	Pin 4 & Pin 6 short, Pin 2 & 4 & 10 NC
Config. 3	Provide RI# Function	Pin 8 & Pin 10 short, Pin 2 & 4 & 6 NC

9. SATA 2 Connectors (SATA2_1) **[refer to P.13, No. 8]**
(SATA2_2) **[refer to P.13, No. 10]**

These two Serial ATA2 (SATA2) connectors support SATA data cables for internal storage devices. The current SATA2 interface allows up to 3.0 Gb/s data transfer rate.

10. USB 2.0 Ports

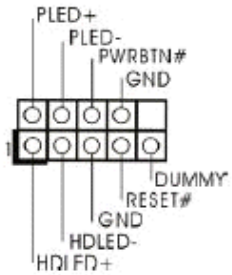
(4-pin USB 4,5) [refer to P.13, No. 11]



Besides four default USB 2.0 ports on the I/O panel, there are three USB 2.0 ports on this motherboard.

(4-pin USB6) [refer to P.13, No. 12]

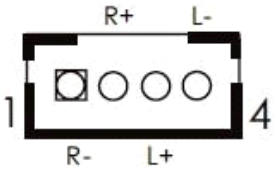
11. System Panel Header (9-pin PANEL 1) [refer to P. 13, No. 15]



This header accommodates several system front panel functions.

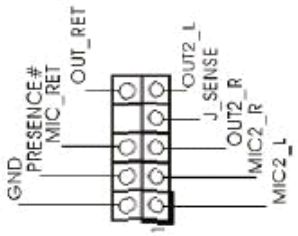
Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.

- **PWRBTN (Power Switch)**
- **RESET (Reset Switch)**
- **PLED (System Power LED)**
- **HDLED (Hard Drive Activity LED)**



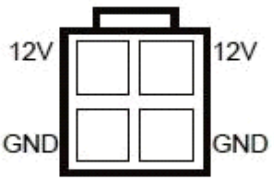
1: Speaker R-
2: Speaker R+
3: Speaker L+
4: Speaker L-

13. Front Panel Audio Header (9-pin HD_AUDIO1) **[refer to P.13, No. 25]**



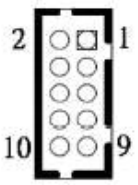
This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

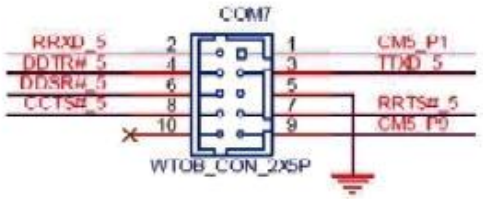
14. DC 12V Power Connector (4-pin DC 12V1) **[refer to P.13, No. 3]**



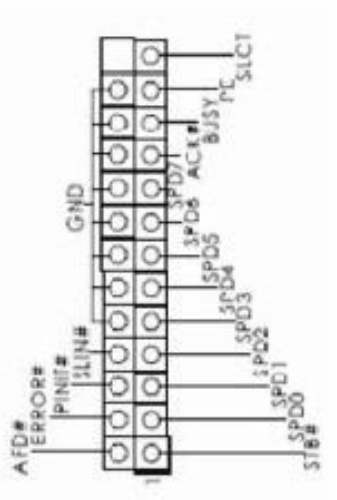
Please connect a DC 12V power supply to this connector.

15. COM Port 4,5,6 (10-pin COM 4,5,6) **[refer to P. 13, No. 19]**

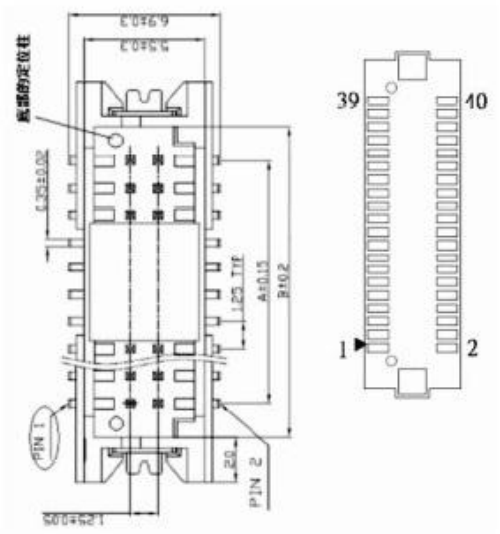




16. Print Port Header (25-pin LPT1) **[refer to P.13, No. 9]**



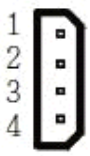
17. LVDS Con (40-pin LVDS1) **[refer to P.13, No. 2]**



LVDS Con Pin Define

Pin #	Signal Name	Pin #	Signal Name
1	VDD PWR	2	VDD PWR
3	EDID PWR (3V)	4	EDID_CLK
5	EDID_DAT	6	RXINO0-
7	RXINO0+	8	GND
9	RXINO1-	10	RXINO1+
11	GND	12	RXINO2-
13	RXINO2+	14	GND
15	RXINO3-	16	RXINO3+
17	GND	18	RXOCLKIN-
19	RXOCLKIN+	20	GND
21	RXINE0-	22	RXINE0+
23	GND	24	RXINE1-
25	RXINE1+	26	GND
27	RXINE2-	28	RXINE2+
29	GND	30	RXINE3-
31	RXINE3+	32	GND
33	RXECLKIN-	34	RXECLKIN+
35	GND	36	BackLight EN
37	BackLight PWM	38	BackLight PWR
39	BackLight PWR	40	BackLight PWR

