







# 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

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# **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 <sup>®</sup> 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 <sup>®</sup> 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.



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# **Chapter 1: Product Information**

# 1.1 Block Diagram



# **1.2 Specifications**

Processor & System	
СРИ Туре	Intel <sup>®</sup> Atom™ N2600 1.60GHz onboard
Chipset	Intel <sup>®</sup> NM10
Memory Type	1 x 204 pin SO-DIMM DDR3 800/1066 up to 2GB
BIOS	AMI <sup>®</sup> BIOS
Super I/O	ITE IT8783F
ТРМ	Infineon TPM1.2 SLB9635 (optional)
Expansion Slot	
	1 x Mini PCIe Slot
Display	
Chipset	Integrated Intel <sup>®</sup> GMA3600 VR Graphic core SGX545
DVI-I	Yes (Max. resolution 1920 x 1200 @60Hz)
LVDS	Supports 18/24-bit single/dual channel LVDS
	(Max. resolution 1600 x 1200 @60Hz)
Dual Independent	LVDS + DVI-I
Displays Capability	
Audio	
Codec	Realtek ALC269 High Definition Audio Codec
	*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
	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
СОМ3	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







# **Chapter 2: Jumpers and Connectors**

# 2.1 Jumper Settings

# PSON1: ATX/AT mode Selection

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

# **2.2** Connector Pin Definitions

## **ATX1:** Power input connector

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

# FAN: 3 pin FAN connector

Pin	Definition	
1	GND	
2	+12V	
3	FANIN_CPU	3 <u> </u> 0

# LPT1: LPT port pin header

Pin	Definition	Pin	Definition			
1	STB#	2	AFD#	1		
3	SPD0	4	ERROR#	T		2
5	SPD1	6	PINIT#		00	
7	SPD2	8	SLIN#		00	
9	SPD3	10	GND		00	
11	SPD4	12	GND		00	
13	SPD5	14	GND		00	
15	SPD6	16	GND		00	
17	SPD7	18	GND		00	
19	ACK#	20	GND		00	
21	BUSY	22	GND	25	00	26
23	PE	24	GND	25	0	20
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#	1	00	2
7	LVDS_B3	8	GND		00	
9	LVDS_B3#	10	LVDS_ACLK		00	
11	LVDS_B2	12	LVDS_ACLK #		00	
13	LVDS_B2#	14	GND		00	
15	LVDS_B1	16	LVDS_A2			
17	LVDS_B1#	18	LVDS_A2#		00	
19	LVDS_B0	20	LVDS_A1		00	
21	LVDS_B0#	22	LVDS_A1#		00	
23	GND	24	LVDS_A0	20	00	20
25	LVDS_DCC_SC	26	LVDS_A0#	29	00	30
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	ŏ
4	VCC_LVDSP	
5	VCC_LVDSP	
6	GND	
7	GND	0
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 0 8
7	MSCLK_SIO	8	KBCLK_SIO	

## FP1: Front Panel 1 Pin Header

Pin	Definition	Pin	Definition	
1	HDLED+	2	PLED+	1 2
3	HDD_ACT_	4	PLED-	
5	GND	6	PWRBTN_	
7	SYSRST_	8	GND	9 🔵 10
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 0 10
9	NC	10	GND	



### RUSB1: USB2.0 port 6 connector

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

# DIO1: Digital input/output pin header

Pin	Definition	Pin	Definition	
1	SBDO0	2	SBDIO	1 2
3	SBDO1	4	SBDI1	
5	SBDO2	6	SBDI2	
7	SBDO3	8	SBDI3	9 0 10
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 0 8
7	L_OUT_R	8	L_OUT_L	

# SPDIF1: SPDIF OUT pin header

Pin	Definition	1
1	+5V	
2	SPDIF_OUT	3
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	!  도 르!
R8	TD3-	G4	GND	
R9	TD4+			Link/Active Speed
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	18	TMDS Data0+	
	Shield			
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	9 10 11 12 13 14 15 16
8	Analog Vert. Sync	23	TMDS Clock+	
9	TMDS Data1-	24	TMDS Clock-	
10	TMDS Data1+	C1	Analog Red	
11	TMDS Data1/3	C2	Analog Green	
	Shield			
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+	1 5
4	DTR	RX-	NA	
5	GND	GND	GND	010.00
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	ŏ
4	CM_RTS	
5	CM_TXD	
6	CM_CTS	
7	CM_DTR	Õ
8	+CM2_P9 RI	
9	GND	"LGJ
10	+5VIO	

