Intel® Desktop Boards
BIOS Settings Dictionary – By Menu

The BIOS Setup program can be used to view and change the BIOS settings for the computer. The BIOS Setup program is accessed by pressing the <F2> key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins. The following menus are available:

Menu Title	Purpose
Maintenance	Clears passwords and displays processor information. *The maintenance menu is displayed only when the Desktop Board is in Configure Mode.*
Manageability	Configure options associated with Intel® Platform Administration Technology.
Main	Displays processor and memory configuration.
Advanced	Configures advanced features available through the chipset.
Security	Sets passwords and security features.
Power	Configures power management features and power supply controls.
Boot	Selects boot options.
Intel® ME	Configures options for the Intel® Management Engine and Intel® Active Management Technology.
Exit	Saves or discards changes to Setup program options.

The presence of menus and BIOS settings are dependent on your board model, hardware components installed, and the BIOS version. BIOS menu titles may differ.

If any problems occur after making BIOS settings changes (poor performance, intermittent issues, etc.), reset the desktop board to default values:

1. During boot, enter the BIOS setup by pressing F2.
2. Press F9 to set defaults.
3. Press F10 to Save and Exit.

If the system locks or won't boot after making BIOS settings changes, perform a BIOS recovery as described at http://support.intel.com/support/motherboards/desktop/sb/CS-023360.htm.

Maintenance Menu

BIOS Setting	Options	Description / Purpose
Access Level	No changeable options	Displays the current user's access level.
Board ID	No changeable options	Value that uniquely identifies the SKU of the board.
C1E	• Disable • Enable	Allows the system to change voltage level (lower) of processor when no work is being done.
Clear All Passwords	• OK • Cancel	Clears both the user and supervisor passwords.
Clear BIOS Passwords	Selecting this option clears the passwords.	Clears both the user and supervisor passwords.
Clear HD Passwords	Selecting this option clears the passwords.	Clears both the user and master hard drive passwords.
Clear Trusted Platform Module *This BIOS setting is present only on Intel® Desktop Boards that include support for Trusted Platform Module (TPM).*	• OK • Cancel	Used to clear the TPM if you are transferring ownership of the platform to a new owner. *For more information, refer to your Trusted Platform Module Quick Reference Guide.*
CPU Frequency Multiplier *This BIOS setting is present only when Default Frequency Ratio is disabled.*	User Defined	Sets the ratio between CPU Core Clock and the Front Side Bus (FSB)
CPU Microcode Update Revision	No changeable options	Displays processor's Microcode Update Revision.
CPU Stepping Signature	No changeable options	Displays processor's Stepping Signature.
Default Frequency Ratio	• Disable • Enable	**Enabled** uses processor default frequency ratio. **Disabled** allows programming of frequency ratio.
Failsafe Watchdog	• Disable • Enable	Enables or disables Failsafe Watchdog. *For more information, refer to* http://download.intel.com/design/chipsets/applnots/29227301.pdf
Fixed Disk Boot Sector	• Normal • Write Protect or • Disable • Enable	Boot sector VIRUS protection

Force On-board LAN Disable *This BIOS setting is present only on boards supporting Intel® Active Management Technology.*	• Disable • Enable	Forces onboard LAN and all Active Management Technology features to disabled.
Microcode Revision	No changeable options	Lists the processor microcode revision installed on the desktop board.
Processor Stepping	No changeable options	Lists the stepping of installed processor.
Ratio Actual Value	No changeable options	Displays processor's Bus Ratio.
Reset Intel® AMT to default factory settings	No changeable options	Resets Intel® AMT to the default factory settings.
Use Maximum Multiplier	• Automatic • Disable	Only for unlocked processors: either sets CPU speed to minimum rated multiplier or rated multiplier (Speed)

Manageability Menu

BIOS Setting	Options	Description / Purpose
Agent	• Enable • Disable	By default, Intel® Platform Administrator Agent is disabled. To enable the agent, select **Enable**.
Bound to Server *If the client is bound to a server, this option will display the server's IP address in this format:* ***Bound to Server: xxx.xxx.xxx.xxx***	• Yes • No	This BIOS option is changeable ONLY when the system is bound to a server. Select **No** to release the client/server binding. When the binding is no longer applicable, for example if the system has crashed or the server has been changed, you need to release the client/server binding; otherwise the client will be unable to be managed by another server.
Default Gateway *This setting editable only if Obtain an IP Automatically is set to* ***No****.*	<Enter>	Press <Enter> to edit the default gateway for the client system.
Disable Disk Protection	<Enter>	Only allowed if disk protection is enabled.
Disk Protection is <enabled or disabled >	No changeable options	Displays whether disk protection is enabled or disabled. Hard Disk Protection is enabled by default after installing Intel® Platform Administrator Client. With Hard Disk Protection enabled, the client computer can save a copy of the current OS image for recovery purpose. This copy enables recovering a crashed client to a previously saved state.
IP Address *This setting editable only if Obtain an IP Automatically is set to* ***No****.*	<Enter>	Press <Enter> to edit the IP address for the client system.

Location Info	<Enter>	Press <Enter> to edit the location information for the client system. Location information is used to identify specific client computers in the server management console during client management, image/package management, and abnormal alerts processes. It is recommended that client information allow the administrator to easily identify the physical location of the computer.
Obtain an IP Automatically	• No • Yes	Select Yes to enable DHCP
Recover to Checkpoint	<Enter>	Press <Enter> to display available checkpoints. Select the checkpoint to restore, and then press F10 to save and exit. Allows you to reverse any changes made since the creation of any of the checkpoints currently on the computer. A Checkpoint is a saved status of the client hard disk. When the Intel® Platform Administrator Client is enabled, the user can create a checkpoint to save the current status for future recovery.
Subnet Mask *This setting editable only if Obtain an IP Automatically is set to **No**.*	<Enter>	Press <Enter> to edit the subnet mask for the client system.

Main Menu

BIOS Setting	Options	Description / Purpose
Additional System Information	No changeable options	Displays information such as System Information, Desktop Board Information, Chassis Information, etc.
BIOS Version	No changeable options	Displays the version of the BIOS currently installed on the PC.
Core Multiplexing Technology *This BIOS setting is present only when a dual core processor is installed.*	• Enabled • Disabled	When disabled, turns off all but one processor core. You may need to disable this for legacy operating systems that do not support multiple cores. The remaining core may have access to more cache. The amount of cache available to the remaining core will depend on the particular processor. The increase in available cache can result in better performance under certain applications.
Front Side Bus (FSB) Frequency	No changeable options	Displays the Front Side Bus (FSB) Frequency
Hyper-Threading Technology *This BIOS setting is present only on Intel® Desktop Boards that support Hyper-Threading Technology if a processor supporting Hyper-Threading Technology is installed.*	• Enabled • Disabled	Enables or disables Hyper-Threading Technology. *For information on Hyper-Threading, refer to http://en.wikipedia.org/wiki/Hyperthreading*

L2 Cache RAM	No changeable options	Displays the size of second-level processor cache.
Language	• English • French	Selects the current default language used by the BIOS.
Memory Configuration *This BIOS setting is present only on Desktop Boards that support ECC memory when ECC DIMMs are installed.*	• Non-ECC • ECC	Allows you to turn error reporting on or off if the system and all the memory installed supports ECC (Error Correction Code).
Memory Mode	No changeable options	Displays single or dual channel operation. See support.intel.com for dual channel memory configurations
Processor Speed	No changeable options	Displays processor speed.
Processor Type	No changeable options	Displays processor type.
SW Single Processor Mode *This BIOS setting is present only on Intel® Desktop Boards that include support for dual core processors when a dual core processor is installed.*	• Enabled • Disabled	Sets the processor mode for dual core processors. **Disabled:** Dual Core processor will run in Dual Core mode. **Enabled:** Dual Core processor will NOT run in Dual Core mode.
System Bus Speed	No changeable options	Displays the system bus speed.
System Date	Month, day, year	Specifies the current date.
System Memory Speed	No changeable options	Displays the system memory speed.
System Time	Hour, minute, and second	Specifies the current time.
Total Memory	No changeable options	Displays the total amount of RAM.