18. Output Power (4-pin SATA_PWR1) **[refer to P.13, No. 7]**

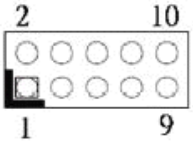


1: +5V

2, 3: GND

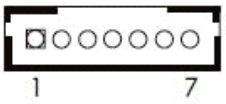
4. +12V

19. Digital I/O Header (10-pin JGPIO1) [refer to P.13, No. 13]



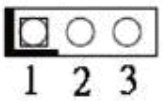
Pin #	Signal Name	Note
1	GP4	from SIO GPIO24
2	GP0	from SIO GPIO20
3	GP5	from SIO GPIO25
4	GP1	from SIO GPIO21
5	GP6	from SIO GPIO26
6	GP2	from SIO GPIO22
7	GP7	from SIO GPIO27
8	GP3	from SIO GPIO23
9	PWR	
10	GND	

20. Panel Brightness and Speaker Volume Control (7-pin BLT_VOL1) [refer to P.13, No. 21]



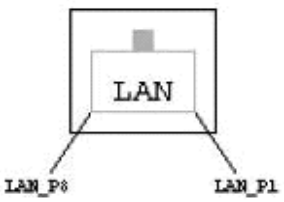
1: Volume_UP
2: Volume_DOWN
3: PANEL PWR Down
4: Panel BackLight UP
5: Panel BackLight Down
6: GND
7: GND

21. Panel BackLight Inverter Connector (6-pin BLT_PWR2) [refer to P.13, No. 22]



1-2: +5V.
2-3: +12V.

22. RJ-45 COM Port C (8-pin COM Port C) [refer to P.13, No. 11]



1: DCD#
2: RXD
3: TXD
4: DTR#
5: GND
6: DSR#
7: RTS#
8: CTS#

Chapter 3: UEFI Setup Utility

3-1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure yours system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer. Please press <F2> or <Delete> during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off And then back on.

3-1.1 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Main: For setting system time/date information

OC Tweaker: For over-clocking configurations

Advanced: For advanced system configurations

H/W Monitor: Displays current hardware status

Boot: For configuring boot settings and boot priority

Security: For security settings

Exit: Exit the current screen or the UEFI SETUP UTILITY

Use <? > key or <? > key to choose among the selections on the menu bar, and use <?> key or <?> key to move the cursor up or down to select items, then press <Enter> to get into the sub screen. You can also navigate with a mouse.

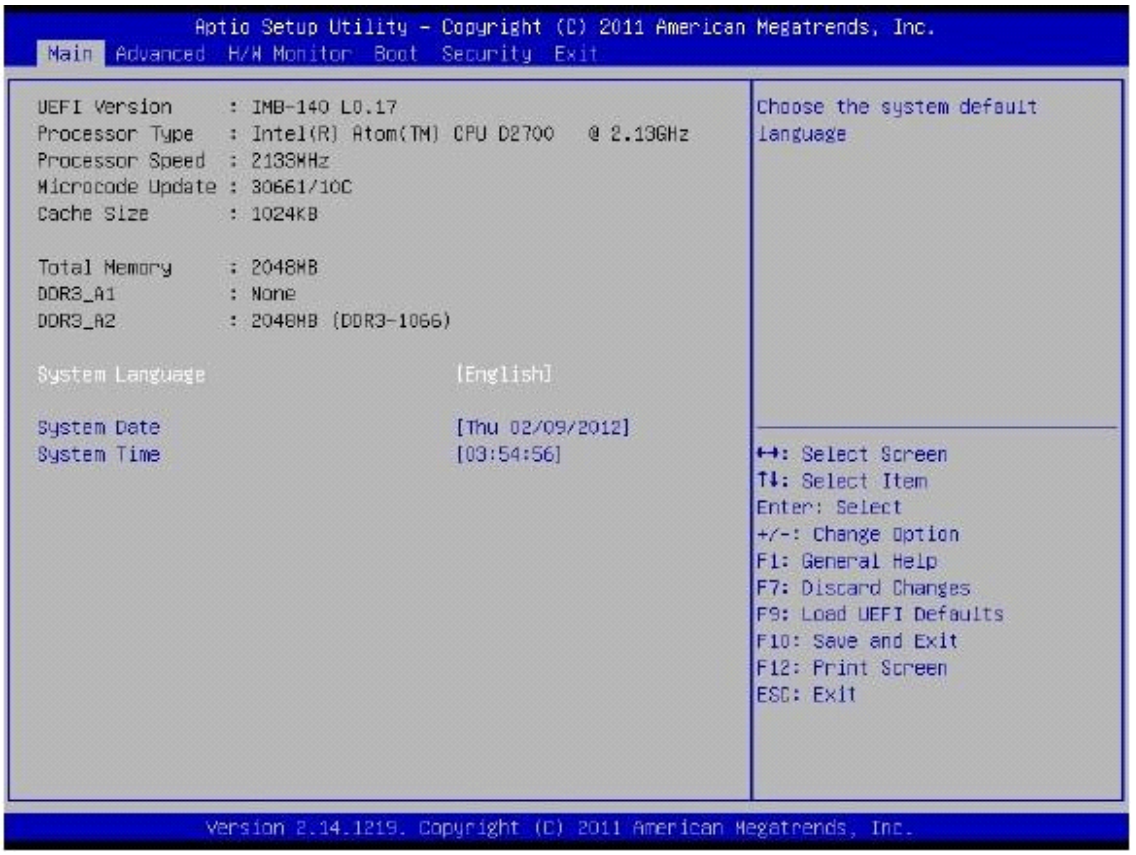
3-1.2 Navigation Keys

Please check the following table for the function descriptions of each navigation keys.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F7>	Discard changes
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the UEFI SETUP UTILITY
<F12>	Print screen
<ESC>	To jump to the Exit Screen or exit the current screen

