About This Release:

- **Date:** February 23, 2011
- **ME Firmware:** Ignition 6.0.30.1199 PV
- **SATA RAID Option ROM:** v10.1.0.1008
- **LAN Option ROM:** Rev 1.2
- **Intel(R) Boot Agent GE v1.3.65, PXE-2.1 build 089**

**IMPORTANT:** If your board's AA# is E64798-208 or later, you must use BIOS version 0319 or later. Earlier BIOS versions will not work.

**New Fixes/Features:**

- Added Support for new SPI Flash part (Winbond W25Q16BV).
- Fixed issue where Intel® Desktop Utilities displays no data when UEFI Boot is enabled.
- Fixed issue where BIOS still requires password when user password is not installed and user access level is full.
- Fixed issue where POST Function Hotkeys display on the bottom of the screen before flash process starts during Express BIOS Update and iFlash update.
- Fixed an issue of no “Clear User Password” option prompt when user access set to Limited Access.
- Updated RAID option ROM to version 10.1.0.1008.
- Fixed issue with SMBIOS CPU locator.
- Fixed Intel® Integrator Assistant map file issue.
- Fixed no beep issue when no graphic card is installed.
- Fixed Expansion Card text display issue.
- Fixed SMBIOS PEG slot status issue.
- Remove help string in real-time Hardware monitoring page.

**Known Errata:**

- BIOS cannot be flashed back to version 0312 or earlier if board has the Winbond chip, since BIOS before version 0319 doesn’t support this chip.

About This Release:

- **November 23, 2010**
- **ME Firmware:** Ignition 6.0.30.1199 PV
- **SATA RAID Option ROM:** v9.6.0.1014
- **LAN Option ROM:** Rev 1.2
- **Intel(R) Boot Agent GE v1.3.65, PXE-2.1 build 089**

**New Fixes/Features:**

*Other names and brands may be claimed as the property of others.*
- Fixed issue with the display of memory speed in Intel® Desktop Utilities.
- Correct SMBIOS memory location issue.
- Updated PXE UNDI and PXE Base code.
- Updated RAID option ROM to version 9.6.0.1014.
- Added SMBIOS support for G6950 processor.
- Improved BIOS update when Setup variable is changed.
- Corrected processor fan name on the Hardware Monitoring menu.
- Updated Setup strings.

**BIOS Version 0310 - WBIBX10J.86A.0310.2010.0728.2257**

**About This Release:**
- July 28, 2010
- ME Firmware: Ignition 6.0.30.1199 PV
- SATA RAID Option ROM: v8.9.0.1023
- LAN Option ROM : Rev 1.2
- Intel(R) Boot Agent GE v1.3.38, PXE-2.1 build 087

**New Fixes/Features:**
- Updated AHCI Option ROM.
- Fixed issue where BIOS hangs when using a PCI Express x1 RAID card.
- Fixed UEFI boot issue when mass storage device is connected to 3rd party PCIe SATA controller.
- Fixed long delay in POST when using certain large size drives.
- Improved BIOS pre-video boot time.
- Added BIOS OEM version check for F7 update.
- Fixed issue where PCIE Frequency setting caused Intel® Desktop Control Center failure.
- Fixed issue where CPU Max Non Turbo Ratio does not restore to default.
- Updated CPU Idle State, EIST (GV3), and Turbo Boost help texts to more clearly describe interdependencies between them.
- Fixed issue where system hangs after keyboard controller is reset.

**BIOS Version 0293 - WBIBX10J.86A.0293.2010.0419.1819**

**About This Release:**
- April 19, 2010
- ME Firmware: Ignition 6.0.30.1199 PV
- SATA RAID Option ROM: v8.9.0.1023
- LAN Option ROM : Rev 1.2
- Intel(R) Boot Agent GE v1.3.38, PXE-2.1 build 087

**New Fixes/Features:**
- Increased tRRD setup option range.
- Improved pre-video boot time.
- Fixed issue where operating system will fail to resume from hibernation when user entered BIOS Setup during POST.
- Updated SMBIOS to version 2.6.
- Fixed issue where SATA port number was not correct in AHCI mode.