#### COM5: RS232

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

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	PERNO	24	+3.3VAUX	
25	PERPO	26	GND	
27	GND	28	+1.5V	
29	GND	30	SMB_CLK	
31	PETN0	32	SMB_DATA	
33	PETPO	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	

## MPCIE1: Mini PCIE connector

## DEBUG: Debug card connector

Pin	Definition		
1	DB_LPC_33M		7
2	RST_DB_R#	1	
3	LFRAME#		ŏ
4	LAD3		0
5	LAD2		
6	LAD1		Ю
7	LAD0		Q
8	+3.3V	10	
9	GND	10	L L L
10	GND		

## **BAT1: RTC battery connector**

Pin	Definition		]1
1	+3V	0	2
2	GND		1



## **CFAST: CFAST connector**

Pin	Segment	Definition	
S1	SATA	GND	
S2	SATA	A+	
S3	SATA	A-	
S4	SATA	GND	
S5	SATA	В-	
S6	SATA	B+	
S7	SATA	GND	
	Кеу		P17 P1 \$7 \$1
	Кеу		רמססססססססססססי
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	101	
PC11	PWR/CTL	102	
PC12	PWR/CTL	103	
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	ТХР	
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.</arrow>
Up/Down	The Up and Down <arrow> keys moves the cursor to select a setup</arrow>
	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.</tab>
F1	The <f1> key displays the General Help screen.</f1>
F10	The <f10> key saves any changes made and exits the BIOS setup utility.</f10>
Esc	The <esc> key discards any changes made and exits the BIOS setup</esc>
	utility.
Enter	The <enter> key displays a sub-screen or changes a selected or</enter>
	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.

BIOS Information	Annalisan Manakasada	Intel Reference Code
BIUS Vendor Core Version	American Megatrends	version
Compliancu	IFFT 2.3: PT 1.2	
Project Version	5318AT26 0.16.014	
Build Date and Time	04/24/2012 16:17:59	
System Language	[English]	
System Date	[Fri 05/04/2012]	++: Select Screen
System Time	[01:27:07]	↑↓: Select Item
		Enter: Select
Access Level	Administrator	+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Uptimized Defaults
		ECC. Evit

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.

Aptio Setup Utilit Advanced	y – Copyright (C) 2011 Ar	merican Megatrends, Inc.
PCI Bus Driver Versio	V 2.05.02	Value to be programmed into PCI Latency Timer Register.
PCI Common Settings PCI Latency Timer VGA Palette Snoop PERR# Generation SERR# Generation	[32 PCI Bus Clocks] [Disabled] [Disabled] [Disabled]	
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219	. Copyright (C) 2011 Amer	rican Megatrends, Inc.

## **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.

ACPI Settings		Enables or Disables BIOS ACPI Auto
		Configuration.
Enable Hibernation ACPI Sleep State Lock Legacy Resources S3 Video Repost	[Enabled] [S3 (Suspend to RAM)] [Disabled] [Disabled]	
		★+: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

### 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.

Aptio Setup Utili Advanced	ty – Copyright (C) 2011 Ame	rican Megatrends, Inc.
CPU Configuration		Enabled for Windows XP
Processor Type	Thtel(R) Atom(TM) CPU	for Hyper-Threading
EMT64	Not Supported	Technology) and
Processor Speed	2132 MHz	Disabled for other OS
System Bus Speed	533 MHz	(OS not optimized for
Ratio Status	16	Hyper-Threading
Actual Ratio	16	Technology).
System Bus Speed	533 MHz	
Processor Stepping	30661	
Microcode Revision	268	→+: Select Screen
L1 Cache RAM	2x56 k	<b>↑↓:</b> Select Item
L2 Cache RAM	2x512 k	Enter: Select
Processor Core	Dual	+/-: Change Opt.
Hyper-Threading	Supported	F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
Execute Disable Bit	[Enabled]	F4: Save & Exit
Limit CPUID Maximum	[Disabled]	ESC: Exit
Vencion 9 44 4940	2 Conuniabt (C) 9011 Amoni	non Novetnende Tre
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## **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<sup>™</sup> support of the Intel<sup>®</sup> Pentium<sup>®</sup> 4 HT processor. By default this setting is enabled. This setting should be disabled in Microsoft<sup>™</sup> 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 Port0	Not Present	SATA Ports (0–3) Device
SATA Port1	Not Present	Names if Present and Enabled.
Configure SATA as	[AHCI]	
PortO Speed Limit	[No Limit]	
Port1 Speed Limit	[No Limit]	
SATA Port 0	[Enabled]	
SATA Port 0 Hot P	[Enabled]	→+: Select Screen
SATA Port 1	[Enabled]	<b>1↓:</b> Select Item
SATA Port 1 Hot P	[Enabled]	Enter: Select
Mice Configuration for	hand dick	F1: Ceneral Help
HISC CONTIGUIACIÓN FOI	nai a atsk	F2: Previous Values
		F3: Ontimized Defaults
		F4: Save & Evit
		ESC: Exit

## 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

Aptio Setup Ut: Advanced	lity – Copyright (C) 20.	11 American Megatrends, Inc.
iFFS Support	[Disabled]	Enable or disable iFFS. ++: Select Screen 14: Select Item
		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit



## 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:

<u>Option</u>	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.