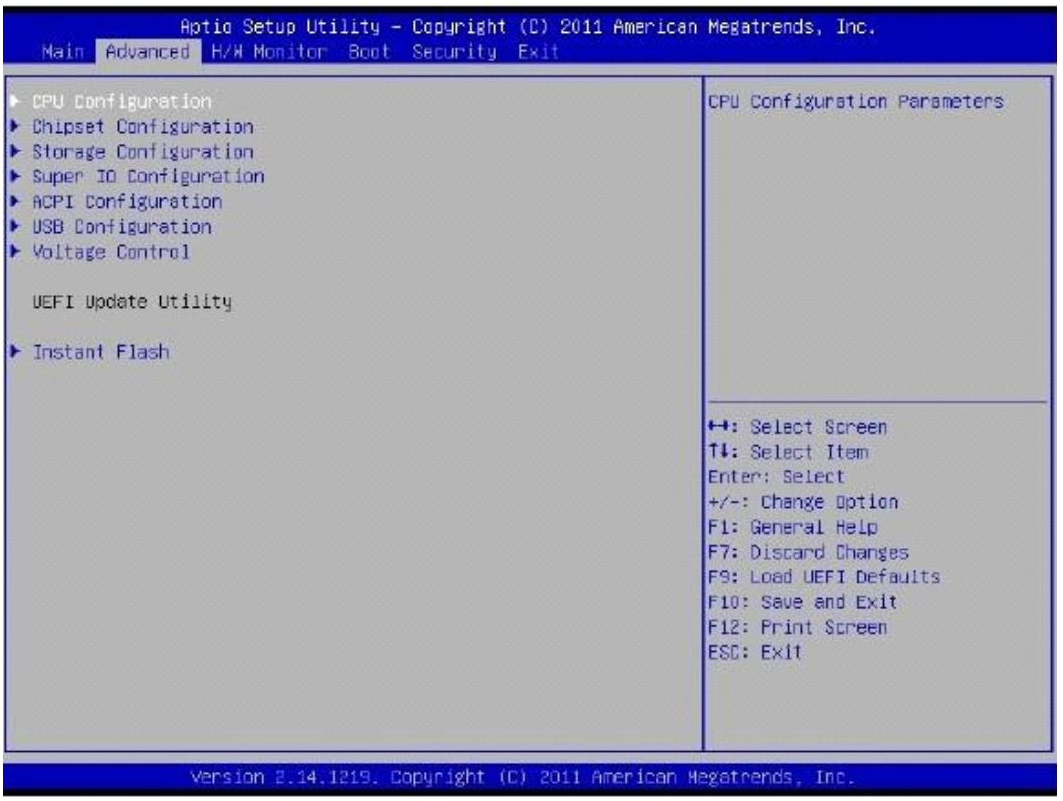
3-2 Main Screen

When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.



3-3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, Storage Configuration, Super IO Configuration, ACPI Configuration, USB Configuration and Voltage Configuration.



Setting wrong values in this sectio may cuase the system to malfunction.

Instant Flash

Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new UEFI file to your UDB flash drive, floppy disk or hard drive, then you can update your UEFI only in a few clicks without preparing and additional floppy diskette or other complicated flsh utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after UEFI update process completes.

3-3.1 CPU Configuration

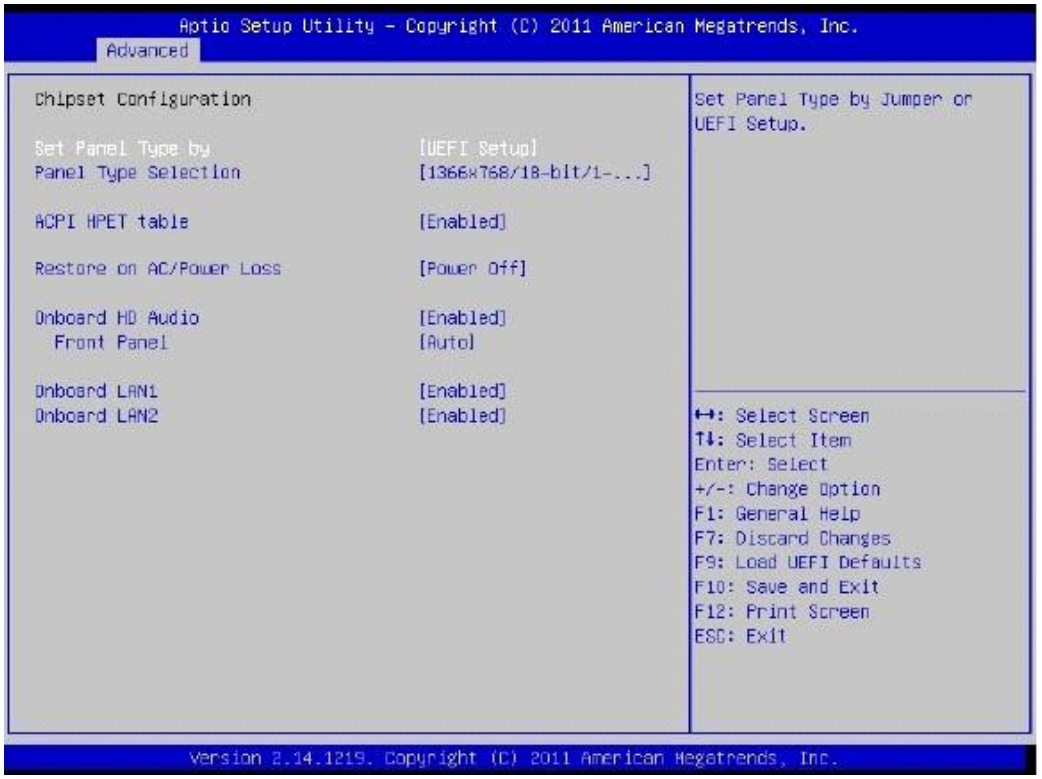
Intel Hyper Threading Technology

To enable this feature, it requires a computer system with an Intel processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® 7. Set to [Enabled] if using Microsoft® Windows® 7.

