![intel logo]

BIOS Update Release Notes

PRODUCTS: D945GNT, D945GCZ, D945GTP, D945GPM, D945GBO (Standard BIOS)

BIOS Version 3869

About This Release:
- May 19 2006
- NT94510J.86A.3869.2006.0519.1533
- VBIOS info: Build Number: 1295 PC 14.12
- SATA RAID info: Intel(R) RAID for SATA - v5.6.2.1002
- Intel® AMT info:
  - Intel® AMT Firmware: v1.4.3
  - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed yellow bang in Device Manager for the TPM 1.2 device.
- Fixed Onboard Graphics enabled when PCIe x16 video card present.

BIOS Version 3832

About This Release:
- May 02, 2006
- NT94510J.86A.3832.2006.0502.1050
- VBIOS info: Build Number: 1295 PC 14.12
- SATA RAID info: Intel(R) RAID for SATA - v5.6.2.1002
- Intel® AMT info:
  - Intel® AMT Firmware: v1.4.3
  - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added work-around for IDE-R 6 hour open session issue in a host software package.
- Fixed issue where the SOL terminal is not functional on the first reboot after AMT SOL is activated.
- Fixed out of sync power-cycle after AC loss.
- Added new translated strings.

*Other names and brands may be claimed as the property of others.

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BIOS Version 3814
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About This Release:
- April 14, 2006
- NT94510J.86A.3814.2006.0414.1513
- VBIOS info: Build Number: 1295 PC 14.12
- SATA RAID info: Intel(R) RAID for SATA - v5.6.2.1002
- Intel® AMT info:
    - Intel® AMT Firmware: v1.4.3
    - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added support for new SPI parts.

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BIOS Version 3813
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About This Release:
- April 11, 2006
- NT94510J.86A.3813.2006.0411.1332
- VBIOS info: Build Number: 1295
- SATA RAID info: Intel(R) RAID for SATA - v5.6.2.1002
- Intel® AMT info:
    - Intel® AMT Firmware: v1.4.3
    - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed multiple TPM issues.
- Fixed system unable to power-off instantly when power-off switch is pressed.
- Added code to force Intel® AMT firmware to load SMBIOS Type 130 structure via setting the appropriate bit in OEMFlags.
- Changed "Terminal Emulation" bit from VT52 (Basic Monochrome, 0x01) to PC-ANSI (0x04) in the SMBIOS Type 130 structure.
- Fixed a problem where Boot Order in Setup will revert back to default if the user "ESC" from other sub-menu.
- Fixed PCI slots not working on more than 2 PCI slot skus.
- Fixed HPET always showing in Device Manager.
- Fixed issue where certain SCSI host adapter was not functional.
- Updated Express BIOS Update (EBU) file properties copyright date to 2006.
- Enable USB Keyboard during only POST even if USB Legacy is disabled in Setup.
- Fixed certain ATM card reader causing POST delay when USB Legacy "Enabled."
- Fixed issue where legacy floppy drive was not seen in Windows if "Boot to Removable Devices" is set to "Disabled".
- Added a new feature for System Wake from S5.

- Fixed issue where system would hang with certain third-party IDE controllers installed in the system.

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BIOS Version 3659
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About This Release:
- March 15, 2006
- NT94510J.86A.3659.2006.0315.1110
- VBIOS info: Build Number: 1284
- SATA RAID info: Intel(R) RAID for SATA - v5.6.2.1002
- Intel® AMT info:
  - Intel® AMT Firmware: v1.3.10
  - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed riser card support on motherboard PCI slot 2.
- Fixed FDD test failure on certain floppy drives.
- Added feature to allow changing USB flash drive DOS emulation from BIOS SETUP.
- Fixed TPM help message messing up setup screen issue and change the help message content.
- Fixed the issue where Boot Menu will not display correctly after F9 Load Default under certain scenario.
- Fixed a problem where a PEG video device that contains bridges does not work as the primary video device.
- Fixed BIOS Setup arrows in date/time fields didn't move predictably.
- Fixed issue where system may hang in DOS accessing USB flash drives.

```
BIOS Version 3630
```