Advanced > Boot Configuration Menu

BIOS Setting	Options	Description / Purpose
ASF Support	• Disable • Enable	Disables or enables Alert Standard Format (ASF). *For information on ASF, refer to http://www.intel.com/design/network/papers/ASF_whitepaper.htm*
CPU Fan Control	• Disable • Enable	Allows the CPU fan to be controlled in order to optimize acoustics. If disabled, the CPU fan will run at 100%.
Display F10 to Enter Boot Menu	• Disable • Enable	When enabled, system displays the F10 key prompt string during POST.
Display F12 for Network Boot	• Disable • Enable	When enabled, system displays the F12 key prompt string during POST.
Display F2 to Enter Setup	• Disable • Enable	When enabled, system displays the F2 key prompt string during POST.

Display F7 to Update BIOS	• Disable • Enable	When enabled, system displays the F7 key prompt string during POST. To use the F7 BIOS Flash Update tool, USB media containing a BIOS update file (.bio) must be connected during boot.
Display function key prompts during	• Disable • Enable	Displays whatever function keys are selected to display during POST.
Display POST Codes	• Disable • Enable	Choose whether to show POST codes on Monitor during boot
Display Setup Prompt	• On • Off	Displays the "F2 to enter BIOS setup" message during boot.
HDD Self Diagnostic	• Disable • Enable	Enables or disables Self-Monitoring Analysis and Reporting Technology (SMART). *For information on S.M.A.R.T., refer to http://en.wikipedia.org/wiki/Self-Monitoring,_Analysis,_and_Reporting_Technology*
Intel® ME Setup Prompt	• Disable • Enable	When enabled, system displays the Ctrl-P prompt to enter MEBx Setup.
Keyboard Not Found Message	• Disable • Enable	When enabled, the system pauses during POST if keyboard, mouse or monitor is not found during POST (boot).
Limit CPUID MaxVal	• Disable • Enable	Enable for legacy operating systems to boot processors with extended CPUID functions.
Lowest Fan Speed	• Slow • Off	This option defines the fan speed at the lowest system temperature. **Slow** allows the fans to continue to run at a reduced speed at low system temperatures. **Off** turns off the fans at low system temperatures.
Lowest System Fan Speed	• Slow • Off	This option defines the system fan speed at the lowest system temperature. **Slow** allows the fans to continue to run at a reduced speed at low system temperatures. **Off** turns off the system fans at low system temperatures.
Max CPUID Value Limit	• Disable • Enable	Enable for legacy operating systems to boot processors with extended CPUID functions.
Numlock	• Off • On	Specifies the power-on state of the Numlock feature on the numeric keypad of the keyboard.
Plug & Play O/S	• No • Yes	Specifies if manual configuration is desired. **No** lets the BIOS configure all devices in the system. This setting is appropriate when using a Plug and Play operating system. **Yes** lets the operating system configure Plug & Play (PnP) devices not require

System Fan Control	• Disable • Enable	Allows the system fans to be controlled in order to optimize acoustics. If disabled, system fans will run at 100%.

Advanced > Chipset Configuration Menu

BIOS Setting	Options	Description / Purpose
AGP/PCI Burn-in Mode	• Default • 63.88/31.94 MHz • 68.05/34.02 MHz • 69.44/34.72 MHz • 70.83/35.41 MHz • 72.22/36.11 MHz • 73.60/36.80 MHz	Enables the selection of specific AGP/PCI clock frequencies. The host clock (system bus speed) is not changed. If this option is set to anything other than Default, the Host and I/O Burn-In Mode is automatically set to Default.
Burn-In Mode	• Default • -2.0% • -1.0% • +1.0% • +2.0% • +3.0% • +4.0%	Alters host and I/O clock frequencies. **Warning**: This setting is intended for validation and test purposes only. Altering clock frequencies may reduce system stability and/or the useful life of the system and processor. Operation at settings beyond component specification is not covered by Intel component warranties. If any problems occur during operation at non-default settings, reset the board to default values.
CPC Override	• Auto • Enabled • Disabled	Controls Command Per Clock/1n rule mode. When enabled, allows DRAM controller to attempt Chip Select assertions in two consecutive common clocks.
CSA Device	• Auto • Disable	Enables or disables Communication Streaming Architecture interface. **Auto** leaves the CSA device enabled if a device is found on the bus, else the device is disabled. *For information on CSA, refer to* *http://www.intel.com/design/network/papers/25245102.pdf*
DDR2 Voltage	• Automatic • 1.8 • 1.9	Memory voltage will be adjusted according to the memory detected. Memory voltage can also be manually set to allow memory to function or achieve higher performance.
Extended Burn-in Mode	• Enabled • Disabled	Enabling this option allows the user to select additional values for system performance margining. **Warning:** This setting is intended for validation and test purposes only. Altering clock frequencies may reduce system stability and/or the useful life of the system and processor. Operation at settings beyond component specification is not covered by Intel component warranties. If any problems occur during operation at non-default settings, reset the board to default values.

Extended Configuration	• Default • User Defined	Chooses the default or user defined settings for the extended configuration options.
High Precision Timer	• Enabled • Disabled	Enables or disables HPET (High Precision Event Timer) support. *For information on HPET, refer to http://en.wikipedia.org/wiki/HPET*
Host Burn-in Mode		This setting alters host clock frequencies. **Warning:** This setting is intended for validation and test purposes only. Altering clock frequencies may reduce system stability and/or the useful life of the system and processor. Operation at settings beyond component specification is not covered by Intel component warranties. If any problems occur during operation at non-default settings, reset the board to default values.
Host Burn-in Mode Percentage	Options are dependent on board and processor models; may be set up to 30%.	Allows you to change the speed of the processor in terms of percentage; either positive or negative.
Host Burn-in Mode Type	• Positive • Negative	Reads the percentage set in Host Burn-in Mode Percentage as either a positive number (increases speed) or a negative number (decreases speed).
Host Spread Spectrum	• Down • Center	Adjust the mean frequencies for core system clocks. Requires additional POST time.
HPET	• Enabled • Disabled	Enables or disables HPET (High Precision Event Timer) support. *For information on HPET, refer to http://en.wikipedia.org/wiki/HPET*
IOAPIC Enable	• Enabled • Disabled	Enables or disables I/O Programmable Interrupt Controller. *For information on IOAPIC, refer to http://en.wikipedia.org/wiki/IOAPIC*
ISA Enable Bit	• Enabled • Disabled	Some older expansion devices require this to be enabled.
MCH Voltage Override	• Default • 1.525V • 1.600V • 1.625V • 1.725V	Allows you to set the MCH V_CORE voltage. **Warning**: This setting is intended for validation and test purposes only. Altering clock frequencies may reduce system stability and/or the useful life of the system and processor. Operation at settings beyond component specification is not covered by Intel component warranties. If any problems occur during operation at non-default settings, reset the board to default values.

Memory Frequency	Options depend on board model (can be from 333MHz to 800MHz)	Allows you to manually set the speed of your memory
Mini Card	• Enabled • Disabled	Enables or disables the PCI Express x1 minicard slot.
PCI Burn-in Mode	• Default • 36.36 MHz • 40.00 MHz	Enables the selection of specific PCI clock frequencies. **Warning:** This setting is intended for validation and test purposes only. Altering clock frequencies may reduce system stability and/or the useful life of the system and processor. Operation at settings beyond component specification is not covered by Intel component warranties. If any problems occur during operation at non-default settings, reset the board to default values.
PCI Express Burn-in Mode *This BIOS setting is present only on Intel® Desktop Boards that include PCI Express slots.*	• Default • 101.32 MHz • 102.64 MHz • 103.96 MHz • 105.28 MHz • 106.6 MHz • 107.92 MHz • 109.24 MHz	Enables the selection of specific PCI Express clock frequencies. **Warning**: This setting is intended for validation and test purposes only. Altering clock frequencies may reduce system stability and/or the useful life of the system and processor. Operation at settings beyond component specification is not covered by Intel component warranties. If any problems occur during operation at non-default settings, reset the board to default values.
PCI Latency Timer	• 32 • 64 • 96 • 128 • 160 • 192 • 224 • 248	Sets PCI latency time.
PEG Allow > x1 *This BIOS setting is present only on Intel® Desktop Boards that include PCI Express slots.*	• Enabled • Disabled	Enabling this option allows the system to link train PCI express devices of width x4, x8, and x16 in the GMCH x16 slot while leaving the Intel Integrated Graphics (PCIe graphics) enabled as well. With this option disabled, all devices plugged into the GMCH x16 slot will link train as x1 PCIe devices if the Intel Integrated Graphics (PCIe graphics) controller is enabled.
SDRAM CAS# Latency	• 2.0 • 2.5 • 3.0	Selects the number of clock cycles required to address a column in memory. Corresponds to CL. *For information on CAS Latency, refer to http://en.wikipedia.org/wiki/Cas_latency*