No-Execute Memory Protec tion

No-Execution (NX) Memory Protection Technology is an enhancement to the IA-32 Intel Architecture. An IA-32 processor with “No Execute (NX) Memory Protection” can prevent data pages from being used by malicious software to execute code.

3-3.2 Chipset Configuration



Set Panel Type by

Use this to configure Set Panel Type.The Default value is [UEFI Setup].

Panel Type Selection

Use this to select panel type. The default value is [1366x768/ 18-bit/ 1-ch/LED].

ACPI HPET Table

Use this item to enable or disable ACPI HPET Table. The default value is [Enabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® certification.

Restore on AC/Power Loss

This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/ power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

Onboard HD Audio

Select [Audio], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged.

Front Panel

Select [Auto] or [Disabled] for the onboard HD Audio Front Panel.

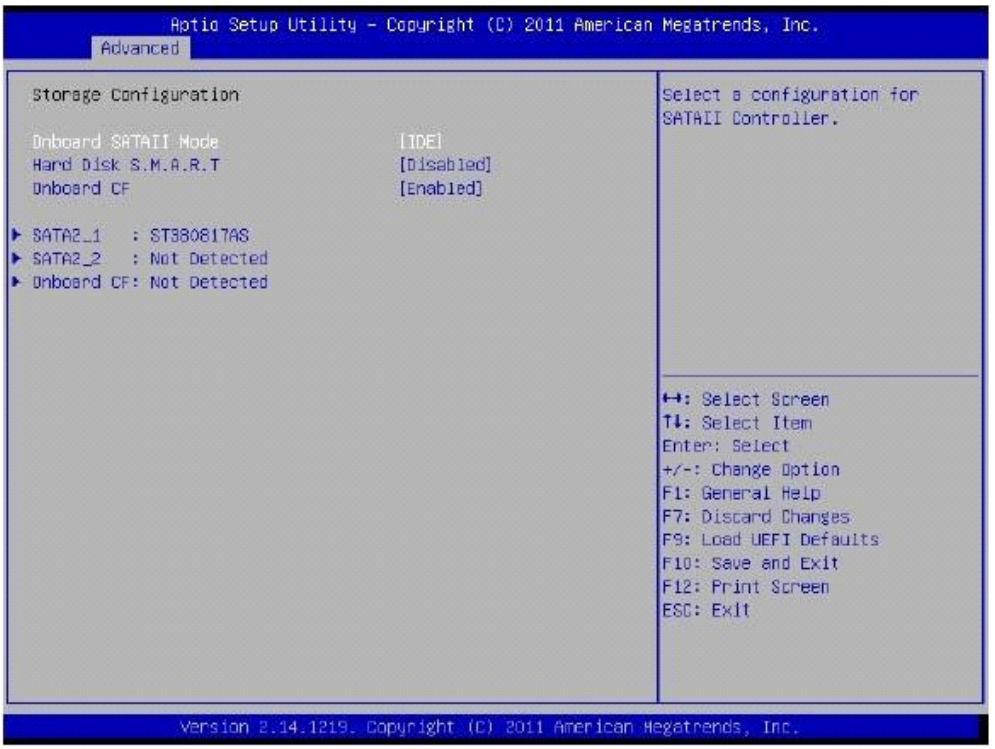
Onboard LAN 1

This allow you to enable or disable the “Onboard LAN 1” feature.

Onboard LAN 2

This allow you to enable or disable the “Onboard LAN 2” feature.

3-3.3 Storage Configuration



Onboard SATAII Mode

Use this to select SATA 2 mode. Configuration options: [IDE Mode], [AHCI Mode] and [Disabled]. The default value is [IDE Mode].

ACHI (Advanced Host Controller Interface) supports NCQ and other new features that will improve SATA disk performance but IDE mode does not have these advantage.

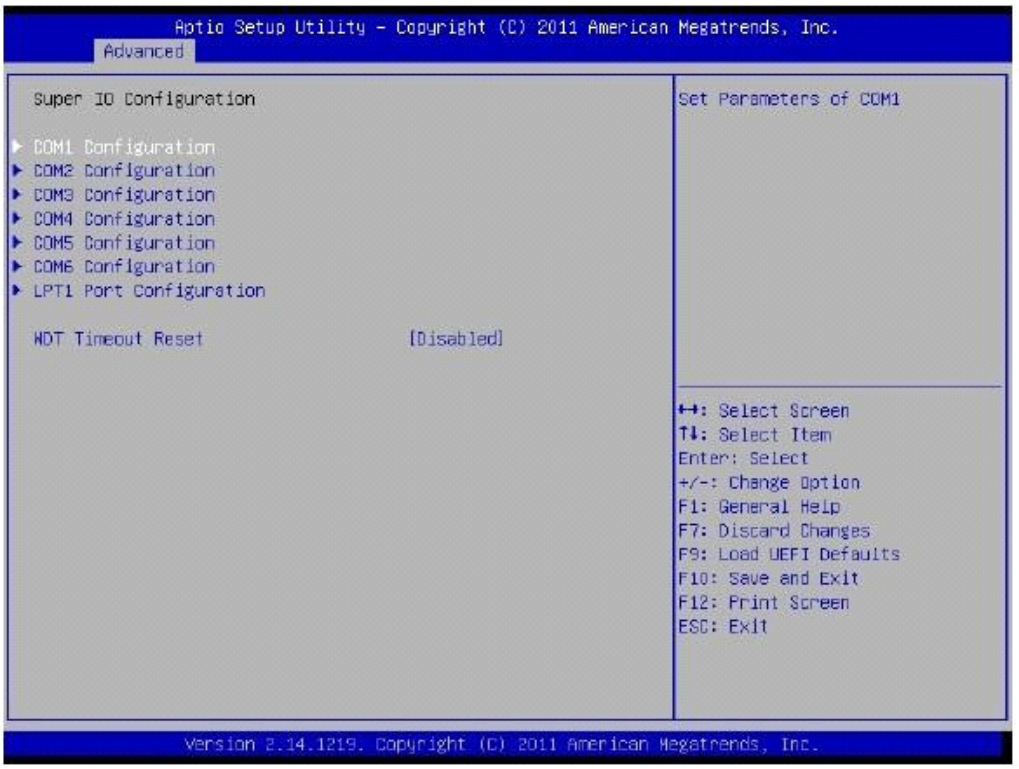
Hard Disk S.M.A.R.T

Use this item to enable or disable the S.M.A.R.T (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled] and [Enabled].

