ET850

AMD Athlon™ II / Turion™ II Neo CPU
785E + SB820M
COM Express (Type II) CPU Module

USER'S MANUAL

Version 1.0A

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The ET850 COM Express CPU Module

Introduction

Product Description

The ET850 COM Express Module comes on board with the AMD Athlon II Neo or AMD TurioT II Neo processors and powered by the AMD 785E + SB820M chipset. The chipset has built-in Radeon HD4200 graphics engine with enhanced operating modes to enable excellent graphics performance in power and embedded applications. The
DirectX® 10.1 feature lets you enjoy awesome graphics performance, stunning 3D visual effects and dynamic Interactivity.

The board has one DDR3-800 SO-DIMM socket supporting up to 4GB of system memory. ET850 supports high speed connectivity with two SATA III, four serial ports, eight USB and a Gigabit LAN controller. Dimensions of the CPU module are 95mm x 125mm.

ET850 Features

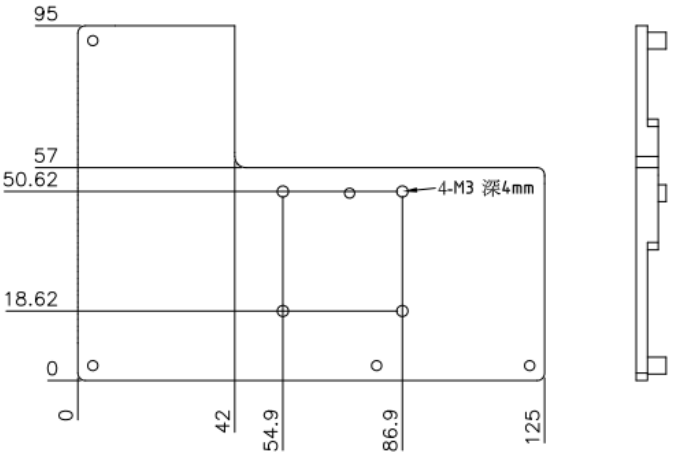
- AMD Athlon™ II Neo / Turion™ II Neo Processors onboard, up to 2.2GHz
- 1x DDR3-800/1333 SO-DIMM, Max. 4GB
- Integrated VGA, supports CRT & LVDS
- Watchdog timer, HD Audio
- 2x SATA II, 1x GbE, 8x USB 2.0, 4x COM via baseboard

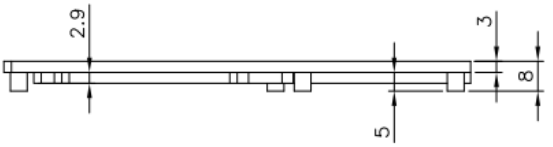
Checklist

Your ET850 package should include the items listed below.

- The ET850 CPU Module
- Heat spreader for ET850
- This User's Manual
- 1 CD containing the following:
  - Chipset Drivers
  - Flash Memory Utility

Remarks: After installing the heat spreader (provided with the CPU module), please install an additional heat spreader for better heat dissipation.

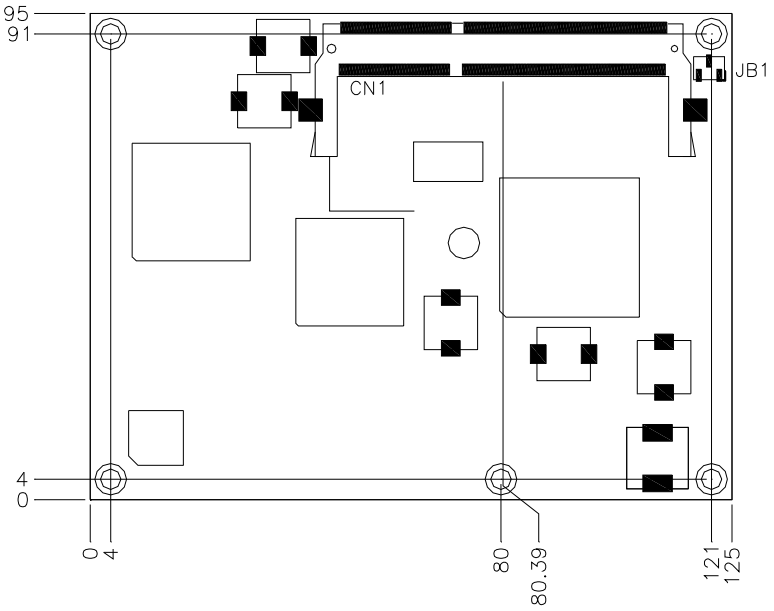




ET850 Specifications

Product Name	ET850
Form Factor	COM Express CPU module
CPU Type	AMD Geneva ASB2 Turion™ II Neo / Athlon™ II Neo DC CPU
CPU Operate Frequency	Dual-Core CPU (27 x 27 mm) /45nm SOI / ECC capable FSB up to 3200 MHz Hyper Transport AMD Athlon™ II Neo N36L=1.3GHz DC (12W) [ET850-13] AMD Turion™ II Neo N54L=2.2GHz DC (25W) [ET850-22] AMD Turion™ II Neo N54H=2.2GHz DC (25W) [ET850-22H]
Cache	2MB
CPU Socket	812-ball BGA ASB2 CPU on board
Chipset	AMD 785E NB : 21 mm x 21 mm AMD SB820M SB: 21mm x 21mm
BIOS	AMI BIOS
Memory	DDRIII-800 SO-DIMM x1 , Max. 4GB (Non-ECC) ** Please note N54H can support to 1333MHz**
VGA	AMD 785E built-in ATi HD4200 Graphics Core CRT w/ DF13 connector (via internal RAM DAC)
LVDS	AMD 785E built-in 1 x 24-bit dual channels w/ DF13 socket x2 (via LVTM)
LAN	Realtek 8111DL PCI-Express GbE x 1
USB	SB820M built-in USB 2.0 host controller, supports 8 ports
Serial ATA Ports	SB820M built-in controller, supports 2 ports for SATA 3.0 (6 Gb/s)
Parallel IDE	JMicron JM368 (PCI-e to PATA) x1 for 1 PATA channel for IDE
Audio	SB820M Built-in Audio controller + HD Codec ALC662 w/ 6 channels (Line-out, Line-in, Mic.)
RTC	SB820M built-in RTC with on board battery
Watch-Dog Timer	Yes (256 segments, 0, 1, 2…255. sec/min)
Connector to Carrier Board	Two 220-pin connectors (A-B & C-D) [COM Express 2.0 standard]
Power	+5V, +3.3V, +12V ,+5VSB
Other	LAN Wakeup
RoHS	Yes
Board Size	95mm x 125mm

Dimensions



Remarks: After installing the heat spreader (provided with the CPU module), please install an additional heat spreader for better heat dissipation.

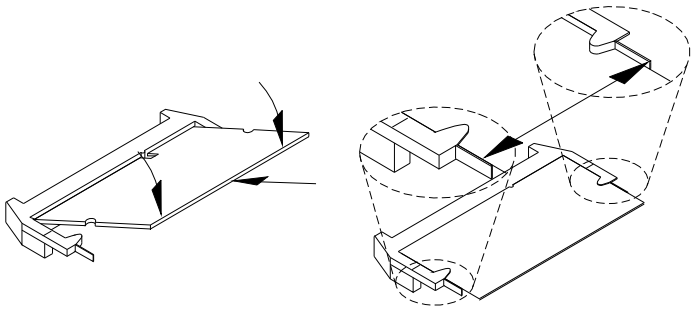
Installing the Memory

The ET850 COM Express CPU module accommodates 240-pin DDR3 SODIMM memory modules with capacities up to 4GB. Non-ECC is supported.