SDRAM Frequency	• Auto • 266 MHz • 333 MHz • 400 MHz	Allows override of detected memory frequency value.
SDRAM RAS Act. To Pre.	• 8 • 7 • 6 • 5	Selects length of time from read to pre-change. Corresponds to tRAS, min.
SDRAM RAS# Precharge	• 4 • 3 • 2	Selects the length of time required before accessing a new row.
SDRAM RAS# to CAS# delay	• 4 • 3 • 2	Selects the number of clock cycles between addressing a row and addressing a column. Corresponds to tRCD.
SDRAM Timing Control	• Auto • Manual – Aggressive • Manual – User Defined	**Auto** allows timings to be programmed according to the memory detected. **Manual – Aggressive** selects the most aggressive user defined timings. **Manual – User Defined** allows manual override of detected SDRAM settings.
Watchdog Timer	• Enabled • Disabled	Enables or disables Watchdog timer. *For more information, refer to* *http://download.intel.com/design/chipsets/applnots/29227301.pdf*

Advanced > Diskette Configuration Menu (may be displayed as Floppy Configuration)

BIOS Setting	Options	Description / Purpose
Diskette Controller	• Enabled • Disabled	Configures the integrated floppy controller.
Diskette Write Protect	• Enabled • Disabled	Disables or enables diskette drive write protection.
Drive A	• None • 360, 5.25 in. • 1.2, 5.25 in. • 720, 3.5 in. • 1.44, 3.5 in.	Selects the floppy drive type.
Floppy A	• Disabled • 360 KB 5¼” • 1.2 MB 5¼” • 720 KB 3½” • 1.44 MB 3½” • 2.88 MB 3½”	Selects the floppy drive type.
Floppy Type	• 1.44MB • 2.88MB	Selects the floppy drive type.
Onboard FDC Controller	• Enabled • Disabled	Enables or disables the floppy drive controller

Advanced > Drive Configuration Menu

BIOS Setting	Options	Description / Purpose
Access Mode	• CHS • LBA • Large • Auto	Allows you to select the sector addressing mode. **CHS** (cylinder, head, sector) mode supports up to 528 MB hard disks. **LBA** (logical block addressing) mode supports hard disks up to 128 GB in size. **Large** mode supports hard disks above 528 MB in size, but does not support LBA mode.
ATA/IDE Configuration	• Disabled • Legacy • Enhanced (or Native)	Specifies the integrated IDE controller. **Disabled** disables the integrated IDE controller. **Legacy** enables up to two IDE channels for OS requiring legacy IDE operation. **Enhanced** (or Native) enables all SATA and PATA resources.
Block Mode	• Disabled • Auto	Check the hard disk drive's specifications for optimum setting.
Cable Detected *This BIOS setting is present only if an IDE device is installed.*	No changeable options	Displays the type of cable connected to the IDE interface: 40-conductor or 80-conductor (for ATA-66/100 devices) or Serial ATA.
Configure SATA as…	• IDE • RAID • AHCI	**IDE** is default **RAID:** enables RAID which may require you to install the RAID Driver during OS installation **AHCI**: allows you to take advantage of Advanced Host Controller Interface features such as Native command Queuing , Hot plug, etc., without the option to use RAID. Requires a hard drive that supports AHCI.
Configure Storage Controller as	• SATA only • PATA pri, SATA sec • SATA pri, PATA sec • PATA only	Determines which storage ports will be available.

DMA Mode	• Auto • SWDMA 0 • SWDMA 1 • SWDMA 2 • MWDMA 0 • MWDMA 1 • MWDMA 2 • UDMA 0 • UDMA 1 • UDMA 2 • UDMA 3 • UDMA 4 • UDMA 5	Specifies the Ultra DMA mode for the drive.
Drive Installed	No changeable options	Displays the type of drive installed.
eSATA Port	• Enabled • Disabled	Enable or disable the external SATA (eSATA) controller. *For information on eSATA, refer to http://en.wikipedia.org/wiki/Esata#External_SATA*
Extended IDE Drive	• None • Auto	**Auto**: automatically detects a SATA hard disk drive. If automatic detection is successful, values for the drive specifications are automatically filled in.
First SATA Master	*[drive]*	Displays the drive installed on this SATA channel. Shows [None] if no drive is installed.
Fourth SATA Master	*[drive]*	Displays the drive installed on this SATA channel. Shows [None] if no drive is installed.
Hard Disk Pre-Delay	• Disabled • 3 Seconds • 6 Seconds • 9 Seconds • 12 Seconds • 15 Seconds • 21 Seconds • 30 Seconds	Causes the BIOS to insert a delay before attempting to detect IDE drives in the system. Time options available may vary by board.
HDD S.M.A.R.T. Capability	• Enabled • Disabled	Enable or Disable support for the hard disk's S.M.A.R.T. (Self Monitoring Analysis And Reporting Technology) capability. S.M.A.R.T. is supported by all current hard disks and allows the early prediction and warning of impending hard disk failures. You should enable it if you want to use S.M.A.R.T.-aware utilities to monitor the hard disk's condition. *For information on S.M.A.R.T., refer to http://en.wikipedia.org/wiki/Self-Monitoring,_Analysis,_and_Reporting_Technology*
IDE Auto-Detection	No changeable options	Pressing Enter auto-detects the specs of the drive (size, cylinders, heads, etc.)

Intel® RAID Technology *This BIOS setting is present only on Intel® Desktop Boards that include support for RAID.*	• Enabled • Disabled	Enables or disables Intel® RAID technology. If you plan on configuring your system for Intel® Matrix Storage Technology, enable this setting before installing your operating system. *For information on Intel® Matrix Storage Manager, refer to http://support.intel.com/support/motherboards/desktop/sb/CS-012075.htm*
LBA Mode Control *This BIOS setting is present only if an IDE device is installed.*	No changeable options	Specifies LBA mode control. *For information on LBA, refer to http://en.wikipedia.org/wiki/Logical_block_addressing*
Legacy IDE Channels	• PATA Pri only • PATA Sec only • PATA PRI and Sec • SATA P0/P1 only • SATA P0/P1, PATA Sec • SATA P0/P1, PATA Pri Options may vary depending on board model.	Configures PATA and SATA resources for OS requiring legacy IDE operation. *PATA = Parallel ATA* *SATA = Serial ATA*
Maximum Capacity	No changeable options	Displays the capacity of the drive.
Onboard Chip SATA	• IDE Controller • SATA Disabled	**IDE Controller** - both IDE and SATA channels will be detected. **SATA Disabled** - SATA channels will not be detected.
PATA Master	*[drive]*	Displays the drive installed on this IDE channel. Shows [Not installed] if no drive is installed.
PATA Slave	*[drive]*	Displays the drive installed on this IDE channel. Shows [Not installed] if no drive is installed.
PCI IDE Bus Master	• Disabled • Enabled	Allows a PCI device to initiate a transaction as a master.
PIO Mode *This BIOS setting is present only if an IDE device is installed.*	• Auto • 0 • 1 • 2 • 3 • 4	Specifies the PIO mode. *For information on PIO Mode, refer to http://en.wikipedia.org/wiki/PIO_Mode*
Primary IDE Master	*[drive]*	Displays the drive installed on this IDE channel. Shows [None] if no drive is installed.
Primary IDE Slave	*[drive]*	Displays the drive installed on this IDE channel. Shows [None] if no drive is installed.