Onboard CF

This allows users to enable/ disable the onboard IDE controller for CF. The default value is [Enabled].

3-3.4 Super IO Configuration



COM 1 Configuration

Use this to set parameters of COM1.

COM 2 Configuration

Use this to set parameters of COM2.

COM 3 Configuration

Use this to set parameters of COM3.

COM 4 Configuration

Use this to set parameters of COM4.

COM 5 Configuration

Use this to set parameters of COM5.

COM 6 Configuration

Use this to set parameters of COM6.

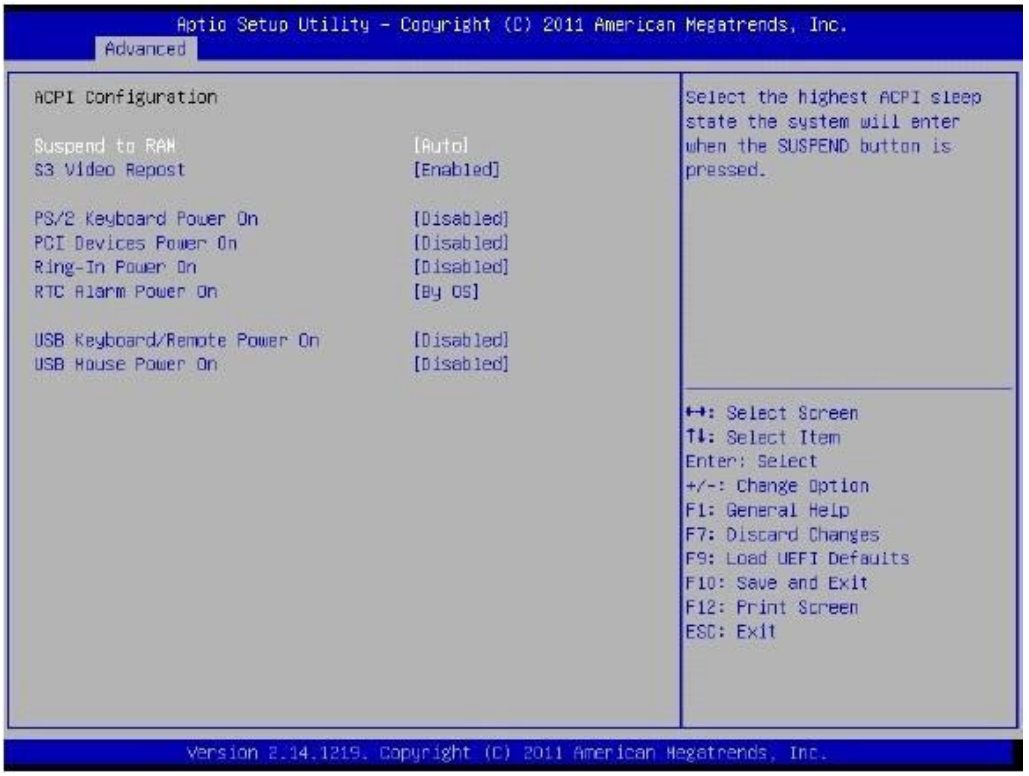
LPT1 Configuration

Use this to set parameters of the onboard parallel port.

WDT Timeout Reset

This allows users to enable/disable the Watch Dog Timer timeout to reset system. The default value is [Disabled].

3-3.5 ACPI Configuration



Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it.

S3 Video Repost

Use this to enable/disable S3 Video Repost. The default value is [Enabled].

PS/2 Keyboard Power On

Use this item to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

PCI Devices Power On

Use this item to enable or disable PCI devices to turn on the system from the power-soft-off mode.

Ring-In Power On

Use this item to enable to disable Ring-In signals to turn on the system from the power-soft-off mode.

RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

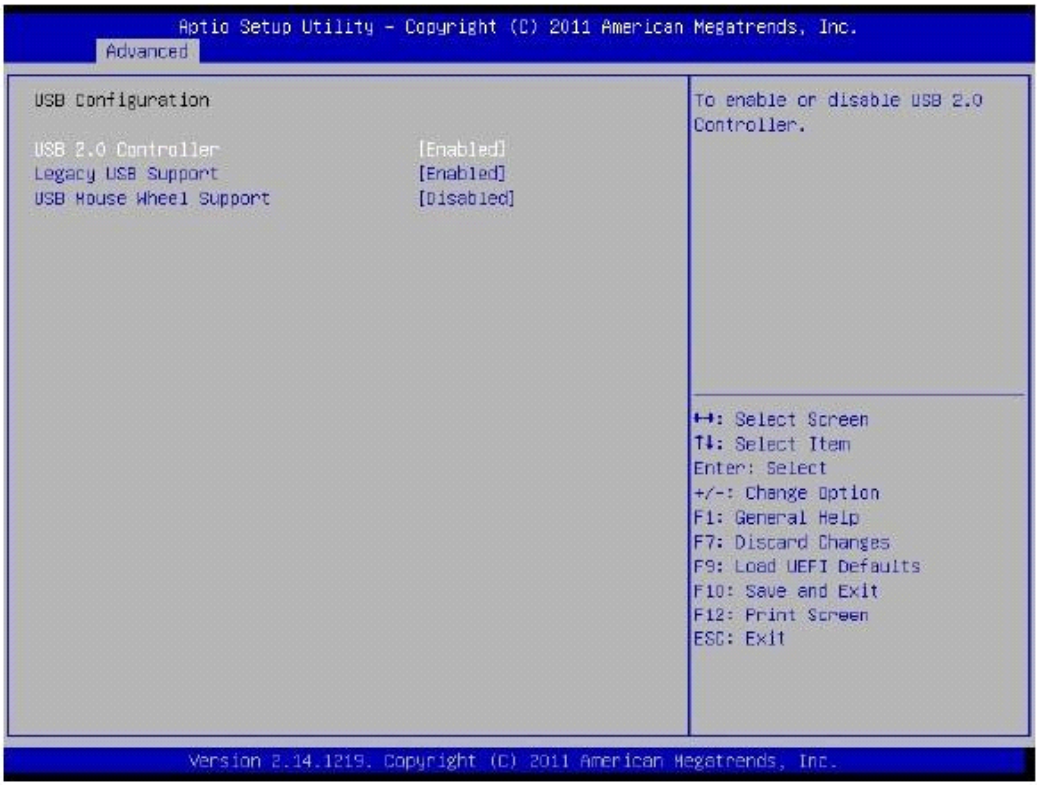
USB Keyboard/ Remote Power On

Use this item to enable or disable USB Keyboard/ Remote to power on the system.

USB Mouse Power On

Use this item to enable or disable USB Mouse to power on the system.

3-3.6 USB Configuration



USB 2.0 Controller

Use this item to enable or disable the use of USB 2.0 controller.

Legacy USB Support

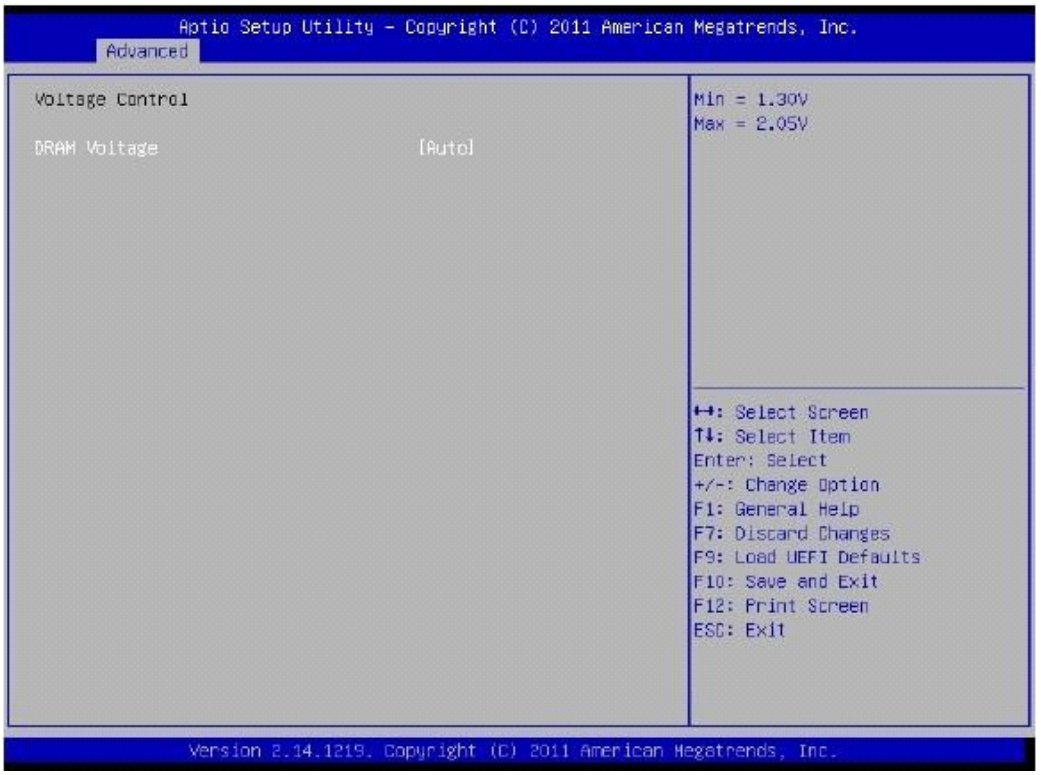
Use this option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto], [Disabled] and [UEFI Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options:

[**Enabled**]: Enables support for legacy USB.
[**Auto**]: Enables legacy support if USB devices are connected.
[**Disabled**]: USB devices are not allowed to use under legacy OS and UEFI setup when [Disabled] is selected. If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS.
[**UEFI Setup Only**]: USB devices are allowed to use only under UEFI setup and Windows/ Linus OS.

USB Mouse Wheel Support

Use this option to enable or disable USB Mouse Wheel Support. The default value is [Disabled].