Installing and Removing Memory Modules

To install the DDR3 modules, locate the memory slot on the board and perform the following steps:

1. Hold the DDR3 module so that the key of the DDR3 module align with those on the memory slot. Insert the module into the socket at a slight angle (approximately 30 degrees). Note that the socket and module are both keyed, which means that the module can be installed only in one direction.
2. To seat the memory module into the socket, apply firm and even pressure to each end of the module until you feel it slip down into the socket.
3. With the module properly seated in the socket, rotate the module downward. Continue pressing downward until the clips at each end lock into position.
4. To remove the DDR3 module, press the clips with both hands.



Jumpers and Connectors on ET850

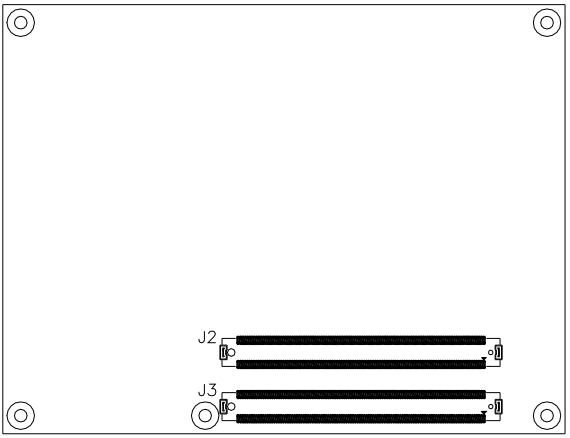
JB1: Clear CMOS Setting

JB1	Setting
	Normal
	Clear CMOS

Note: With jumper pin 1-2 short, it automatically saves the last BIOS settings when battery is removed, but it is not case with jumper pin 2-3 short.

J2, J3: COM Express Type 2 Connectors

The Type 2 connectors come in two 220-pin 0.5mm pitch receptacles. They include PCI, IDE, GBE and up to 22 general-purpose PCIE lanes (PCIE 0-5 and PCIE 16-31). For most Type 2 implementations, it is expected that PCIE lanes 16-31 are used for graphics. Hence they are designated PEG lanes 0-15 in the following table. Modules implementing Pin out Type 2, such as the ET850, uses the pin-out shown.



COM Express Type 2 Connectors

Row A		Row B		Row C		Row D	
Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
A1	GND (FIXED)	B1	GND (FIXED)	C1	GND (FIXED)	D1	GND (FIXED)
A2	GBE0_MDI3-	B2	GBE0_ACT#	C2	IDE_D7	D2	IDE_D5
A3	GBE0_MDI3+	B3	LPC_FRAME#	C3	IDE_D6	D3	IDE_D10
A4	GBE0_LINK100#	B4	LPC_AD0	C4	IDE_D3	D4	IDE_D11
A5	GBE0_LINK1000#	B5	LPC_AD1	C5	IDE_D15	D5	IDE_D12
A6	GBE0_MDI2-	B6	LPC_AD2	C6	IDE_D8	D6	IDE_D4
A7	GBE0_MDI2+	B7	LPC_AD3	C7	IDE_D9	D7	IDE_D0
A8	GBE0_LINK#	B8	LPC_DRQ0#	C8	IDE_D2	D8	IDE_REQ
A9	GBE0_MDI1-	B9	LPC_DRQ1#	C9	IDE_D13	D9	IDE_IOW#
A10	GBE0_MDI1+	B10	LPC_CLK	C10	IDE_D1	D10	IDE_ACK#
A11	GND (FIXED)	B11	GND (FIXED)	C11	GND (FIXED)	D11	GND (FIXED)
A12	GBE0_MDI0-	B12	PWRBTN#	C12	IDE_D14	D12	IDE_IRQ
A13	GBE0_MDI0+	B13	SMB_CK	C13	IDE_IORDY	D13	IDE_A0
A14	GBE0_CTREF	B14	SMB_DAT	C14	IDE_IOR#	D14	IDE_A1
A15	SUS_S3#	B15	SMB_ALERT#	C15	PCI_PME#	D15	IDE_A2
A16	SATA0_TX+	B16	SATA1_TX+	C16	PCI_GNT2#	D16	IDE_CS1#
A17	SATA0_TX-	B17	SATA1_TX-	C17	PCI_REQ2#	D17	IDE_CS3#
A18	NC	B18	SUS-STAT#	C18	PCI_GNT1#	D18	IDE_RESET#
A19	SATA0_RX+	B19	SATA1_RX+	C19	Pci_REQ1#	D19	PCI_GNT3#
A20	SATA0_RX-	B20	SATA1_RX-	C20	PCI_GNT0#	D20	PCI_REQ3#
A21	GND (FIXED)	B21	GND (FIXED)	C21	GND (FIXED)	D21	GND (FIXED)
A22	NC	B22	NC	C22	PCI_REQ0#	D22	PCI_AD1
A23	NC	B23	NC	C23	PCI_RESET#	D23	PCI_AD3
A24	SUS_S5#	B24	PWR_OK	C24	PCI_AD0	D24	PCI_AD5
A25	NC	B25	NC	C25	PCI_AD2	D25	PCI_AD7
A26	NC	B26	NC	C26	PCI_AD4	D26	PCI_C/BE0#
A27	BATLOW#	B27	WDT	C27	PCI_AD6	D27	PCI_AD9
A28	SATA_ACT#	B28	HDA_SDIN2	C28	PCI_AD8	D28	PCI_AD11
A29	HDA_SYNC	B29	HDA_SDIN1	C29	PCI_AD10	D29	PCI_AD13
A30	HDA_RST#	B30	HDA_SDIN0	C30	PCI_AD12	D30	PCI_AD15
A31	GND (FIXED)	B31	GND (FIXED)	C31	GND (FIXED)	D31	GND (FIXED)
A32	HDA_BITCLK	B32	SPKR	C32	PCI_AD13	D32	PCI_PAR
A33	HDA_SDOUT	B33	I2C_CK	C33	PCI_C/BE1#	D33	PCI_SERR#
A34	BIOS_DIS0#	B34	I2C_DAT	C34	PCI_PERR#	D34	PCI_STOP#
A35	THRMTRIP#	B35	THRM#	C35	PCI_LOCK#	D35	PCI_TRDY#
A36	USB6-	B36	USB7-	C36	PCI_DEVSEL#	D36	PCI_FRAME#
A37	USB6+	B37	USB7+	C37	PCI_IRDY#	D37	PCI_AD16
A38	USB_6_7_OC#	B38	USB_4_5_OC#	C38	PCI_C/BE2#	D38	PCI_AD18
A39	USB4-	B39	USB5-	C39	PCI_AD17	D39	PCI_AD20
A40	USB4+	B40	USB5+	C40	PCI_AD19	D40	PCI_AD22
A41	GND (FIXED)	B41	GND (FIXED)	C41	GND (FIXED)	D41	GND (FIXED)
A42	USB2-	B42	USB3-	C42	PCI_AD21	D42	PCI_AD24
A43	USB2+	B43	USB3+	C43	PCI_AD23	D43	PCI_AD26
A44	USB_2_3_OC#	B44	USB_0_1_OC#	C44	PCI_C/BE3#	D44	PCI_AD28
A45	USB0-	B45	USB1-	C45	PCI_AD25	D45	PCI_AD30
A46	USB0+	B46	USB1+	C46	PCI_AD27	D46	PCI_IRQC#
A47	VCC_RTC	B47	EXCD1_PERTST#	C47	PCI_AD29	D47	PCI_IRQD#
A48	EXCD0_PERST#	B48	EXCD1_CPPE#	C48	PCI_AD31	D48	PCI_CLKRUN#
A49	EXCD0CPPE#	B49	SYS_RESET#	C49	PCI_IRQA#	D49	NC
A50	LPC_SERIRQ	B50	CB_RESET#	C50	PCI_IRQB3	D50	PCI_CLK

