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.*
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
Exit	Saves or discards changes to Setup program options

The presence of many 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/design/motherbd/recoverybios.htm.

Maintenance Menu

BIOS Setting	Options	Description / Purpose
Board ID	No changeable options	Value that uniquely identifies the SKU of the board.
C1E	• Enabled • Disabled	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 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	• Enabled • Disabled	**Enabled** uses processor default frequency ratio. **Disabled** allows programming of frequency ratio.
Fixed Disk Boot Sector	• Normal • Write Protect or • Enable • Disable	Boot sector VIRUS protection
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.
Use Maximum Multiplier	• Automatic • Disabled	Only for unlocked processors: either sets CPU speed to minimum rated multiplier or rated multiplier (Speed)

Main Menu

BIOS Setting	Options	Description / Purpose
BIOS Version	No changeable options	Displays the version of the BIOS currently installed on the PC.
Cache RAM	No changeable options	Displays the size of second-level cache and whether it is ECC-capable.

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.
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.
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	• Enabled • Disabled	Disables or enables Alert Standard Format (ASF). For more information, refer to http://www.intel.com/support/motherboards/desktop/sb/cs-010502.htm
CPU Fan Control	• Enabled • Disabled	Allows the CPU fan to be controlled by the fan control system (HECETA). If disabled, the CPU fan will run at 100%.
Display Setup Prompt	• On • Off	Displays the "F2 to enter BIOS setup" message during boot.

HDD Self Diagnostic	• Enabled • Disabled	Enables or disables SMART technology.
Limit CPUID MaxVal	• Enabled • Disabled	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.
Max CPUID Value Limit	• Enabled • Disabled	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	• Enabled • Disabled	Allows the system fans to be controlled by the fan control system (HECETA). This does not include the CPU fan. If disabled, 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 more information, 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.
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.
IOAPIC Enable	• Enabled • Disabled	Enables or disables I/O Programmable Interrupt Controller.
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
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.
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.

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	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** 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** only appears on ICHXR chipsets; this enables RAID which requires 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
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.

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	Specifies the hard disk drive pre-delay. Causes the BIOS to insert a delay before attempting to detect IDE drives in the system.
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.
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 additional information, 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.
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.
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.
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.
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.
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.
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.
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	No changeable options	Discards all events in the event log.
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 event logging.
Mark DMI Events As Read	[Enter]	Marks all DMI events in the event log as read.
Mark Events As Read	[Enter]	Marks all DMI events in the event log as read.
View DMI Event Log	[Enter]	Press Enter to show all DMI Event logs.

Advanced > Fan Control Configuration Menu

BIOS Setting	Options	Description / Purpose
Fan Control	• Enabled • Disabled	Disables or enables system fan control.
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.

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
Aux Fan Speed	No changeable options	Displays aux fan speed.
Chassis Fan Speed	No changeable options	Displays chassis fan speed
CPU Fan Speed	No changeable options	Displays processor fan speed
CPU Temperature	No changeable options	Displays processor's temperature.
Front Fan Speed	No changeable options	Displays front fan speed.
Internal Temp	No changeable options	Reads the thermal sensor in the Heceta chip itself
Processor Fan Speed	No changeable options	Displays processor fan speed.
Processor Temp	No changeable options	Displays processor zone temperature.
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.
System Zone 2 Temperature	No changeable options	Displays system zone 2 temperature.
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 more information, refer to http://www.intel.com/support/motherboards/desktop/sb/cs-010502.htm
Enter AMT BX Setup	• Enabled • Disabled	Allows AMT BIOS Extensions Setup to be entered on next bootup

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.
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.
PCIE x16 Link Retrain *This BIOS setting is present only on Intel® Desktop Boards that include PCI Express slots.*	• GFX Card • Disabled • Enabled	Used to adjust configuration for any devices such as PCIe graphics cards which may need accommodations to function properly when link training such as: **GFX Card** - Reduce retry buffer depth to a lower than typically required value; bypass scrambler and DO

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.*	• Enabled • Disabled	Disables or enables IEEE 1394 support
ASF Support	• Enabled • Disabled	Disables or enables Alert Standard Format (ASF). For more information, refer to http://www.intel.com/support/motherboards/desktop/sb/cs-010502.htm
Audio *This BIOS setting is present only on Intel® Desktop Boards that include onboard audio.*	• Enabled • Disabled	Enables or disables onboard audio.
Auxiliary Power *This BIOS setting is present only on Intel® Desktop Boards that include an onboard auxiliary power connector.*	• Enabled • Disabled	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.

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.
High Definition Front Panel Audio *This BIOS setting is present only on Intel® Desktop Boards that include High Definition Audio.*	• Enabled • Disabled	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 FP Audio	• Enabled • Disabled	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 Extended Parallel Port mode, a high-speed bi-directional m
Onboard 1394 *This BIOS setting is present only on Intel® Desktop Boards that include onboard IEEE 1394LAN.*	• Enabled • Disabled	Enables or disables the onboard IEEE 1394.

Onboard Audio *This BIOS setting is present only on Intel® Desktop Boards that include onboard audio.*	• Enabled • Disabled	Enables or disables the onboard audio.
Onboard LAN Boot ROM	• Enabled • Disabled	Disables or enables booting from the network.
Onboard LAN *This BIOS setting is present only on Intel® Desktop Boards that include onboard LAN.*	• Enabled • Disabled	Enables or disables the onboard LAN.
Parallel Port	• Disabled • Enabled • 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.
Secondary SATA Controller *This BIOS setting is present only on Intel® Desktop Boards that include a secondary SATA controller.*	• Enabled • Disabled	Enables or disables the secondary SATA controller.
Serial Port A	• Disabled • Enabled • 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).*	• Enabled • Disabled	Disables or enables Trusted Platform Module (TPM)

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 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 Options may vary depending on board model.	Amount of system memory available for direct access by the 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 additional information, 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.
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	• Enabled • Disabled	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	• Enabled • Disabled	Displays add in Option ROM text
NX Technology	• Enabled • Disabled	Enables or disables "No Execute" memory protection. For more information refer to http://www.intel.com/business/bss/infrastructure/security/xdbit.htm
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 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 Password	No changeable options	Reports if there is a user password set.
XD Technology	• Enabled • Disabled	Enables or disables "No Execute" memory protection. For more information refer to http://www.intel.com/business/bss/infrastructure/security/xdbit.htm

Power Menu

BIOS Setting	Options	Description / Purpose
ACPI	No changeable options	Opens the sub-menu for ACPI (Advanced Configuration and Power Interface).
ACPI Suspend Mode (or ACPI Suspend State)	• S1 State • S3 State	Specifies the ACPI sleep state.

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).
EIST	• Enabled • Disabled	Speedstep technology: Advanced Power management which includes Frequency and voltage
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).
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.
Power Management	• Enabled • Disabled	Enables or disables the APM feature.
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 Mouse from S3	• Stay Off • Power-On	Determines how the system responds to a PS/2 mouse wake up event.

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. The operating system assigns a drive letter
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. The operating system assigns a drive letter

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. The operating system assigns a drive letter
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. The operating system assigns a drive letter
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 followed.
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.
Boot Device Priority	No changeable options	Opens the Boot Device Priority sub-menu where you may specify the boot sequence from the available types of boot devices.
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.
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
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.
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.*
USB Boot	• Enabled • Disabled	Disables or enables booting from USB boot devices.

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.