3-3.7 Voltage Configuration

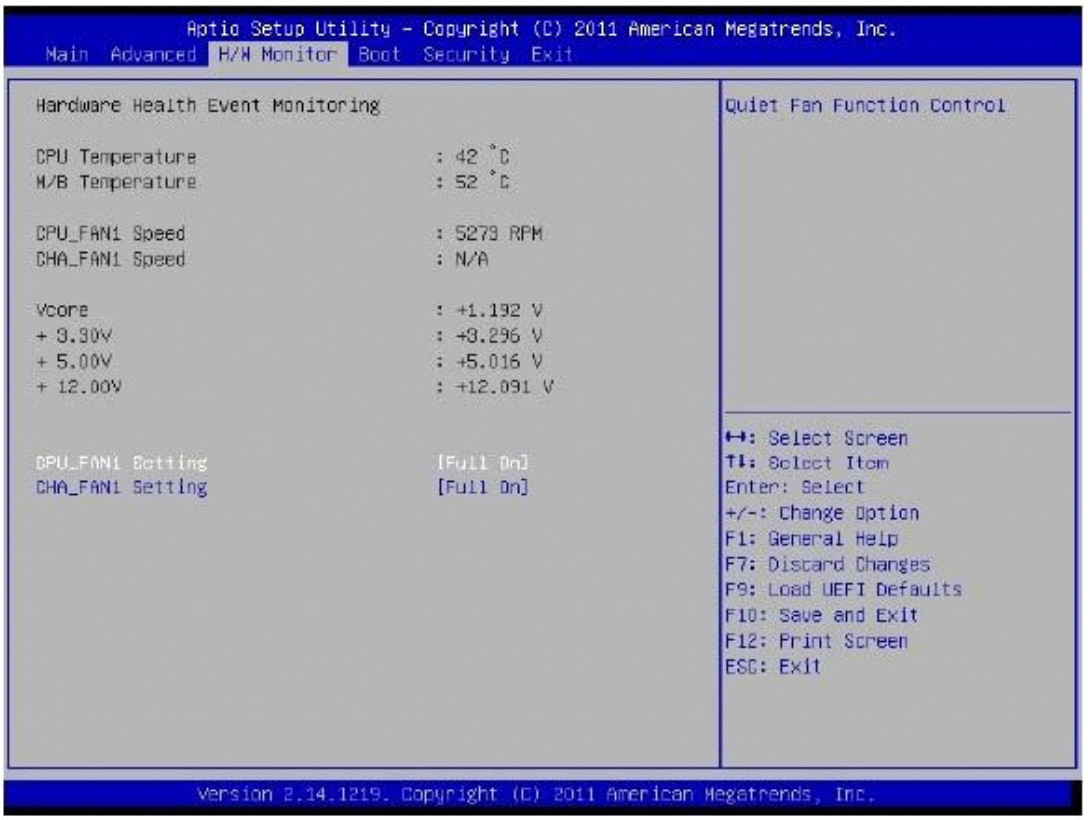


DRMA Voltage

Use this item to select DRMA Voltage. The default value is [Auto].

3-4 Hardware Health Event Monitoring Screen

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.



CPU_FAN 1 Setting

This allows you to set CPU-FAN 1's speed. Configuration options: [Full On] and [Automatic Mode]. The default value is [Full On].

CHA_FAN 1 Setting

This allows you to set CHA-FAN 1's speed. Configuration options: [Full On] and [Automatic Mode]. The default value is [Full On].

3-5 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.

Setup Prompt Timeout

This shows the number of seconds to wait for setup activation key.
65535 (0XFFFF) means indefinite waiting.

Bootup Num-Lock

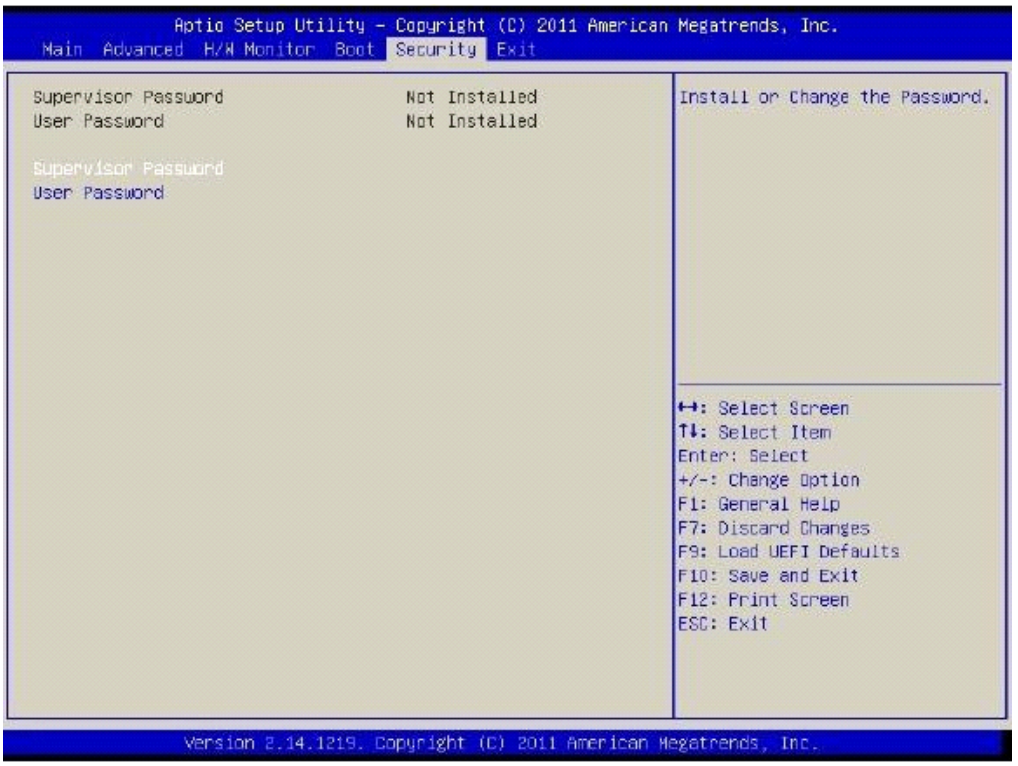
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