SATA AHCI Mode	• Enabled • Disabled	Enables the SATA controllers in an "Advanced Host Controller Interface" mode that improves system performance if the drives attached support AHCI. This setting will be auto enabled if the onboard RAID controller is enabled. NOTE: This changes the device class of the SATA controllers and can cause driver reload in the OS.
SATA Port x	*[drive]*	Displays the drive installed on this SATA port. Shows [Not installed] if no drive is installed.
Second SATA Master	*[drive]*	Displays the drive installed on this SATA channel. Shows [None] if no drive is installed.
Secondary IDE Master	*[drive]*	Displays the drive installed on this IDE channel. Shows [None] if no drive is installed.
Secondary IDE Slave	*[drive]*	Displays the drive installed on this IDE channel. Shows [None] if no drive is installed.
S.M.A.R.T.	• Auto • Disable • Enable	Enable or Disable support for the hard disk's S.M.A.R.T. (Self Monitoring Analysis And Reporting Technology) capability. S.M.A.R.T. is supported by all current hard disks and allows the early prediction and warning of impending hard disk failures. You should enable it if you want to use S.M.A.R.T.-aware utilities to monitor the hard disk's condition. *For information on S.M.A.R.T., refer to http://en.wikipedia.org/wiki/Self-Monitoring,_Analysis,_and_Reporting_Technology*
Third SATA Master	*[drive]*	Displays the drive installed on this SATA channel. Shows [None] if no drive is installed.
Type	• Auto • User	Specifies the IDE configuration mode for IDE devices. **Auto** fills-in capabilities from ATA/ATAPI device. **User** allows capabilities to be changed.
Use Automatic Mode	• Enabled • Disabled	Allows you to manually set the bootable devices configuration for legacy operating systems (OS). Legacy OS may only allow 4 devices, which means you must choose to use the IDE controller as one of your 4 devices.

Advanced > Event Log Configuration Menu

BIOS Setting	Options	Description / Purpose
Clear All DMI Event Log	• Yes • No	**Yes** - the DMI Event Log will be cleared at next POST stage and then this option automatically resets to No.
Clear Event Log	• Enabled • Disabled	**Enable** discards all events in the event log and will reset the option to **disable** upon exiting BIOS.
DMI Event Log	• Enabled • Disabled	Enable or disable the storing of POST error messages to the DMI Event Log.
ECC Event Logging	• Enabled • Disabled	Enables or disables event logging of ECC events.

Event Log	No changeable options	Indicates if there is space available in the event log.
Event Log Capacity	No changeable options	Indicates if there is space available in the event log.
Event Log Validity	No changeable options	Indicates of the event log information is valid.
Event Logging	• Enabled • Disabled	Enables or disables tracking occurrences during system boot.
Mark DMI Events As Read	[Enter]	Marks all DMI events in the event log as read.
Mark Events As Read	[Enter]	Clears all event logs and makes them accessible via software only.
View Event Log	[Enter]	Press Enter to show all DMI Event logs.

Advanced > Fan Control Configuration Menu

BIOS Setting	Options	Description / Purpose
Automatic Fan Detection	• Next Boot • Disable • Always	**Next Boot**: Will detect fan(s) added to the motherboard upon next boot only. **Disabled**: Will NOT detect fan(s) added to the motherboard, new fans may perform erratically. **Always**: Will detect fan(s) added to the motherboard, may cause a slight delay and increased noise during startup.
Fan Control	• Enabled • Disabled	Disables or enables system fan control.
Fan Detection Error Message	• Enabled • Disabled	Enable or disable the display of fan-related error messages during boot.
Lowest Fan Speed	• Slow • Off	This option defines the fan speed at the lowest system temperature. **Slow** allows the fans to continue to run at a reduced speed at low system temperatures. **Off** turns off the fans at low system temperatures.
Lowest System Fan Speed	• Slow • Off	This option defines the system fan speed at the lowest system temperature. **Slow** allows the fans to continue to run at a reduced speed at low system temperatures. **Off** turns off the system fans at low system temperatures.
Processor Zone Damping	• High • Normal	To adjust acoustics for non-Intel® fan heatsink solutions. For more efficient fan heatsink solutions set the CPU Zone damping to **High**.

Processor Zone Response	• Aggressive • Normal • Slow	To adjust acoustics for non-Intel® fan heatsink solutions. For less efficient fan heatsink solutions, set CPU Zone Response to **Aggressive.** For more efficient fan heatsink solutions, set the CPU Zone Response to **Slow.**
Unlock Intel(R) QST	• No • Yes	Yes option allows the fan control settings to be changed using software.

Advanced > Hardware Monitoring Menu

BIOS Setting	Options	Description / Purpose
+1.5Vin	No changeable options	Displays voltage level of the +1.5V in supply
+12Vin or 12V Voltage	No changeable options	Displays voltage level of the +12V in supply
+3.3Vin	No changeable options	Displays voltage level of the +3.3V in supply
+5Vin or 5V Voltage	No changeable options	Displays voltage level of the +5V in supply
Ambient Air Temperature *This BIOS setting is present only on certain BTX form factor Intel® Desktop Boards.*	No changeable options	Displays the temperature near the remote thermal diode on BTX form factor boards.
Aux Fan Speed	No changeable options	Displays aux fan speed.
Chassis Fan Speed	No changeable options	Displays chassis fan speed
Chassis Inlet Fan	No changeable options	Displays front chassis fan speed
Chassis Outlet Fan	No changeable options	Displays rear chassis fan speed
CPU Cooling Fan	No changeable options	Displays fan speed of the CPU fan
CPU Die/Package Temperature	No changeable options	Displays processor's temperature.
CPU Fan Speed	No changeable options	Displays processor fan speed
CPU Temperature	No changeable options	Displays processor's temperature.
CPU Thermal Module Fan	No changeable options	Displays fan speed of the CPU fan
Front Fan Speed	No changeable options	Displays front fan speed.

ICH Temperature	No changeable options	Displays temperature in the ICH zone. *Refer to the board's Technical Product Specification for the exact location of this sensor.*
Internal Temp	No changeable options	Reads the thermal sensor in the Heceta chip itself
MCH Temperature	No changeable options	Displays temperature in the MCH zone. *Refer to the board's Technical Product Specification for the exact location of this sensor.*
Motherboard Temperature	No changeable options	Displays temperature in the remote thermal sensor zone. *Refer to the board's Technical Product Specification for the exact location of this sensor.*
Processor Fan Speed	No changeable options	Displays processor fan speed.
Processor Temp	No changeable options	Displays processor zone temperature.
Processor Thermal Margin *This BIOS setting is present only on Intel® Desktop Boards with certain processors installed.*	No changeable options	Displays the processor's thermal specification minus its current temperature, giving you a general indication of how much hotter it can get before it is running hotter than what it is designed to handle. Example: *Processor Thermal Margin = 10°C* This processor can get about 10°C hotter than it is currently running before it will exceed its thermal specification.
Processor Zone Temperature	No changeable options	Displays processor zone temperature.
Rear Fan Speed	No changeable options	Displays rear fan speed.
Remote Temp	No changeable options	Displays the temperature of the onboard remote thermal diode.
System Fan Speed	No changeable options	Displays system fan speed
System Zone 1 Temperature	No changeable options	Displays system zone 1 temperature. *Refer to the board's Technical Product Specification for the exact location of this sensor.*
System Zone 2 Temperature	No changeable options	Displays system zone 2 temperature. *Refer to the board's Technical Product Specification for the exact location of this sensor.*
Vccp or VCC	No changeable options	Displays voltage level of the VCCP in supply
VCORE Voltage	No changeable options	Displays the operating voltage of the processor.

Advanced > Management Configuration Menu

BIOS Setting	Options	Description / Purpose
ASF Support	• Enabled • Disabled or • Automatic • Manual - User Defined • Disabled	Disables or enables Alert Standard Format (ASF). *For information on ASF, refer to* http://www.intel.com/design/network/papers/ASF_whitepaper.htm
Enter AMT BX Setup	• Enabled • Disabled	Allows AMT BIOS Extensions Setup to be entered on next boot up
Intel® AMT IDER Operation *This BIOS setting is present only on D945G boards supporting Intel® Active Management Technology.*	• Enabled • Disabled	Enables or disables IDE Redirect (IDER).
Intel® AMT SOL Operation *This BIOS setting is present only on D945G boards supporting Intel® Active Management Technology.*	• Automatic • Enabled • Disabled	Allows Serial Over LAN (SOL) to be forced enabled or disabled. Rate is set to115200 baud.