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• Fixed issue where operating system does not show the processor string correctly.
• Fixed issue where memory overclocking using host clock will fail.
• Fixed issue where BIOS recovery will fail with certain processors.
• Fixed issue where certain USB DVD drives will not boot Windows* DVD from cold boot.
• Updated processor support.
• Set USB Legacy default to enable in UHCI mode.
• Fixed issue where CPU Max Non-Turbo Ratio will not be programmed correctly.
• Fixed issue where BIOS Setup has abnormal behavior.
• Improved BIOS boot time.
• Freed up 256MB of system memory when 3GB or more memory is installed.
• Increased tRFC setup option range.
• Added x12 memory ratio for certain processors.
• Added setup option to allow user to override the Front Panel Audio type to HD or Legacy.
• Fixed WOL issue from S5/S4.
• Added BIOS workaround for excessive USB interrupt activity.


About This Release:
• March 02, 2010
• ME Firmware: Ignition 6.0.30.1199 PV
• SATA RAID Option ROM: v8.9.0.1023
• LAN Option ROM : Rev 1.2
• Intel(R) Boot Agent GE v1.3.38, PXE-2.1 build 087

New Fixes/Features:
• Fixed issue where operating system does not display the processor string correctly.
• Fixed issue where S3 resume times were too long when using 16GB of memory.
• Improve S3 resume time to pass WHQL.
• Fixed issue where PCH DMI Receiver Overflow Uncorrectable Error causes error 0x9F in USBHUB.SYS.
• Updated flash process to skip the Intel ME region when the firmware version remains the same to reduce flashing time.
• Fixed issue where the SATA port number was not correct in AHCI mode.
• Fixed issue where the smmaccess driver did not use correct bus number when accessing the smram registers on S3 resume path.
• Fixed SMBIOS memory structures mismatch installed hardware.
• Added reading of the uncore ratio for certain processors.
• Fixed "Generic USB Hub" failures in WLK 1.4 Computer Single Display Object Test.
• Updated PCH: BIOS spec update 1.04 changes.
• Added HDMI verb table into product specific VerbTable.h file.
• Fixed issue where SMART error event was logging more than the expecting numbers.
• Added feature for “No Video Detected” beep code and switch.
  o “No Video Detected Error Beeps <Enable/Disable>
• Set to enable by default on boards that support on processor graphics.
• Set to Disable by default and the switch should be hidden on boards with PEG only graphics.
• Fixed issue where the PCH interrupt registers where not programmed correctly.
• Added BIOS setup option to enable or disable PCH Rate Matching Hub (RMH).
• Fixed issue where microcode did not get loaded during early POST.
• Fixed issue where the processor runs at the minimum frequency when EIST is disabled.
• Fixed issue where system hangs at POST code 0x5A after warm reset with certain SATA drives SATA port 4 or 5.
• Fixed 2.25 terabyte hard disk setup display issue.
• Fixed issue where Intel® Integrator Assistant (IIA) is unable to set the LAN option back to factory default after it has been customized.
• Fixed issue where S3 cycling fails due to a Receiver overflow on DMI interface.
• Fixed issue where the operating system fails to resume from hibernation when user enters BIOS Setup during POST.
• Fixed issue where PCH UHCI controllers do not work in Windows.

BIOS Version 0190 – WBIBX10J.86A.0190.2010.0112.0219

About This Release:
• January 12, 2010
• ME Firmware: Ignition 6.0.30.1199 PV
• SATA RAID Option ROM: v8.9.0.1023
• LAN Option ROM : Rev 1.2
• Intel(R) Boot Agent GE v1.3.38, PXE-2.1 build 087