Row A		Row B		Row C		Row D	
Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
A51	GND (FIXED)	B51	GND (FIXED)	C51	GND (FIXED)	D51	GND (FIXED)
A52	PCIE_TX5+	B52	PCIE_RX5+	C52	PEG_RX0+	D52	PEG_TX0+
A53	PCIE_TX5-	B53	PCIE_RX5-	C53	PEG_RX0-	D53	PEG_TX0-
A54	GPI0	B54	GPO1	C54	NC	D54	PEG_LANE_RV#
A55	PCIE_TX4+	B55	PCIE_RX4+	C55	PEG_RX1+	D55	PEG_TX1+
A56	PCIE_TX4-	B56	PCIE_RX4-	C56	PEG_RX1-	D56	PEG_TX1-
A57	GND	B57	GPO2	C57	NC	D57	NC
A58	PCIE_TX3+	B58	PCIE_RX3+	C58	PEG_RX2+	D58	PEG_TX2+
A59	PCIE_TX3-	B59	PCIE_RX3-	C59	PEG_RX2-	D59	PEG_TX2-
A60	GND (FIXED)	B60	GND (FIXED)	C60	GND (FIXED)	D60	GND (FIXED)
A61	PCIE_TX2+	B61	PCIE_RX2+	C61	PEG_RX3+	D61	PEG_TX3+
A62	PCIE_TX2-	B62	PCIE_RX2-	C62	PEG_RX3-	D62	PEG_TX3-
A63	GPI1	B63	GPO3	C63	RSVD	D63	RSVD
A64	PCIE_TX1+	B64	PCIE_RX1+	C64	RSVD	D64	RSVD
A65	PCIE_TX1-	B65	PCIE_RX1-	C65	PEG_RX4+	D65	PEG_TX4+
A66	GND	B66	WAKE0#	C66	PEG_RX4-	D66	PEG_TX4-
A67	GPI2	B67	WAKE1#	C67	RSVD	D67	GND
A68	PCIE_TX0+	B68	PCIE_RX0+	C68	PEG_RX5+	D68	PEG_TX5+
A69	PCIE_TX0-	B69	PCIE_RX0-	C69	PEG_RX5-	D69	PEG_TX5-
A70	GND (FIXED)	B70	GND (FIXED)	C70	GND (FIXED)	D70	GND (FIXED)
A71	LVDS_A0+	B71	LVDS_B0+	C71	PEG_RX6+	D71	PEG_TX9+
A72	LVDS_A0-	B72	LVDS_B0-	C72	PEG_RX6-	D72	PEG_TX9-
A73	LVDS_A1+	B73	LVDS_B1+	C73	SDVO_DATA	D73	SDVO_CLK
A74	LVDS_A1-	B74	LVDS_B1-	C74	PEG_RX7+	D74	PEG_TX7+
A75	LVDS_A2+	B75	LVDS_B2+	C75	PEG_RX7-	D75	PEG_TX7-
A76	LVDS_A2-	B76	LVDS_B2-	C76	GND	D76	GND
A77	LVDS_VDD_EN	B77	LVDS_B3+	C77	RSVD	D77	IDE_CBLID#
A78	LVDS_A3+	B78	LVDS_B3-	C78	PEG_RX8+	D78	PEG_TX8+
A79	LVDS_A3-	B79	LVDS_BKLT_EN	C79	PEG_RX8-	D79	PEG_TX8-
A80	GND (FIXED)	B80	GND (FIXED)	C80	GND (FIXED)	D80	GND (FIXED)
A81	LVDS_A_CK+	B81	LVDS_B_CK+	C81	PEG_RX9+	D81	PEG_TX9+
A82	LVDS_A_CK-	B82	LVDS_B_CK-	C82	PEG_RX9-	D82	PEG_TX9-
A83	LVDS_I2C_CK	B83	LVDS_BKLT_Ctrl	C83	RSVD	D83	RSVD
A84	LVDS_I2C_DAT	B84	VCC_5V_SBY	C84	GND	D84	GND
A85	GPI3	B85	VCC_5V_SBY	C85	PEG_RX10+	D85	PEG_TX10+
A86	KBD_RSD#	B86	VCC_5V_SBY	C86	PEG_RX10-	D86	PEG_TX10-
A87	KBD_A20GATE	B87	VCC_5V_SBY	C87	GND	D87	GND
A88	PCIE0_CK_REF+	B88	BIOS_DIS1#	C88	PEG_RX11+	D88	PEG_TX11+
A89	PCIE0_CK_REF-	B89	VGA_RED	C89	PEG_RX11-	D89	PEG_TX11-
A90	GND (FIXED)	B90	GND (FIXED)	C90	GND (FIXED)	D90	GND (FIXED)
A91	SPI_POWER	B91	VGA_GRN	C91	PEG_RX12+	D91	PEG_TX12+
A92	SPI_MISO	B92	VGA_BLU	C92	PEG_RX12-	D92	PEG_TX12-
A93	GPO0	B93	VGA_HSYNC	C93	GND	D93	GND
A94	SPI_CLK	B94	VGA_VSYNC	C94	PEG_RX13+	D94	PEG_TX13+
A95	SPI_MOSI	B95	VGA_I2C_CK	C95	PEG_RX13-	D95	PEG_TX13-
A96	GND	B96	VGA_I2C_DATA	C96	GND	D96	GND
A97	NC	B97	SPI_CS#	C97	RSVD	D97	PEG_ENABLE#
A98	RSVD	B98	RSVD	C98	PEG_RX14+	D98	PEG_TX14+
A99	RSVD	B99	RSVD	C99	PEG_RX14-	D99	PEG_TX14-
A100	GND (FIXED)	B100	GND (FIXED)	C100	GND (FIXED)	D100	GND (FIXED)
A101	RSVD	B101	RSVD	C101	PEG_RX15+	D101	PEG_TX15+
A102	RSVD	B102	RSVD	C102	PEG_RX15-	D102	PEG_TX15-
A103	RSVD	B103	RSVD	C103	GND	D103	GND
A104	VCC_12V	B104	VCC_12V	C104	VCC_12V	D104	VCC_12V
A105	VCC_12V	B105	VCC_12V	C105	VCC_12V	D105	VCC_12V
A106	VCC_12V	B106	VCC_12V	C106	VCC_12V	D106	VCC_12V
A107	VCC_12V	B107	VCC_12V	C107	VCC_12V	D107	VCC_12V
A108	VCC_12V	B108	VCC_12V	C108	VCC_12V	D108	VCC_12V
A109	VCC_12V	B109	VCC_12V	C109	VCC_12V	D109	VCC_12V
A110	GND (FIXED)	B110	GND (FIXED)	C110	GND (FIXED)	D110	GND (FIXED)

BIOS Setup

This chapter describes the different settings available in the AMI (American Megatrends, Inc.) BIOS that comes with the board. The topics covered in this chapter are as follows:

BIOS Introduction 10
BIOS Setup 10
Main BIOS Setup 11
Advanced Settings 12
PCIPnP Settings 19
Boot Settings 20
Security Settings 22
Advanced Chipset Settings 23
Exit Setup 28
Save Changes and Exit 28
Discard Changes and Exit 28
Discard Changes 28
Load Optimal Defaults 28
Load Failsafe Defaults 28

BIOS Introduction

The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the ”Reset” button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