Advanced > Memory Configuration Menu

BIOS Setting	Options	Description / Purpose
CPC Override	• Auto • Enabled • Disabled	Controls Command Per Clock/1n rule mode. When enabled, allows DRAM controller to attempt Chip Select assertions in two consecutive common clocks.
Memory Frequency	Options depend on board model (can be from 333MHz to 800MHz)	Allows you to manually set the speed of your memory
Memory Correction *This BIOS setting is present only on Desktop Boards that support ECC memory when ECC DIMMs are installed.*	• Non-ECC • ECC	Allows you to turn error reporting on or off if the system and all the memory installed supports ECC (Error Correction Code).
Memory Mode	No changeable options	Displays single or dual channel operation.

PCI Latency Timer	• 32 • 64 • 96 • 128 • 160 • 192 • 224 • 248	Sets PCI latency time.
SDRAM CAS# Latency	• 2.0 • 2.5 • 3.0	Selects the number of clock cycles required to address a column in memory. Corresponds to CL. *For information on CAS Latency, refer to http://en.wikipedia.org/wiki/Cas_latency*
SDRAM Frequency	• Auto • 266 MHz • 333 MHz • 400 MHz	Allows override of detected memory frequency value.
SDRAM RAS Act. To Pre.	• 8 • 7 • 6 • 5	Selects length of time from read to pre-change. Corresponds to tRAS, min.
SDRAM RAS# Precharge	• 4 • 3 • 2	Selects the length of time required before accessing a new row.
SDRAM RAS# to CAS# delay	• 4 • 3 • 2	Selects the number of clock cycles between addressing a row and addressing a column. Corresponds to tRCD.
SDRAM Timing Control	• Auto • Manual – Aggressive • Manual – User Defined	**Auto** allows timings to be programmed according to the memory detected. **Manual – Aggressive** selects the most aggressive user defined timings. **Manual – User Defined** allows manual override of detected SDRAM settings.
Total Memory	No changeable options	Displays the total amount of RAM.

Advanced > PCI Configuration Menu

BIOS Setting	Options	Description / Purpose
PCI Slot x IRQ Priority	• Auto • 3 • 5 • 9 • 10 • 11	Allows selection of IRQ priority.

Advanced > PCI Express Configuration Menu

BIOS Setting	Options	Description / Purpose
Compliance Test Pattern	• Enabled • Disabled	Used for making sure a PCI Express slot remains functional and enabled per PCI Express specification for Compliance test card testing of PCI Express cards.
Link Stability Algorithm	• Enabled • Disabled	Used for verifying PCIe Link is up and running for x16 slot for x16 graphics cards and is part of the Intel Chipset BIOS Spec documentation for 915/925.
PCI Express 1.1 Compliance Mode	• Enabled • Disabled	If enabled, this setting will force the maximum speed of any PCI Express card to Generation 1 mode, even if the card supports Generation 2.
PCIE x16 Link Retrain *This BIOS setting may be present on Intel® Desktop Boards that include PCI Express slots.*	• GFX Card • Disabled • Enabled	Used to adjust configuration for devices such as PCIe graphics cards which may need accommodations to function properly when link training. Some PCI Express cards may not be detected properly. Link retraining allows the system to keep trying to train or detect and configure the card. This setting will increase boot time.
PEG Negotiated Width *This BIOS setting is present only on Intel® Desktop Boards that include PCI Express slots.*	No changeable options	This option is read only and provides the link train width (x1, x4, x8, x16) of the PCIe device connected in the x16 PCIe slot. This information is provided for determining performance issues with x4, x8, and x16 PCIe cards if they are inserted into the x16 PCI slot while the Intel Integrated video (PCIe graphics) is enabled and the "PEG Allow > 1" option is disabled.

Advanced > Peripheral Configuration Menu

BIOS Setting	Options	Description / Purpose
1394 *This BIOS setting is present only on Intel® Desktop Boards that include IEEE 1394.*	• Disable • Enable	Disables or enables IEEE 1394 support
ASF Support	• Disable • Enable	Disables or enables Alert Standard Format (ASF). *For information on ASF, refer to* http://www.intel.com/design/network/papers/ASF_whitepaper.htm
Audio	• Disable • Enable	Enables or disables onboard audio.
Auxiliary Power *This BIOS setting is present only on Intel® Desktop Boards that include an onboard auxiliary power connector.*	• Disable • Enable	Enables or disables on the onboard auxiliary power connector.

Base I/O Address *(for the Parallel Port)* *This BIOS setting is present only when Parallel Port is set to Enabled*	• 378 • 278	Specifies the base I/O address for the parallel port, if Parallel Port is Enabled.
Base I/O Address *(for the Serial Port)* *This BIOS setting is present only when Serial Port A is set to Enabled*	• 3F8 • 2F8 • 3E8 • 2E8	Specifies the base I/O address for serial port A if serial port A is enabled.
ECP Mode Use DMA	No changeable options	By default, Channel 3 is used.
Enhanced Consumer IR	• Disable • Enable	Enables or disables consumer infrared communication feature.
Front Panel 1394 Port 1 *This BIOS setting is present only on Intel® Desktop Boards that include front panel IEEE 1394 capability.*	• 1394A • 1394B	Sets the IEEE 1394 mode for the front panel 1394 Port.
Front Panel 1394 Port 2 *This BIOS setting is present only on Intel® Desktop Boards that include front panel IEEE 1394 capability.*	• 1394A • 1394B	Sets the IEEE 1394 mode for the front panel 1394 Port.
HD Audio Link and BP/FP Audio out	• Enable Both • Disable Both • Disable Only BP/FP Audio	Enable Both: Allow audio output to both the Back Panel/Front Panel and HD Audio Link Disable Both: Disable both audio out streams Disable Only BP/FP Audio: Only HD audio content through the HD Audio Link
High Definition Front Panel Audio *This BIOS setting is present only on Intel® Desktop Boards that include High Definition Audio.*	• Disable • Enable	Enables or disables High Definition Front Panel Audio
Interrupt *(for the Parallel Port)* *This BIOS setting is present only when Parallel Port is set to Enabled*	• IRQ 5 • IRQ 7	Specifies the interrupt for the parallel port, if Parallel Port is Enabled.
Interrupt *(for the Serial Port)* *This BIOS setting is present only when Serial Port A is set to Enabled*	• IRQ 3 • IRQ 4	Specifies the interrupt for serial port A if serial port A is enabled.

Legacy Front Panel Audio	• Disable • Enable	When enabled, the system assumes that a High Definition audio connector is not present in the system (Legacy audio is present) When disabled, the system assumes that a High Definition audio connector is present in the system.
Mode	• Output only • Bi-directional • EPP • ECP	Selects the mode for the parallel port. Not available if the parallel port is disabled. Output Only operates in AT*-compatible mode. Bi-directional operates in PS/2-compatible mode. EPP is Enhanced Parallel Port mode, a high-speed bi-directional mode for non-printer peripherals. ECP is Enhanced Capability Port mode, a high-speed bi-directional mode for printers and scanners.
Mono Speaker Header	• Disable • Enable	Enables or disables the onboard mono speaker header.
Onboard 1394 *This BIOS setting is present only on Intel® Desktop Boards that include onboard IEEE 1394LAN.*	• Disable • Enable	Enables or disables the onboard IEEE 1394.
Onboard Audio *This BIOS setting is present only on Intel® Desktop Boards that include onboard audio.*	• Disable • Enable	Enables or disables the onboard audio.
Onboard LAN Boot ROM	• Disable • Enable	Disables or enables booting from the network.
Onboard LAN *This BIOS setting is present only on Intel® Desktop Boards that include onboard LAN.*	• Disable • Enable	Enables or disables the onboard LAN.
Parallel Port	• Disable • Enable • Auto	Configures the parallel port. **Auto** assigns LPT1 the address 378h and the interrupt IRQ7. An * (asterisk) displayed next to an address indicates a conflict with another device.
Rear Audio Optical Output	• Disable • Enable	If enabled, sends digital audio from the external TOSLINK to the internal header

Secondary SATA Controller Mode *This BIOS setting is present only on Intel® Desktop Boards that include a secondary SATA controller.*	• IDE • RAID	Sets the mode for the secondary SATA controller. If RAID is selected, the Marvell* RAID driver must be installed
Secondary SATA Controller *This BIOS setting is present only on Intel® Desktop Boards that include a secondary SATA controller.*	• Disable • Enable	Enables or disables the secondary SATA controller.
Serial Port A	• Disable • Enable • Auto	Configures serial port A. **Auto** assigns the first free COM port, normally COM1, the address 3F8h, and the interrupt IRQ4. An * (asterisk) displayed next to an address indicates a conflict with another device.
Trusted Platform Module *This BIOS setting is present only on Intel® Desktop Boards that include support for Trusted Platform Module (TPM).*	• Disable • Enable	Disables or enables Trusted Platform Module (TPM) *For information on TPM, refer to http://en.wikipedia.org/wiki/Trusted_Platform_Module*