New Fixes/Features:
• Fixed issue where ACPI NPSS table is not correct when non-Turbo processor is installed.
• Fixed issue where the system hangs at POST code 66h or 69h when a F2 or F12 keys are pressed repeatedly.
• Added Flash-descriptor update process to BIOS Recovery.
• Fixed issue where PCH PCI Bridge is decoding an invalid memory address.
• Added workaround for USB Full-Speed/Low-Speed Port Staggering.
• Fixed Setup Display string on SATA Drive page.
• Added S3 Cycling Enhancement.
• Updated Ignition FW to build 6.0.30.1199
• Fixed issue where wake-on-LAN (WOL) still works in S4 when WOL from S5 is set to disabled.
• Removed disabling of RTT on desktop. RTT is enabled for both mobile and desktop parts.
• Fixed issue where processor runs at the minimum frequency when EIST is disabled.
• Added hard disk SMART error support.
• Added check to only display logo that is less than or equal to supported resolution of 1024x768.
• Changed flex module description of "HanksvilleDCUndi" and "HanksvilleUndi" to "LAN PXE Boot ROM".

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• Added setup item to turn off operating system ACPI C2 state.
• Fixed issue where system hangs at POST code 0x5A after warm reset with certain SATA drive in SATA port 4 or 5.
• Improved the workaround to cater for the Gen1 card detection issue during system reset.
• Added BIOS setup item to enable/disable USB ports individually.
• Implemented USB Port(s) disable inside Legacy Boot callback routine.
• Fixed issue where AutoPlay does not work in Windows 7* from a single front panel USB port.
• Fixed MEManuf test failure due to incorrect BIOS UVSCC value being programmed.
• Fixed issue where two extra beeps are heard after 'No Video Present' error beeps.
• Grey out the Maximum Non-Turbo Ratio option under the Performance setup page if the processor does not support the Flexible Ratio Limit.
• Restricted INT 15 copy subfunction 05 from copying to/from certain protected memory regions.
• Resolved security issues concerning buffer overrun and NULL pointer access.
• Updated USB settings per PCH spec rev 002 version 1.4.

**BIOS Version WBIBX10J.86A.0165.2009.1110.1916**

**About This Release:**
- November 10, 2009
- ME Firmware: Ignition 6.0.0.1126 PV
- SATA RAID Option ROM: v8.9.0.1023
- LAN Option ROM : Rev 1.2
- Intel(R) Boot Agent GE v1.3.38, PXE-2.1 build 087

**New Fixes/Features:**
- Fixed issue where PCI resource gets allocated to PCIe memory map region.
- Fixed issue where BIOS setup shows event log with event date but without event type string.
- Added C state configuration lock bit.
- Added EIST disable requires PERF_CTRL to be written for all cores.
- Fixed setup options to be gray when setup item is gray.
- Added the new UQI for Host Clock Frequency to the hide list.
- Updated LAN Initialization.
- Implemented BIOS specification updates 1.03.
- Added capability to disable execution of software SMIs at runtime.
- Updated 82578DC/DM: Intel(R) Boot Agent V1.3.38.
- Updated firmware ID check before recovery starts.
- Fixed issue where SMBIOS Type 10 Video information is shown incorrectly.
- Added workaround for the non-compliance PCI Express device in Gen2 ports.
- Fixed Turbo Boost Technology display issue.
- PEI Capsule File authentication.

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- Changed the L2 cache size display to reflect the total L2 cache size.
- Fixed the USB Legacy Disable option non-functioning issue.
- Fixed issue where BIOS setup main page value for Memory Channel B Slot 0 is missing.

**BIOS Version 0144**

**About This Release:**
- September 28, 2009
- WBIBX10J.86A.0144.2009.0928.0010
- ME Firmware: Ignition 6.0.0.1126 PV
- SATA RAID Option ROM: v8.9.0.1023
- LAN Option ROM : Rev 1.2
- Intel(R) Boot Agent GE v1.3.36, PXE-2.1 build 087

**New Fixes/Features:**
- Implemented BIOS specification update 1.02.
- Added support in the flash update process to update GbE NV Image region.
- Updated non-vPro NV Image Rev 1.2.
- Fixed issue of no memory error beep.
- Fixed issue where the IGD would be enabled or show up in video menu when it shouldn’t.
- Changed SetupStrY to add 19 for better display.
- Fixed status display when using higher host clock frequencies.
- Updated the MeInfoCallback to check for Rcvy info if Code info is 0.
- Fixed system hang issue when installing a different processor.
- Added feature for memory timings and command rate override for certain processors.
- Updated USB Buffer Strength according to PCH EDS 1.56 spec update.