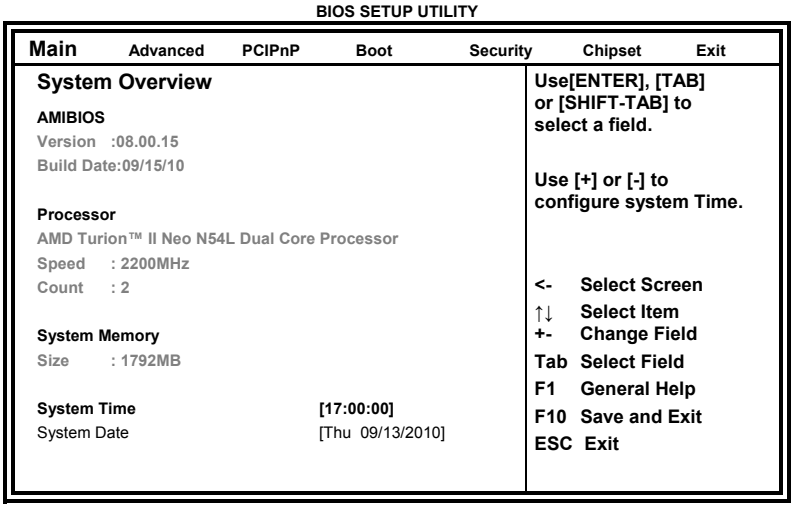
```
Press  <DEL>  to  Enter  Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Main BIOS Setup

This setup allows you to record some basic hardware configurations in your computer system and set the system clock.

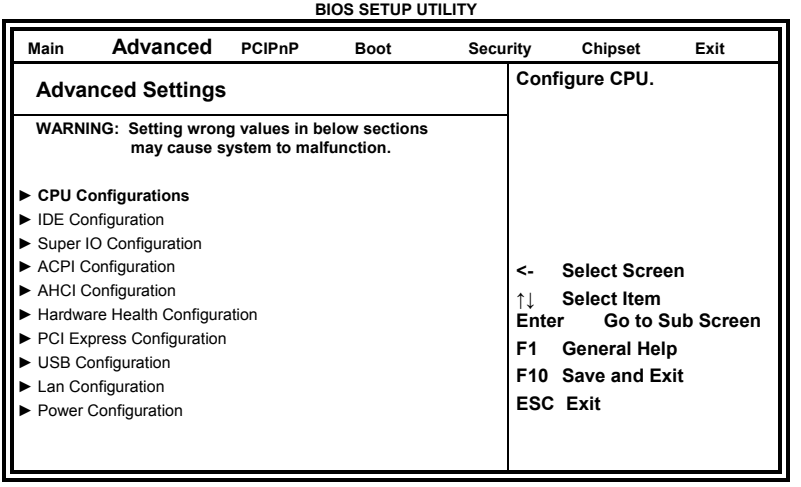


***Note**: If the system cannot boot after making and saving system changes with Setup, the AMI BIOS supports an override to the CMOS settings that resets your system to its default.*

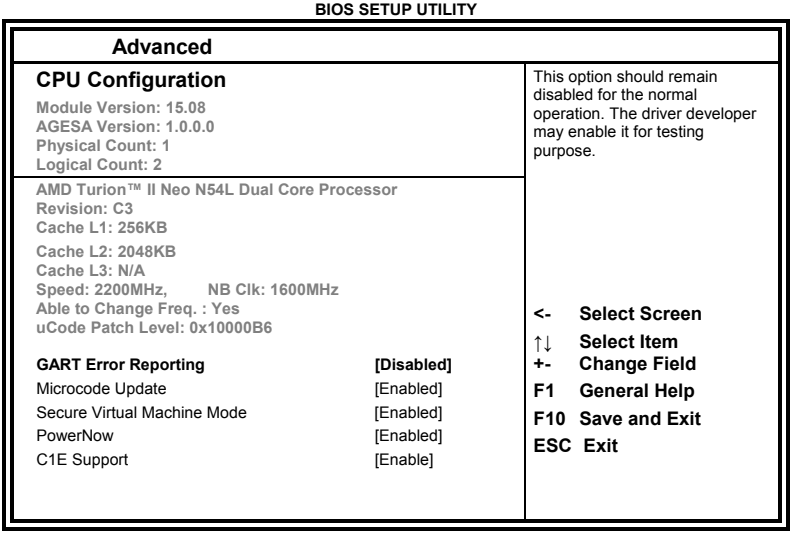
***Warning:** It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

Advanced Settings

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



The fields in each section are shown in the following sections, as seen in the computer screen. Please note that setting the wrong values may cause the system to malfunction. If unsure, please contact technical support of your supplier.



BIOS SETUP UTILITY

Advanced

IDE Configuration

OnBoard PCI IDE Controller	**[Both]**
► Primary IDE Master	: [Not Detected]
► Primary IDE Slave	: [Not Detected]
► Secondary IDE Master	: [Not Detected]
► Secondary IDE Slave	: [Not Detected]
► Third IDE Master	: [Not Detected]
► Third IDE Slave	: [Not Detected]
► Fourth IDE Master	: [Not Detected]
► Fourth IDE Slave	: [Not Detected]
Hard Disk Write Protect	[Disabled]
IDE Detect Time Out (Sec)	[35]
ATA(PI) 80Pin Cable Detection	[Host & Device]

DISABLED: disables the integrated IDE Controller.
PRIMARY: enables only the Primary IDE Controller.
SECONDARY: enables only the Secondary IDE Controller.
BOTH: enables both IDE Controllers.

<- Select Screen
↑↓ Select Item
+- Change Field
F1 General Help
F10 Save and Exit
ESC Exit

The IDE Configuration menu is used to change and/or set the configuration of the IDE devices installed in the system.

BIOS SETUP UTILITY

Advanced		
Configure Win627EHF Super IO Chipset		Allows BIOS to Select Serial Port Base Addresses
Floppy A	[Disabled]	
Serial Port1 Address	[3F8/IRQ4]	
Serial Port2 Address	[2F8/IRQ3]	
Serial Port2 Mode	[Normal]	
Parallel Port1 Address	[378]	
Parallel Port Mode	[Normal]	
Parallell Port IRQ	[IRQ7]	
Restore on AC Power Loss	[Power Off]	
Power On function	[None]	
		<- Select Screen ↑↓ Select Item +- Change Field F1 General Help F10 Save and Exit ESC Exit

Onboard Serial Port

The default values are:

Serial Port 1: 3F8/IRQ4
Serial Port 2: 2F8/IRQ3

Restore on AC Power Loss

This field sets the system power status whether *Power On or Power Off* when power returns to the system from a power failure situation.

Advanced		
Configure Secondary Fintek F81216D Super IO Chipset		Allows BIOS to Select Serial Port Base Addresses
Serial Port3 Address	[3E8]	
Serial Port3 Mode	[5]	
Serial Port4 Address	[2E8]	
Serial Port4 Mode	[10]	
		<- Select Screen ↑↓ Select Item +- Change Field F1 General Help F10 Save and Exit ESC Exit

BIOS SETUP UTILITY

Advanced	
ACPI Settings	**General ACPI Configuration settings**
►General ACPI Configuration ►Advanced ACPI Configuration	

BIOS SETUP UTILITY

Advanced		
General ACPI Configuration		**Select the ACPI state used for System Suspend.**
Suspend mode	**[S1 (POS)]**	
C1E Support	[Enable]	

BIOS SETUP UTILITY

Advanced		
Advanced ACPI Configuration		**Enable RSDP pointers to 64-bit Fixed System Description Tables. Different ACPI version Has some addition**
ACPI Version Features	**[ACPI v1.0]**	
ACPI APIC support	[Enabled]	
AMI OEMB table	[Enabled]	
Headless mode	[Disabled]	

BIOS SETUP UTILITY

Advanced		