<u>Option</u>	<u>Description</u>
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.

Super IO Configuration	Set Parameters of Serial Port O (COMA)
Super IO Chip IT6783F Serial Port 0 Configuration Serial Port 2 Configuration Serial Port 2 Configuration Serial Port 3 Configuration Parallel Port Configuration Parallel Port Configuration	
COMO Pin9 Voltage [OV] COMI Pin9 Voltage [OV] COM2 Pin9 Voltage [OV] COM3 Pin9 Voltage [OV]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit FS: Fxit

### **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.

Aptio Setup Utility – Copyright (C) 2011 Advanced	American Megatrends, Inc.
Pc Health Status	Smart Fan Mode Select
Smart Fan 1 Mode [Full on Mode]	
	++: Select Screen 11: Select Item Enter: Select
	+/-: Change Upt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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### 4.4.12 H/W Monitor

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

Pc Health Status		
CPU temperature1 System temperature2 Fan1 Speed VIN0 VIN1 VIN2 VIN3 VIN4 VIN4 VIN4 VIN6 VIN7 VBAT	: +70 C : +31 C : 7500 RPM : +1.184 V : +1.040 V : +3.312 V : +4.972 V : +12.160 V : +1.520 V : +0.896 V : +3.184 V	★+: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaultes
		F4: Save & Exit

### **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.



This item allows users to enable or disabled AOAC function.



### 4.4.14 Demo Board

This item helps users for CRB test.

	Help for CRB Test
	Enter: Select +/−: Change Opt. F1: General Help F2: Previous Values
	F3: Optimized Defaults F4: Save & Exit ESC: Exit

### 4.4.15 Serial Port Console Redirection

This setting allows the user to enable or disable console redirection



**PerfecTron** 



## **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.

		Config Memory Frequency
Intel IGD Configuration		and Timing Settings.
жжжжжжж Memory Infor	mation жжжжжж	
Memory Frequency	1067 MHz(DDR3)	
Total Memory	2048 MB	
DIMM#0	Not Present	
DIMM#1	2048 MB	
		++ Select Screen
		11: Select Item
		Enter: Select
		+/-: Change Ont
		E1: Ceneral Heln
		E2: Provious Values
		E2: Detimized Defaulte
		F4: Coup 0 Suit
		TH. DAVE & LAIL

#### **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

Main Advanced Chips	et Boot Security Save &	Exit
Boot Configuration		▲ Number of seconds to
	1	wait for setup
Bootup NumLock State	[0n]	activation key.
		65535(0xFFFF) means
Quiet Boot	[Disabled]	indefinite waiting.
Fast Boot	[Enabled]	
Skip VGA	[Disabled]	
Skip USB	[Disabled]	
Skip PS2	[Disabled]	
CSM16 Module Version	07.69	++: Select Screen
Pata020 Actius	[Upon Poquect]	Fatan: Salast
Option POM Moccodes	[Eenco_RI02]	Litter · Select
INTIG Toop Persones	[Tumodiata]	E1: Cononal Hain
CCM Support	[Inneulate]	E2: Provious Values
Con Support	[Liidb1eu]	F2. Optimized Defeulte
Post Option Priorition		E4. Coup & Evit
Doot Option #1	[Booltok BVE BOO BOO]	= FOR, Fuit
DOD( 00(10) #1	[REGILEK FAE BUZ DUU]	* COU- EXIL

### 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

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc. Main Advanced Chipset Boot Security <mark>Save &amp; Exit</mark>	
	Exit system setup after
Discard Changes and Exit	saving the changes.
Save Changes and Reset	
Discard Changes and Reset	
Save Options	
Save Changes	
Discard Changes	
Restore Defaults	
Save as User Defaults	++: Select Screen
Restore User Defaults	↑↓: Select Item
	Enter: Select
Boot Override	+/-: Change Opt.
Realtek PXE B02 D00	F1: General Help
	F2: Previous Values
Launch EFI Shell from filesystem device	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
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AE	

#### 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>.