Advanced > USB Configuration Menu

BIOS Setting	Options	Description / Purpose
High Speed USB	• Enabled • Disabled	Disable this option when a USB 2.0 driver is not available.
Legacy USB Support	• Enabled • Disabled	Enables support for legacy USB.
USB 2.0	• Enabled • Disabled	**Disabled** will turn off all USB functionality. This feature can be used for security purposes.
USB 2.0 Legacy Support	• Full-Speed • Hi-Speed	Configures the USB 2.0 legacy support to Full-Speed (12 Mbps) or Hi-Speed (480 Mbps).
USB Controller	• Enabled • Disabled	Disables or enables USB functionality.
USB EHCI Controller	• Enabled • Disabled	Enables or disables high-speed USB transfers (USB 2.0)
USB Function *This BIOS setting is present only when the BIOS configuration jumper is set to Maintenance mode.*	• Enabled • Disabled	Disables or enables USB functionality. If Disabled, the Advanced > USB Configuration menu will NOT include any changeable options. The menu will appear blank.

USB Legacy	• Enabled • Disabled	USB Legacy support allows the BIOS to interact with a USB keyboard, and in limited cases, a USB mouse.
USB Ports	• Enable all • Disable all • Disable Dual Rear Ports • Disable FP USB Header	Enables or disables USB ports. Options to enable or disable may vary by board.
USB ZIP Emulation Type	• Floppy • Hard Disk	Allows you to set the emulation type for USB Zip drives

Advanced > Video Configuration Menu

BIOS Setting	Options	Description / Purpose
Aperture Size	• 4MB • 8MB • 16MB • 32MB • 128MB • 256MB	Allows you to set the amount of system memory available for direct access by the graphics device. Available aperture sizes may vary depending on board model.
Boot Display Device	• DVI + VGA • VGA + LVDS	Designates the primary graphics device.
DVMT Mode	• DVMT • Fixed • Both	Dynamic Video Memory Technology **DVMT** mode is memory that is dynamically allocated based on memory requests made by application and are released back to the system once the requesting application has been terminated. **Fixed** mode is non-contiguous page locked memory allocated during driver initialization to provide a static amount of memory. **Both** allows the combination of both Fixed and DVMT type driver allocation methods, used to guarantee a minimum amount of memory but give the flexibility of DVMT allocation scheme and performance enhancement. These mode options will ensure that a certain minimum amount of memory will always be dedicated to graphics. *For information on DVMT, refer to the Intel® Graphics Media Accelerator 900 White Paper at http://www.intel.com/design/chipsets/applnots/30262403.pdf*
Frame Buffer Size	• 1 MB • 8 MB • 16 MB *Options may vary depending on board model.*	Sets the frame buffer size. Frame buffer size is the total amount of system memory locked by the BIOS for video. A larger frame buffer size should result in higher video performance.

IGD Aperture Size	• 4MB • 8MB • 16MB • 32MB • 128MB • 256MB Options may vary depending on board model.	Establishes the maximum amount of system memory that the Operating System can use for video memory. This is primarily used for buffering textures for the AGP video device.
IGD DVMT Memory	• 32MB • 64 MB • 128 MB • Maximum DVMT	Intel Dynamic Video Memory Technology 3.0 (DVMT 3.0) allows additional memory to be allocated for graphics usage based on application need. Once the application is closed, the memory that was allocated for graphics usage is then released and made available for system use. **Maximum DVMT** allows up to 224 MB of memory to be allocated for graphics. *For information on DVMT, refer to the Intel® Graphics Media Accelerator 900 White Paper at http://www.intel.com/design/chipsets/applnots/30262403.pdf*
Onboard Video Memory Size	• 32MB • 64MB • 128MB • 256MB	Amount of system memory available for direct access by the graphics device.
PCI/VGA Palette Snoop	• Enabled • Disabled	Some special VGA cards, high-end hardware MPEG decoders etc. need to be able to look at the video card's VGA palette to determine what colors are currently in use. Enabling this feature turns on this palette "snoop". This option is only very rarely needed. It should be left at **Disabled** unless a video device specifically requires the setting enabled upon installation.
Primary Display Adapter	• PCI • Onboard • PCI-E	Allows selecting a specific video controller as the display device that will be active when the system boots.
Primary Video Adapter	• Ext PCI Express Graphics • Ext PCI • Auto Options may vary depending on your configuration.	Allows selecting a specific video controller as the display device that will be active when the system boots.

Secondary Video Adapter	• Ext PCI Express Graphics • Ext PCI • Auto Options may vary depending on your configuration.	Allows selecting a specific video controller as the secondary display device.

Security Menu

BIOS Setting	Options	Description / Purpose
Chassis Intrusion	• Disable • Enable	Enables or disables the chassis intrusion feature.
Clear User Password *This BIOS setting is present only if a user password has been set.*	• Yes • No	Clears the user password.
Expansion Card Text	• Disable • Enable	Displays add in Option ROM text
Hard Disk Drive Password	No changeable options	Reports if there is a User hard disk drive password set.
HDD Security Configuration	No changeable options	Displays status of security features.
Intel Trusted Execution Technology	• Disable • Enable	Enables or disables Intel Trusted Execution Technology. *For information on Trusted Execution Technology, refer to* http://www.intel.com/technology/security/
Intel® Virtualization Technology	• Disable • Enable	Enables or disables Virtualization Technology. Takes affect only after power cycling. *For more information refer to* http://www.intel.com/technology/virtualization/index.htm
Intel® VT for Directed I/O (VT-d)	• Disable • Enable	Enables or disables Intel® VT for Directed I/O. *For information on Intel® VT, refer to* http://www.intel.com/technology/advanced_comm/virtualization.htm
Master Hard Disk Drive Password	No changeable options	Reports if there is a Master hard disk drive password set.
NX Technology	• Disable • Enable	Enables or disables "No Execute" memory protection.
Security Option	• Setup • System	If you set a Supervisor or User password, selects whether the password is required every time the system boots or only when you enter Setup

Set Hard Disk Drive Password	Password can be 2 - 8 alphanumeric characters in length.	Specifies the User hard disk drive password. The User hard disk drive password when installed on the hard disk drive will block read and write accesses to a hard disk upon each power-cycle until the Master or User hard disk drive password is submitted to the drive by software for verification.
Set Master Hard Disk Drive Password	Password can be 2 - 8 alphanumeric characters in length.	Specifies the Master hard disk drive password. The Master hard disk drive password when installed on the hard disk drive will not lock the drive. The Master hard disk drive password exists as an unlock override in the event that the User hard disk drive password is forgotten. When the Master hard disk drive password is installed on the hard disk drive as the only password, the drive will not lock upon each reset or power-on. Only the installation of the User hard disk drive password will cause a hard disk to be locked upon a system power-cycle.
Set Supervisor Password	Password can be up to seven alphanumeric characters.	Specifies the supervisor password.
Set User Password	Password can be up to seven alphanumeric characters.	Specifies the user password.
Supervisor Password	No changeable options	Reports if there is a supervisor password set.
User access Level *This BIOS setting is present only if both a user password and a supervisor password have been set.*	• Limited • No Access • View Only • Full	Sets BIOS Setup Utility access rights for user level.
User confirmation required	• No • Yes	Select whether user confirmation is required to perform changes using VA Configuration Interface. Valid for VA 3.0 only.
User Password	No changeable options	Reports if there is a user password set.
VA Configuration Interface	• Lock • Unlock	Lock or unlock VA Configuration Interface. If locked, all interface functions will return error. Valid for VA 3.0 only.
VA Operation	• Disable • Enable	Enable or disable Virtual Appliance (VA) operation. Valid for VA 3.0 only.
VT Technology	• Disable • Enable	Enables or disables Virtualization Technology. *For more information refer to* *http://www.intel.com/technology/virtualization/index.htm*
XD Technology	• Disable • Enable	Enables or disables "No Execute" memory protection. *For more information, refer to* *http://www.intel.com/technology/xdbit/*