AHCI Settings	[Enabled]	**Enables for supporting AHCI controller in AHCI mode during BIOS control otherwise operates in IDE mode.**
AHCI BIOS Support		
AHCI Port0	[Not Detected]	
AHCI Port1	[Not Detected]	
AHCI Port2	[Not Detected]	
AHCI Port3	[Not Detected]	
AHCI Port4	[Not Detected]	
AHCI Port5	[Not Detected]	

BIOS SETUP UTILITY

Advanced

Hardware Health Configuration

System Temperature	:75°C/167°F
CPU Temperature	:78°C/172°F
CPU_VDD_RUN	:1.148V
CPU_VDDR	:0.902V
+3.3V	:3.260V
+5V	:4.933 V
VCC	:4.914 V
5VSB	:4.872 V
CPU Shutdown Temperature	**[Disabled]**

Options

Disabled
80°C/176°F
85°C/185°F
90°C/194°F
95°C/203°F

<- Select Screen
↑↓ Select Item
+- Change Field
Tab Select Field
F1 General Help
F10 Save and Exit
ESC Exit

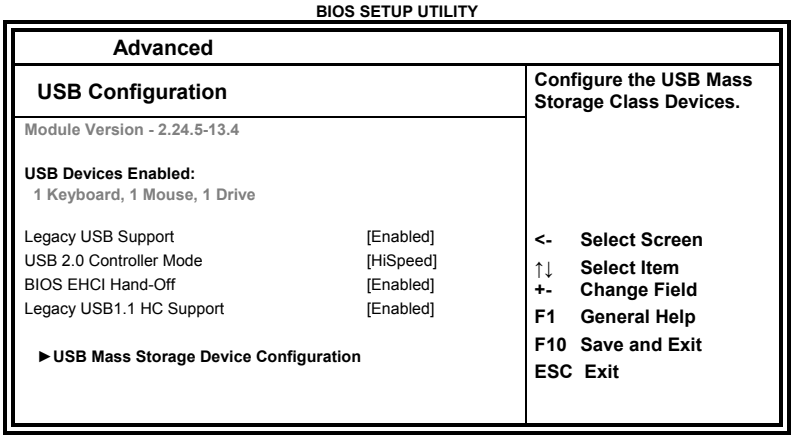
BIOS SETUP UTILITY

Advanced

PCI Express Configuration

Relaxed Ordering	**[Auto]**
Maximum Payload Size	[Auto]
Extended Tag Field	[Auto]
No Snoop	[Auto]
Maximum Read Reqquest Size	[Auto]
Active State Power Management	[Disabled]
Extended Synch	[Auto]

Enables/Disables Pci Express Device Relaxed Ordering.



The USB Configuration menu is used to read USB configuration information and configure the USB settings.

Legacy USB Support

Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.

USB 2.0 Controller Mode

Configures the USB 2.0 controller in HiSpeed (480Mbps) or FullSpeed (12Mbps).This option is enabled by HiSpeed.

BIOS EHCI Hand-Off

Enabled/Disabled. This is a workaround for Oses without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

Legacy USB1.1 HC Support

Support USB1.1 HC.

BIOS SETUP UTILITY

Advanced		
Lan Configuration		**Options** **Disabled** **Enabled**
Onboard LAN Option ROM	[Disabled]	

BIOS SETUP UTILITY

Advanced		
Power Configuration		**Disable/Enable RTC to generate a wake event.**
RTC Resume	[Disabled]	
Resume By Ring	[Disabled]	
Resume By PCI Card	[Disabled]	

PCIPnP Settings

This option configures the PCI/PnP settings.

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Advanced PCI/PnP Settings

WARNING: Setting wrong values in below sections may cause system to malfunction.

Clear NVRAM	[No]
Plug & Play O/S	**[No]**
PCI Latency Timer	[64]
Allocate IRQ to PCI VGA	[Yes]
Palette Snooping	[Disabled]
PCI IDE BusMaster	[Enabled]
OffBoard PCI/ISA IDE Card	[Auto]
IRQ3	[Available]
IRQ4	[Available]
IRQ5	[Reserved]
IRQ7	[Available]
IRQ9	[Available]
IRQ10	[Reserved]
IRQ11	[Available]
IRQ14	[Available]
IRQ15	[Available]
DMA Channel 0	[Available]
DMA Channel 1	[Available]
DMA Channel 3	[Available]
DMA Channel 5	[Available]
DMA Channel 6	[Available]
DMA Channel 7	[Available]
Reserved Memory Size	**[Disabled]**

NO: lets the BIOS Configure all the Devices in the system. YES: lets the operating system configure Plug and Play (PnP) devices not required for boot if your system has a Plug and Play operating system.

<- Select Screen
↑↓ Select Item
+- Change Field
F1 General Help
F10 Save and Exit
ESC Exit

Clear VRAM

Clear VRAM during system boot.

Plug & Play O/S

This lets BIOS configure all devices in the system or lets the OS configure PnP devices not required for boot if your system has a Plug and Play OS.

Allocate IRQ to PCI VGA

This assigns IRQ to PCI VGA card if card requests IRQ or doesn't assign IRQ to PCI VGA card even if card requests an IRQ.

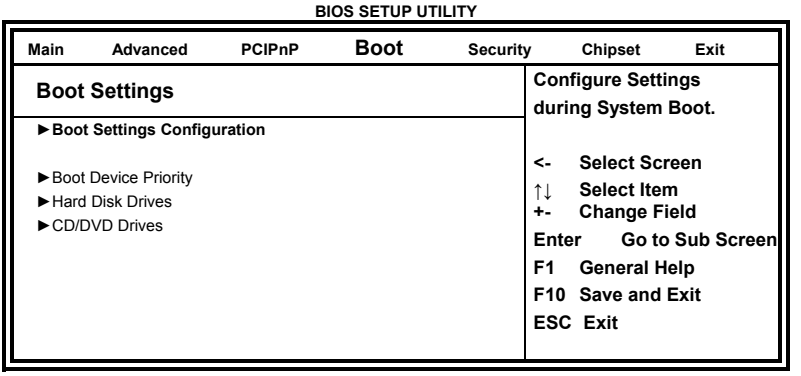
Palette Snooping
When enabled, PCI will allow VGA palette signals to go to the ISA bus.

PCI IDE BusMaster
This function allows the BIOS to use PCI BusMastering for reading or writing to IDE drives.