Boot From Onboard LAN

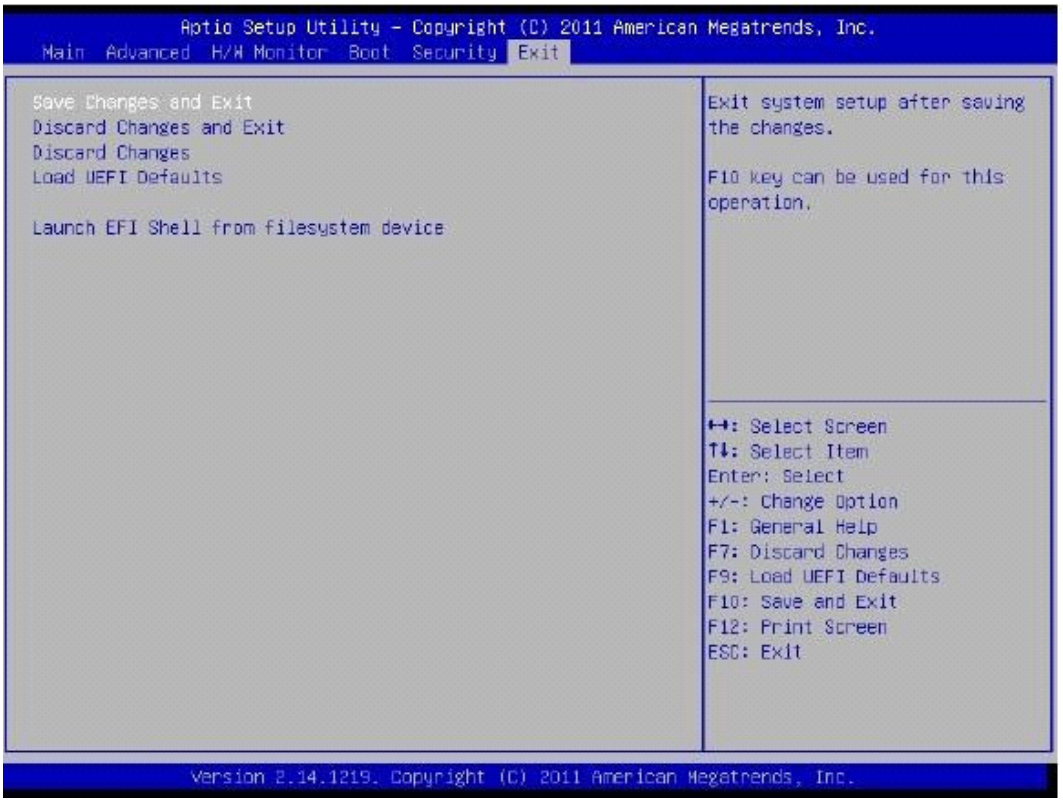
Use this item to enable or disable the Boot From Onboard LAN feature.

3-6 Security Screen

In this section, you may set, change or clear the supervisor/ user password for the system.



3-7 Exit Screen



Save Changes and Exit

When you select this optino, it will pop-out the following message, “Save configuration changes and exit setup?” Select [OK] to save the changes and exit the UEFI SETUP UTILITY.

Discard Changes and Exit

When you select this option, it will pop-out the following message, “Discard changes and exit setup?” Select [OK] to exit the UEFI SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, it will pop-out the following message, “Discard changes?” Select [OK] to discard all changes.

Load UEFI Defaults

Load UEFI default values for all the setup questions. F9 key can be used for this operation.

Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shell64.efi) from one of the available filesystem devices.

Chapter 4: Installation Guide

4-1. Memory Modules (SO-DIMM)

Pipal 2215 provides two 240-pin DDR3 SO-DIMM slots.

⚠ - It is NOT allowed to install a DDR or DDR2 memory module into a DDR 3 slot; otherwise, the motherboard and SO-DIMM may be damaged.

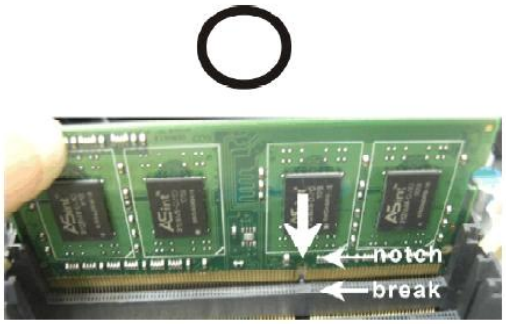
- Please install the memory module from DDR3_A2 slot as the 1st priority.

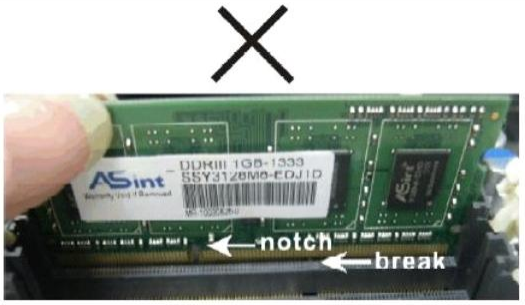
4-1.1 Installing a SO-DIMM

⚠ Please make sure to disconnect the power supply before adding or removing SO-DIMMs or the system components.

STEP 1: Unlock a SO-DIMM slot by pressing the retaining clips outward.

STEP 2: Align a SO-DIMM on the slot such that the notch on the SO-DIMM matches the break on the slot.





⚠ The SO-DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the SO-DIMM if you force the SO-DIMM into the slot in the incorrect orientation.

STEP 3: Firmly insert the SO-DIMM into the slot until the retaining clips at both ends fully snap back in place

and the SO-DIMM is properly seated.

4-2. Expansion Slot (PCI Slot)

There is 1 Mini-PCI-E expansion slot for **FES 2215**.

PCI Slot: The PCI slot is used to install an expansion card that has 32-bit PCI interface.

4-2.1 Installing an expansion card

STEP 1: Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware setting for the card before you start the installation.

STEP 2: Remove the system unit cover.

STEP 3: Remove the bracket facing the slot that you intend to use. Keep the screws for later use.

STEP 4: Align the card connector with the slot and press firmly until the card is completely seated on the slot.

STEP 5: Fasten the card to the chassis with screws.

STEP 6: Replace the system cover.