Power Menu

BIOS Setting	Options	Description / Purpose
ACPI	No changeable options	Opens the sub-menu for ACPI (Advanced Configuration and Power Interface). *For information on ACPI sleep states, refer to http://en.wikipedia.org/wiki/Advanced_Configuration_and_Power_Interface*
ACPI Suspend Mode (or ACPI Suspend State)	• S1 State • S3 State	Specifies the ACPI sleep state. *For information on ACPI sleep states, refer to http://en.wikipedia.org/wiki/Advanced_Configuration_and_Power_Interface*
After Power Failure	• Stay Off • Last State • Power On	Determines the mode of operation if a power loss occurs. **Stay Off** keeps the power off until the power button is pressed. **Last State** restores the previous power state before power loss occurs. **Power On** restores power to the computer.
APM	• Enabled • Disabled	Disables or enables APM (Advanced Power Management). *For information on APM, refer to http://en.wikipedia.org/wiki/Advanced_Power_Management*
CPU C State	• Enabled • Disabled	Allows processor to set idle state for power savings. Takes affect only after reboot.
EIST	• Enabled • Disabled	Speedstep technology: Advanced Power management which includes Frequency and voltage *For information on EIST, refer to http://en.wikipedia.org/wiki/EIST*
Energy Lake	• Enabled • Disabled	Disables or enables Energy Lake power management technology. Energy Lake technology introduces two main end-user features: the “Consumer Electronics” (CE)-like device power behavior, and maintaining system state and data integrity during power loss events).
Enhanced Intel SpeedStep® Technology	• Enabled • Disabled	Allows processor to dynamically transition speed and voltage states. *For information on SpeedStep, refer to http://en.wikipedia.org/wiki/Speedstep*
Hard Drive	• Enabled • Disabled	Enables power management for hard disks during APM standby mode.

Inactivity Timer	• Off • 1 Minute • 5 Minutes • 10 Minutes • 20 Minutes • 30 Minutes • 60 Minutes • 120 Minutes	Specifies the amount of time before the computer enters APM standby mode.
Intel® Quick Resume Technology *This BIOS setting is present only on boards supporting Intel® Viiv˜ Technology.*	• Enabled • Disabled	Enables or disables Intel® Quick Resume Technology. *For information on iQRT, refer to http://www.intel.com/support/viiv/qrt.htm*
Keyboard Select	• Disable • Keyboard 1	Select Keyboard 1 to allow a PS/2 keyboard to wake the system from the S5 state.
Microsoft Away Mode	• Enabled • Disabled	Enables or disables Microsoft Away Mode Power Management for Windows XP Media Center Edition. Contact Microsoft for device driver support. If Away mode is enabled, the computer enters Away mode instead of standby. The computer enters Away mode when you press the Power button on the remote control. This behavior also occurs when you press SLEEP on the keyboard. After the computer enters Away mode, the computer appears to be turned off. However, the computer is still running. For example, it can still perform functions such as record TV shows or serve Windows Media Extender sessions.
Power Management	• Enabled • Disabled	Enables or disables the APM feature.
Processor Power Management	• Enabled • Disabled	Enable or disable EIST and processor C-state (C1E).
S1 State Indicator	• Off • Blink • On	Sets the action for the front panel power LED when the system is in S1 sleep mode. Off: LED stays of when in S1 Blink: LED blinks when in S1 On: LED stays solid on when in S1
S3 State Indicator	• Off • Blink • On • Alternate Color	Sets the action for the front panel power LED when the system is in S3 sleep mode. Off: LED stays of when in S3 Blink: LED blinks when in S3 On: LED stays solid on when in S3 Alternate color: Systems built with a dual-color front panel power LED may set this
Video Repost *This BIOS setting is present only when ACPI Suspend State is set to S3.*	• Enabled • Disabled	Allows the video BIOS to be initialized coming out of the S3 state. Some video controllers require this option to be enabled.

Wake on LAN from S5 *This BIOS setting is present only on Intel® Desktop Boards that include onboard LAN.*	• Stay Off • Power-On	In ACPI soft-off mode only, determines how the system responds to a LAN wake up event when the system is in the ACPI soft-off mode.
Wake on Modem Ring	• Stay Off • Power-On	Specifies how the computer responds to an incoming call on an installed modem when the power is off.
Wake on PCI PME	• Stay Off • Power-On	Determines how the system responds to a PCI PME wake up event.
Wake on PS/2 Keyboard from S3	• Stay Off • Power-On	Determines how the system responds to a PS/2 keyboard wake up event.
Wake on PS/2 Mouse from S3	• Stay Off • Power-On	Determines how the system responds to a PS/2 mouse wake up event.
Wake system from S5	• Enabled • Disabled	Enable or disable System wake on alarm event. When enabled, system will wake on the day/hour/minute/second specified.

Boot Menu

BIOS Setting	Options	Description / Purpose
1st ATAPI CD-ROM Drive *This boot device submenu is present only if at least one boot device of this type is installed. This list will display up to four ATAPI CD-ROM drives, the maximum number of ATAPI CD-ROM drives supported by the BIOS.*	Dependent on installed ATAPI CD-ROM drives	Specifies the boot sequence from the available ATAPI CD-ROM drives. To specify boot sequence: 1. Select the boot device with <↑> or <↓>. 2. Press <Enter> to set the selection as the intended boot device.
1st Boot Device	• Removable Device • Hard Drive • ATAPI CD-ROM • Network • Disabled	Specifies the boot sequence from the available devices. To specify boot sequence: 1. Select the boot device with <↑> or <↓>. 2. Press <Enter> to set the selection as the intended boot device.
1st Hard Disk Drive *This boot device submenu appears only if at least one boot device of this type is installed. This list will display up to 12 hard disk drives, the maximum number of hard disk drives supported by the BIOS.*	Dependent on installed hard drives	Specifies the boot sequence from the available hard disk drives. To specify boot sequence: 1. Select the boot device with <↑> or <↓>. 2. Press <Enter> to set the selection as the intended boot device.

1st Removable Device *This boot device submenu is present only if at least one boot device of this type is installed. This list will display up to four removable devices, the maximum number of removable devices supported by the BIOS.*	Dependent on installed removable devices	Specifies the boot sequence from the available removable devices. To specify boot sequence: 1. Select the boot device with <↑> or <↓>. 2. Press <Enter> to set the selection as the intended boot device.
2nd Boot Device	• Removable Device • Hard Drive • ATAPI CD-ROM • Network • Disabled	Specifies the boot sequence from the available devices. To specify boot sequence: 1. Select the boot device with <↑> or <↓>. 2. Press <Enter> to set the selection as the intended boot device.
3rd Boot Device	• Removable Device • Hard Drive • ATAPI CD-ROM • Network • Disabled	Specifies the boot sequence from the available devices. To specify boot sequence: 1. Select the boot device with <↑> or <↓>. 2. Press <Enter> to set the selection as the intended boot device.
4th Boot Device	• Removable Device • Hard Drive • ATAPI CD-ROM • Network • Disabled	Specifies the boot sequence from the available devices. To specify boot sequence: 1. Select the boot device with <↑> or <↓>. 2. Press <Enter> to set the selection as the intended boot device.
AddOn ROM Display Mode	• Enabled • Disabled	**Enabled**: the logo screen will be followed by the "AddOn ROM" initial screen (the screen showing the add-on card BIOS message). **Disabled:** no "Add-On ROM" screen is displayed.
ATAPI CD-ROM Drives	No changeable options	Opens the ATAPI CD-ROM Drive sub-menu where you may specify the boot sequence from the available ATAPI CD-ROM drives. *For information on ATAPI, refer to http://en.wikipedia.org/wiki/Atapi*
Boot Device Priority	• Floppy Drive • CD/DVD-ROM Drive • Hard Disk Drive • Ethernet	Specifies the boot sequence from the available devices. The list of options may vary depending on board model and hardware configuration.
Boot Drive Order	Dependent on installed bootable devices	Allows you to specify the boot sequence from the available types of boot devices.
Boot Menu Type	• Normal • Advance	**Normal** allows you to set boot priority based on type of device. **Advanced** allows you to set boot priority for each device regardless of category