OffBoard PCI/ISA IDE Card
This option specifies if an offboard PCI IDE controller adapter card is installed in the computer. You must specify the PCI Expansion slot on the motherboard where the offboard PCI IDE controller is installed. This disables the onboard PCI IDE controller. You must also specify the IRQs for this PCI IDE card.

IRQ#
Use the IRQ# address to specify what IRQs can be assigned to a particular peripheral device.

Boot Settings



BIOS SETUP UTILITY

Boot		
Boot Settings Configuration		**Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.**
Quick Boot	**[Enabled]**	
Quiet Boot	[Disabled]	
AddOn ROM Display Mode	[Force BIOS]	
Bootup Num-Lock	[On]	
PS/2 Mouse Support	[Auto]	
Wait for 'F1' If Error	[Enabled]	
Hit 'DEL' Message Display	[Enabled]	
Interrupt 19 Capture	[Disabled]	
		<- Select Screen
		↑↓ Select Item
		+- Change Field
		F1 General Help
		F10 Save and Exit
		ESC Exit

Quick Boot
This allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

Quite Boot
When disabled, this displays normal POST messages. When enabled, this displays OEM Logo instead of POST messages.

AddOn ROM Display Mode
This allows user to force BIOS/Option ROM of add-on cards to be displayed during quiet boot.

Bootup Num-Lock
This select the power-on state for numlock.

PS/2 Mouse Support
This select support for PS/2 mouse.

Wait for 'F1' If Error
When set to Enabled, the system waits for the F1 key to be pressed when error occurs. This allows option ROM to trap interrupt 19.

Hit <DEL> Message Display
This displays "Press <DEL> to run Setup" in POST.

Interrupt 19 Capture
This allows option ROMs to trap interrupt 19.

Security Settings

This setting comes with two options set the system password. Supervisor Password sets a password that will be used to protect the system and Setup utility. User Password sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The Enter Password: message prompts on the screen. Type the password and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Security Settings

Supervisor Password : Not Installed
User Password : Not Installed

Change Supervisor Password
Change User Password

Boot Sector Virus Protection [Disabled]

Install or Change the Password.

<- Select Screen
↑↓ Select Item
Enter Change
F1 General Help
F10 Save and Exit
ESC Exit

Advanced Chipset Settings

This setting configures the north bridge, south bridge and the ME subsystem. WARNING! Setting the wrong values may cause the system to malfunction.

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Advanced Chipset Settings

Options for NB

► **North Bridge Configuration**
► North Bridge2 Configuration
► South Bridge Configuration

<- Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit

BIOS SETUP UTILITY

Chipset

North Bridge Chipset Configuration

►**Memory Configuration**
►**DRAM Timing Configuration**

Size of Dimm #0: 1 GB
Size of Dimm #1: Non-Presence

Memory CLK	:400 MHz, N/A
CAS Latency(Tcl)	: 6 CLK , N/A
RAS/CAS dELAY(Trcd)	: 6 CLK , N/A
Row Precahrge Time (Trp)	: 6 CLK , N/A
Min Active RAS (Tras)	: 15 CLK , N/A
RAS/RAS Delay (Trrd)	: 4 CLK , N/A
Row Cycle (Trc)	: 20 CLK , N/A
Read to Precharge (Trtp)	: 4 CLK , N/A
Write Recover Time (Twr)	: 6 CLK , N/A
HT Link Width Control	**[Enable]**
GfxNBPstateDis Support	**[Enable]**
T0Time Override	**[Disabled]**

<- Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit

Memory Configuration

BIOS SETUP UTILITY

	Chipset
Memory Configuration	Enable Channel Memory Interleaving