**BIOS Update 0142**

**About This Release:**
- September 09, 2009
- WBIBX10J.86A.0142.2009.0909.2101
- ME Firmware: Ignition 6.0.0.1126 PV
- SATA RAID Option ROM: v8.9.0.1023
- LAN Option ROM : Rev 1.2
- Intel(R) Boot Agent GE v1.3.36, PXE-2.1 build 087

**New Fixes/Features:**
- Fixed BIOS from showing non-supported Setup Option in Intel® Integrator Toolkit (ITK) map file.
- Fixed hang issue when USB Legacy is disabled.
- Changed "Advanced" BIOS screen to "Configuration" BIOS screen.
- Added Intel® Trusted Execution Technology support on PCH Platform.
- Fixed Performance Status display of Memory Multiplier when set to auto.

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• Fixed hang during memory initialization when the HPET option is set to disabled.
• Implemented VT-d feature.
• Fixed issue where USB keyboard and mouse do not respond.
• Fixed issue where PEG slot link speed and link width information is displayed incorrectly.
• Added new Setup Boot Display page and other Setup updates.
• Added new PCI/PCIe Add-In card page.
• Fixed issue where watchdog was firing with multiple card readers installed.
• Fixed DFx rules related to BIOS Setup.
• Fixed issue where system would hang at POST code 3Bh with 6GB or 7GB of system memory installed.
• Fixed issue where TCG INT1A BB00h function call was returning incorrect values.
• Updated processor socket name in SMBIOS.
• Fixed performance degradation when running video testing with certain graphics cards.
• Added the capability to show/hide the VT and VT-d setup option.
• Fixed issue where No Event Log when Thermal Trip occurs.
• Added sensor mapping support for P55 based platforms.
• Fixed issue where certain video cards do not work after install/reboot.
• Fixed issue where clearing CMOS caused thermal trip beeps at next boot.
• PCH EDS specification update 1.53 changes.
• PCH BIOS specification update 1.01.
• Fixed issue where iFlash hangs with all four memory slots populated.
• Fixed a problem where the C1E was disabled if setup question for C states was disabled.
• Fixed issue where Turbo Ratio, TDC, and TDP are not grayed out for non-XE processors.
• Fixed Processor Family in SMBIOS Type 4 structure for Intel® Core™ i7 processors.
• Added feature to block compressed .BMP file from integrated by ITK.
• Fixed issue where Memory speed for empty DIMM slot is shown in Intel® Desktop Utilities (IDU).
• Fixed Memory Speed display issue in Setup.
• Fixed issue where certain RAID card does not work.
• Fixed issue where certain RAID controller card option ROM behavior was unstable.
• Corrected the SpeedStep P0 state ratio to (Max Non-Turbo Ratio + 1) if Turbo Mode is enabled.
• Updated fan control settings to improve fan response and function with boxed thermal solution.
• Added Auto filled the on board LAN MAC address offset in the ATE file.
• Changed BIOS default time from 01/01/2006 to 01/01/2009.
• Fixed issue where French/German/Spanish Language Capsule still show in ITK Flex Module.
• Added color changing highlight for selected Numeric BIOS Setup Options.
• Updated Intel Boot Agent(PXE) version 1.3.36.

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BIOS Version 0122

About This Release:
- August 2, 2009
- ME Firmware: Ignition 6.0.0.1126 PV
- SATA RAID Option ROM: v8.9.0.1023
- LAN Option ROM : Rev 1.0
- Intel(R) Boot Agent GE v1.3.35, PXE-2.1 build 087

New Fixes/Features:
- Initial production BIOS release

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