Boot to Network	• Enabled • Disabled	Disables or enables booting from the network.
Boot to Optical Devices	• Enabled • Disabled	Disables or enables booting from optical devices (CD/DVD).
Boot to Removable Devices	• Enabled • Disabled	Disables or enables booting from removable devices.
Boot USB Devices First	• Enabled • Disabled	Sets USB devices to be first in boot order.
CD/DVD Drive Order	Lists all installed CD/DVD devices	Allows you to set the boot order of CD/DVD drives (used when Boot Menu type is set to normal)
CD-ROM Boot Priority	Lists all installed CDrom devices	Allows you to set the boot order of CDROM drives
Halt On	• All Errors • No Errors • All, But Keyboard	Used to configure what types of POST errors will halt the system boot.
Hard Disk Boot Priority	Lists all installed hard drive devices	Allows you to set the boot order of hard drives
Hard Disk Drives	No changeable options	Opens the Hard Disk Drives sub-menu where you may specify the boot sequence from the available hard disk drives.
Hard Drive Order	Lists all installed hard drive devices	Allows you to set the boot order of hard drives (used when Boot Menu type is set to normal)
Intel Rapid BIOS Boot	• Enabled • Disabled	Allows BIOS to skip certain tests while booting.
PXE Boot to LAN	• Enabled • Disabled	Disables or enables PXE boot to LAN. *For information on PXE, refer to http://en.wikipedia.org/wiki/Preboot_Execution_Environment*
Removable Device Priority	Lists all installed removable devices	Allows you to set the boot order of removable devices (floppy drives, USB thumb drives, etc)
Removable Devices	No changeable options	Opens the Removable Devices sub-menu where you may specify the boot sequence from the available removable devices.
Removable Drive Order	Lists all installed removable devices	Allows you to set the boot order of removable devices (floppy drives, USB thumb drives, etc) - used when Boot Menu type is set to normal.
Scan User Flash Area	• Disabled • Enabled	Enables the BIOS to scan the flash ROM for user binary files that are executed at boot time.
Silent Boot	• Enabled • Disabled	***Disabled*** *displays normal POST messages.* ***Enabled*** *displays OEM logo instead of POST messages.*
UEFI boot	• Enabled • Disabled	Enables or disables Unified Extended Firmware Interface (UEFI) Boot. *For information on UEFI, refer to http://www.uefi.org/home*
USB Boot	• Enabled • Disabled	Disables or enables booting from USB boot devices.

USB Mass Storage Emulation Type	• Auto • All Removable • All Fixed Disc • Size	Allows you to set the emulation type for USB drives. **Auto** - relies on USB device design and media format to set emulation type. **All Removable** - set USB mass devices to emulate removable drives. Master Boot Record format needed for USB mass device. **All Fixed Disc** - sets USB mass devices to emulate fixed discs. **Size** - sets emulation type based on media size.
ZIP Emulation Type	• Floppy • Hard Disk	Allows you to set the emulation type for USB Zip drives

Intel® ME Menu

BIOS Setting	Options	Description / Purpose
Alternate DNS Address	User defined	Enter the address in dot-decimal notation.
Change Intel® Management Engine Password	User defined	Intel® ME password must be changed from the default password prior to gaining access to other ME options. Intel® ME passwords must be between 8 and 32 characters long, have at least one upper case character, one lower case character, one number, and a special character (for example: !, @, #, $, %, ^, &, *). The system owner should document the new Intel ME password, store it in a secured location (a vault, safe deposit box, or off-site storage), and have it available for future use. This document should be updated after any password change is made.
Compatibility Mode	• Intel® AMT Generation 2.0 • Intel® AMT Generation 1.0	Depending on the 3rd party management software that is chosen to be used with this system (if any), set the Compatibility Mode appropriate to the management software.
Computer Name	User defined	Sets the computer name. The computer name must be between 1 and 32 characters long, may contain upper case characters, lower case characters numbers, however spaces, dashes, and any other special characters (for example: !, @, #, $, %, ^, &, *) are not allowed.
DHCP Enabled	[X] [ ]	Toggle the checkbox (with the Enter key or the Space bar) to enable or disable DHCP. *For information on DHCP, refer to http://en.wikipedia.org/wiki/Dhcp*
Domain Name	User defined	Sets the domain name.

Gateway Address	User defined	Enter the address in dot-decimal notation.
Idle Time Out	User defined	A value between **0** and **65535**. Sets the number of minutes of idle time before Intel® ME will sleep. Default value is 0. With this setting, Intel® ME will not sleep, with no power savings. *This option is present only if "Turn on Intel® ME in Sleep States" is enabled.*
Intel® ME After Power Failure	• Power On • Stay Off	Determines mode of operation if power loss occurs. **Stay Off**: Intel® ME will remain off once power is restored. **Power On**: Restores ME to the power on state.
IP Address	User defined	Enter the address in dot-decimal notation.
Manageability Feature	• None • Intel® AMT • ASF	Default value is **None.** With this setting, you are allowed to enable/disable onboard LAN. **Intel® AMT** enables Intel® Active Management Technology - for more information, refer to http://www.intel.com/technology/platform-technology/intel-amt/ **ASF** enables ASF Support - For more information, refer to http://www.intel.com/design/network/papers/ASF_whitepaper.htm
Preferred DNS Address	User defined	Enter the address in dot-decimal notation.
Provisioning Mode	• Enterprise • Small-Medium Business	Configures the Intel® AMT provisioning mode. **Enterprise** mode supports both HTTP Digest and TLS security, however this mode requires a provisioning server to function. **Small-Medium Business** mode supports HTTP Digest only (no TLS support).
Provisioning Server Address	User defined	Enter the address of the Provisioning Server in dot-decimal notation.

Provisioning Server Port	User defined	Enter the port of the Provisioning Server. Port number range 0 - 65535.
Save and Commit Settings		Save and commit changes made to Intel® ME or Intel® AMT.
Set PRTC	User defined	Sets the Intel® AMT PRTC (Protected Real Time Clock). Enter PRTC in Greenwich Mean Time (GMT) format.
SOL/IDER Authentication Mode	• Kerberos only • User Name and Password	Selects how IDER and SOL operation verify and secure interfaces on LAN
Subnet Mask	User defined	Enter the address in dot-decimal notation.
TLS Pre-Shared Key (PSK) PID	User defined	The PID is an 8 character alpha-numeric string in dash-separated format, e.g. ABCD-123K. Both PID and PPS must be set to provide the ability to establish a secure TLS-PSK session. *For information on TLS, refer to* http://en.wikipedia.org/wiki/Transport_Layer_Security
TLS Pre-Shared Key (PSK) PPS	User defined	The PPS is a 32 character alpha-numeric string in dash-separated format, e.g. EGET-GZFF-C6A6-ORRR-HQXP-C9JI-RJGB-KBS8. Both PID and PPS must be set to provide the ability to establish a secure TLS-PSK session. *For information on TLS, refer to* http://en.wikipedia.org/wiki/Transport_Layer_Security
Turn on Intel® ME in Sleep States	• Never/Disabled • Always/Enabled	This option determines the ACPI state that Intel® ME is in when in ACPI sleep states. **Never** disables management in ACPI sleep states. **Always** enables management in ACPI sleep states.
Partial Intel® AMT Reset	No changeable options	Resets Intel® AMT to defaults, except PSKs (PPS/PID keys) Intel® ME admin password, domain name, host name and provisioning server details. This option is only present if the system is Enterprise provisioned. If this option is chosen, no other changes to Intel® ME configuration will be allowed. You must save and exit before more changes can be made to Intel® ME.

Exit Menu

BIOS Setting	Options	Description / Purpose
Discard Changes	No changeable options	Discards changes without exiting Setup. The option values present when the computer was turned on are used.
Exit Discarding Changes	No changeable options	Exits without saving any changes made in the BIOS Setup program.
Exit Saving Changes	No changeable options	Exits and saves the changes in CMOS SRAM.
Load Custom Defaults	No changeable options	Loads the custom defaults for Setup options.
Load Optimal Defaults	No changeable options	Loads optimal defaults.
Save Custom Defaults	No changeable options	Saves the current values as custom defaults. Normally, the BIOS reads the Setup values from flash memory. If this memory is corrupted, the BIOS reads the custom defaults. If no custom defaults are set, the BIOS reads the factory defaults.