Channel Interleaving [Auto]	
Enable Clock to All DIMMs [Disabled]	
Memory Hole Remapping [Enabled]	
CS Sparing Enable [Disabled]	
Power Down Enable [Auto]	
Power Down Mode [Auto]	
DRAM Parity Enable [Auto]	
Bank Swizzle Mode [Auto]	
	<- Select Screen
	↑↓ Select Item
	Enter Go to Sub Screen
	F1 General Help
	F10 Save and Exit
	ESC Exit

DRAM Timing Configuration

BIOS SETUP UTILITY

	Chipset
DRAM Timing Configuration	Optons
DRAM Timing Config [Auto]	Auto Manual
	<- Select Screen
	↑↓ Select Item
	Enter Go to Sub Screen
	F1 General Help
	F10 Save and Exit
	ESC Exit

NorthBridge2 Chipset Configuration

BIOS SETUP UTILITY

	Chipset
NorthBridge2 Chipset Configuration	
RS880 CIMx Version : 1.3.0.5	
►Internal Graphics Configuration	
NB Power Management Features [Auto]	**<- Select Screen**
Memory Hole [Disabled]	**↑↓ Select Item**
	Enter Go to Sub Screen
	F1 General Help
	F10 Save and Exit
	ESC Exit

Internal Graphics Configuration

BIOS SETUP UTILITY

		Chipset
Internal Graphics Configuration		Options
Internal Graphics Mode	**[UMA+SIDEPORT]**	Disable
UMA Frame Buffer Size	[Auto]	UMA
SIDEPORT Clock Speed	[400MHz]	SIDEPORT
GFX Engine Clock Override	[Disable]	UMA+SIDEPORT
UMA-SP Interleave Mode	[Auto]	
SP Power Management	[Auto]	
SP NB Termination	[Disable]	
SP Memory Termination	[Disable]	**<- Select Screen**
SP CMD Hold	[Auto]	**↑↓ Select Item**
SP CMD Hold	[Auto]	**Enter Go to Sub Screen**
Special Graphics Features	[Disabled]	**F1 General Help**
FB Location	[Below 4G]	**F10 Save and Exit**
		ESC Exit
PANEL ID Selection	[1024 x 768 24 bit]	

South Bridge Configuration

BIOS SETUP UTILITY

Chipset

SouthBridge Chipset Configuration	Options for SB GPP Por
►SP GPP Port Graphics Configuration ►SB Azalia Audio Configuration ►SB SATA Configuration	<- Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit

BIOS SETUP UTILITY

Chipset

SB GPP Port Configuration		Options
SB GPP Function	[Enable]	Disable Enable
GPP Port Link Configuration	[1:1:1:1 mode]	
Unhide unused GPP ports	[Disable]	
GPP Link ASPM	[Disable]	
GPP Lane Reversal	[Disabled]	
NB-SB PHY PLL Power Down	[Enable]	
GPP PHY PLL Power Down	[Enable]	

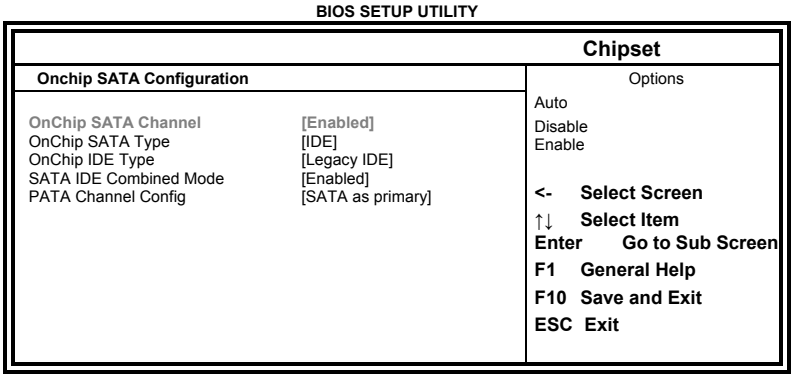
<- Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit

BIOS SETUP UTILITY

Chipset

Onchip HD Azalia Configuration		Options
HD Audio Azalia Device	[Enabled]	Auto Disable Enable
HD Onboard PIN Config	[Enabled]	
Azalia Front Panel	[Auto]	
SDIN0 Pin Config	[Azalia]	
SDIN1 Pin Config	[Azalia]	
SDIN2 Pin Config	[Azalia]	
SDIN3 Pin Config	[GPIO]	
Azalia Snoop	[Disabled]	

<- Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit

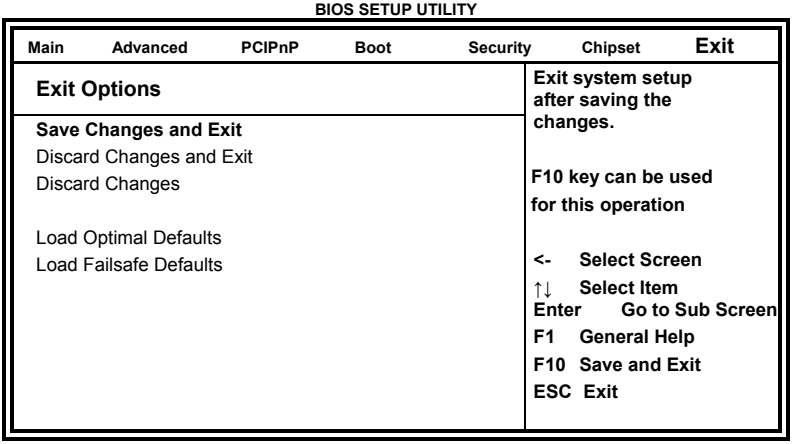


OnChip SATA Type

The options are:
(1) IDE
(2) RAID
(3) AHCI

Exit Setup

The exit setup has the following settings which are:



Save Changes and Exit

This option allows you to determine whether or not to accept the modifications and save all changes into the CMOS memory before exit.

Discard Changes and Exit

This option allows you to exit the Setup utility without saving the changes you have made in this session.

Discard Changes

This option allows you to discard all the changes that you have made in this session.

Load Optimal Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

Load Failsafe Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

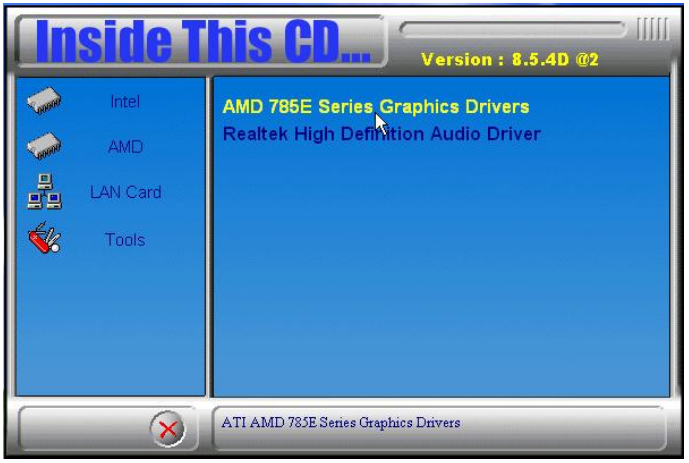
Drivers Installation

This section describes the installation procedures for software and drivers under the Windows XP and Windows Vista. The software and drivers are included with the board. If you find the items missing, please contact the vendor where you made the purchase. The contents of this section include the following:

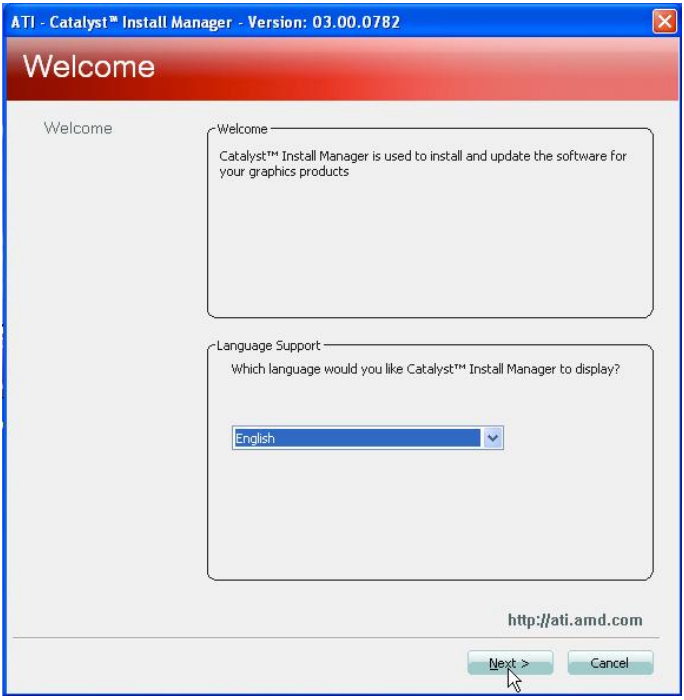
VGA Drivers Installation 30
Audio Drivers Installation 35
LAN Drivers Installation 36
Marvell LAN Drivers Installation (IP401-B1 carrier board only)..... 38

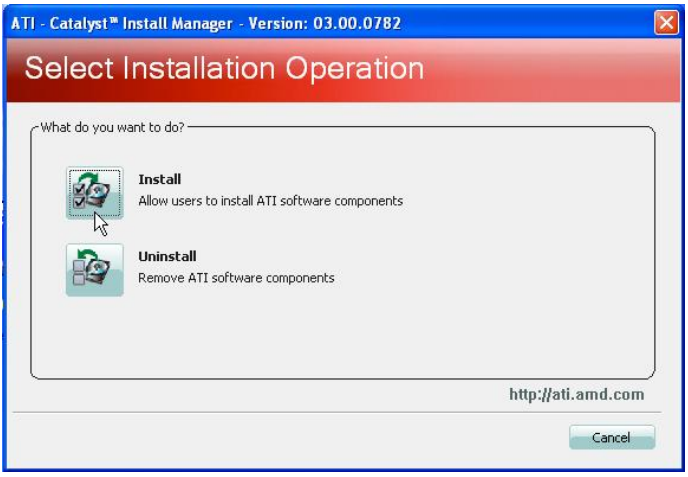
VGA Drivers Installation

1. Insert the CD that comes with the board. Click ***AMD*** then ***AMD 785E Chipset Drivers*** and then ***AMD 785E Series Graphics Drivers***.

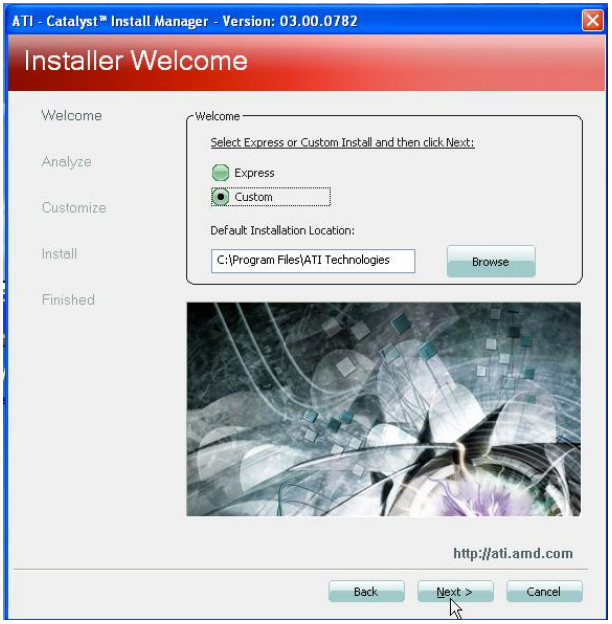


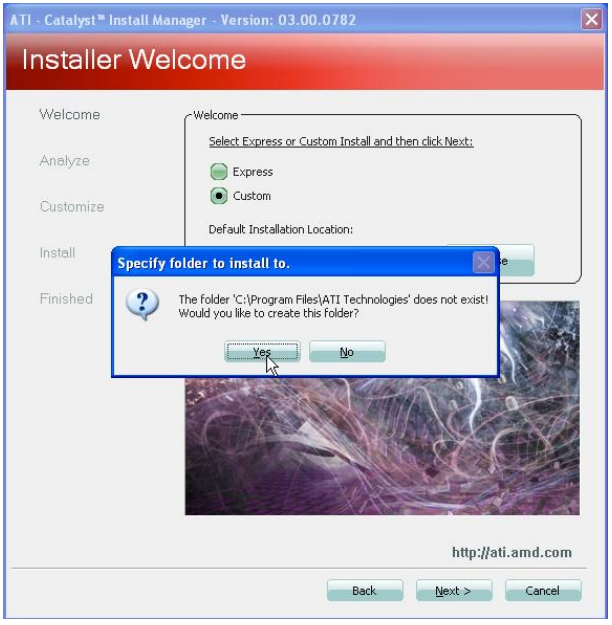
2. When the Welcome Screen appears, click ***Next***. Click ***Install*** to install the ATI software components.

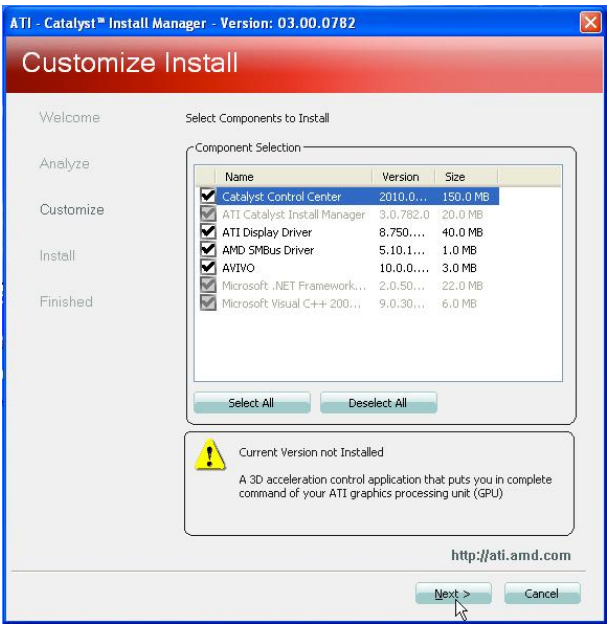




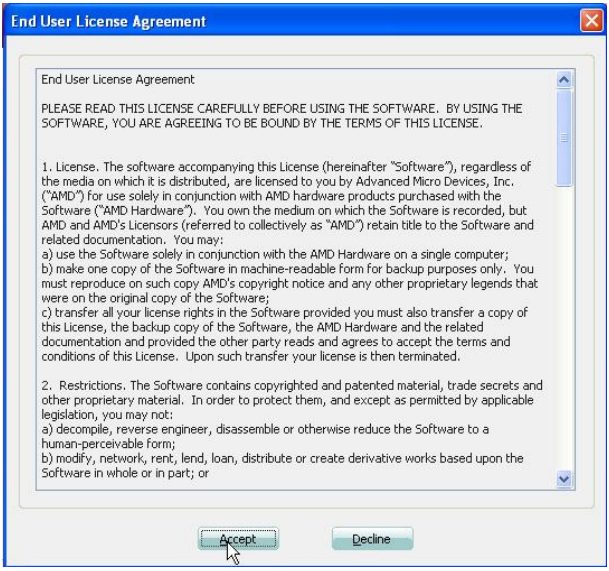
3. Click ***Custom*** and select the components to install as shown.

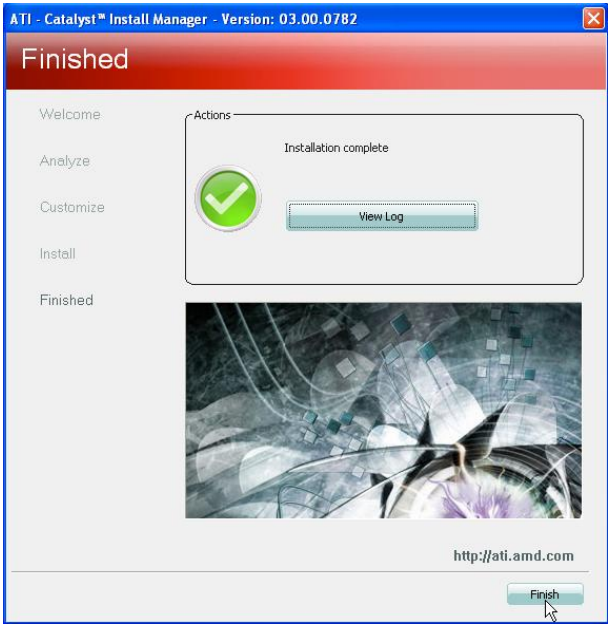






4. Accept the license agreement to proceed with installation. Reboot the computer when prompted for changes to take effect.




ATI - Catalyst™ Install Manager - Version: 03.00.0782
Finished
Welcome
Analyze
Customize
Install
Finished
Actions
Installation complete
View Log
http://ati.amd.com
Finish


ATI Catalyst™ Install Manager
Actions taken by Catalyst™ Install Manager require a system reboot.
Would you like to reboot now?
Yes
No

Audio Drivers Installation

1. Insert the CD that comes with the board. Click ***AMD*** then ***AMD 785E Chipset Drivers*** and then ***Realtek High Definition Audio Driver***.

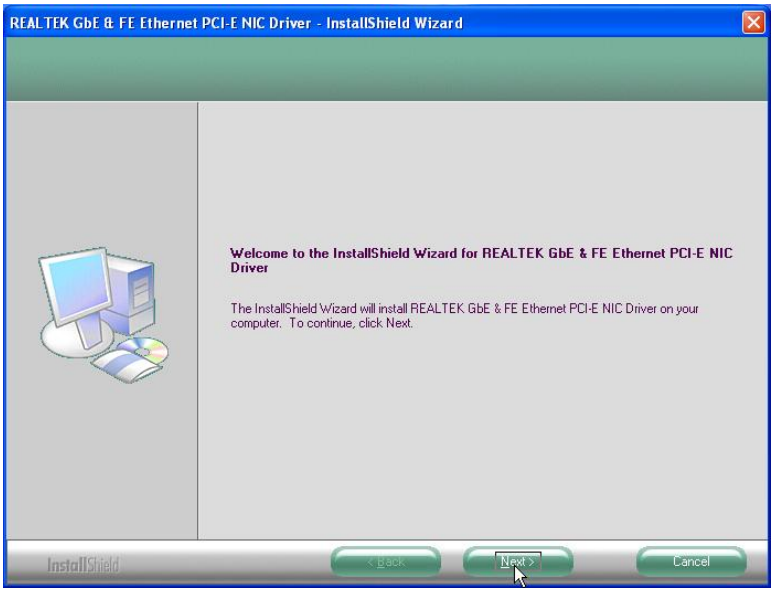
2. The Welcome screen to the InstallShield Wizard for Realtek High Definition Audio Driver will appear. At this point, click **Next** to continue the installation process.

3. When installation is completed, restart the computer as prompted. Click **Finish**.

LAN Drivers Installation

1. Insert the CD that comes with the board. Click ***LAN Card*** at the left side and then ***Realtek LAN Controller Drivers***.

2. In the welcome screen of the InstallShield Wizard for REALTEK GbE & FE Ethernet PCI-E NIC Driver, click ***Next***.



3. In the InstallShield Wizard screen, click ***Install*** to begin the installation.

4. InstallShield Wizard completed. Click ***Finish*** to exit the Wizard.

Marvell LAN Drivers Installation (IP401-B1 carrier board only)

Follow the steps below to complete the installation of the Intel PRO LAN drivers.

1. Insert the CD that comes with the board. Click ***LAN Card*** and then ***Marvell LAN Controller Driver***.

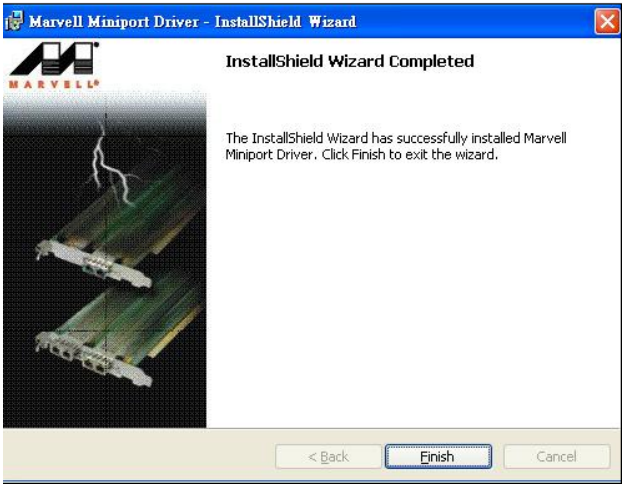
2. When the Welcome screeen appears, click ***Next*** to continue.

3. Click ***Next*** to agree with the license agreement.

4. When the Readme Information appears, click ***Next*** to continue

5. When the Ready to Install the Program appears, click ***Install*** to continue.

6. After the installation is complete, click ***Finish***.



7. To use the wake up function with PCIe LAN, go to the ***Device Manager under Windows*** and select ***LAN controller***. The window for *Generic Marvell Yukon Chipset based Ethernet Controller Properties* will appear. Click ***Advanced*** and select ***Wake From Shutdown***. In the Value field on the right, select ***On***.

8. Then, also in the *Advanced* section, click on ***Wake Up Capabilities***. In the Value field on the right, select ***Magic Packet***, then click ***OK***.

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