About This Release:
- March 08 2006
- NT94510J.86A.3630.2006.0308.1335
- VBIOS info: Build Number: 1284
- SATA RAID info: Intel(R) RAID for SATA - v5.6.2.1002
- Intel® AMT info:
  - Intel® AMT Firmware: v1.3.10
  - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added riser card support on motherboard PCI slot 2.
- Fixed display of cache for multi-core processors.
- Removed un-used Serial & Parallel port BIOS setup options.
- Fixed the issue, Local APIC status register indicates Invalid access.
- Fixed issue where certain host adapter card was not functional.

*Other names and brands may be claimed as the property of others.

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BIOS Version 3592
```

About This Release:
- February 22, 2006
- NT94510J.86A.3592.2006.0222.1655
- VBIOS info: Build Number: 1284
- SATA RAID info: Intel(R) RAID for SATA - v5.6.2.1002
- Intel® AMT info:
    - Intel® AMT Firmware: v1.3.10
    - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed issue where TPM did not get disabled after clearing TPM.
- Fixed failure where system would hang after flash update with certain processor.
- Modified AMT Type 130 SMBIOS structure to display correct '$AMT' signature field.
- Fixed issue where USB mice would not work with option ROMs and DOS applications that take direct hardware control of IRQ12 and the 8042 keyboard controller without using BIOS INT15 C2xx mouse functions.
- Fixed issue where USB 2.0 speed was not working under BIOS USB legacy support.
- Modified Setup to always hide the HPET setup question.
- Defined Intel® AMT Type 130 SMBIOS structure.
- Fixed no-remote-text-during-first SOL/IDE-R boot.
- Changed displayed SOL copyright to 2006.
- Corrected value for AMT(R) IANA number.

```
BIOS Version 3528
```

About This Release:
- February 08 2006
- NT94510J.86A.3528.2006.0208.1102
- VBIOS info: Build Number: 1256
- SATA RAID info: Intel(R) RAID for SATA - v5.1.2.1002
- Intel® AMT info:
    - Intel® AMT Firmware: v1.3.10
    - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed a problem where the password did not get cleared if the password length was set to zero.
- Fixed incorrect Front & Rear fan speed tach setting on BTX/uBTX form factors.
- Fixed issue where PS/2 mouse is not functional when PS/2 keyboard is not connected in Win2k.
- Fixed issue where some CompactFlash-to-SATA cards were not accessible in DOS.

*Other names and brands may be claimed as the property of others.

- Fixed Yellow Bang on PCI-PCI bridge on PCie cards.
- Added support for a new SLP area at F000:E7F0 for 16 bytes.
- Added support for duplicating SLP string to multiple locations with a single BIOS.
- Prevent 'up arrow' key from entering Setup.
- Updated Intel® AMT firmware binary to clear SSID Offset to 0xFFFF.
- Added Flex Language Module Support and added "Language" setup option in Main menu.

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BIOS Version 3309
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About This Release:
- January 09, 2005
- NT94510J.86A.3309.2006.0109.1312
- VBIOS info: Build Number: 1256
- SATA RAID info: Intel(R) RAID for SATA - v5.1.2.1002
- Intel® AMT info:
    - Intel® AMT Firmware: v1.3.10
    - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added workaround for issue where IDER CD-ROM device was intermittently not being detected due to a bug in IDER handling of IDE software resets.
- Fixed issue where Default Modules were not getting loaded upon Iflash "/md" switch.
- Added Onboard LAN Mac Address display in Bios Setup under Additional System Information menu.
- Added New Intel Splash screen Logo.
- Fixed issue where default value for Serial Port was not getting loaded after Flash update.
- Fixed "NULL" string in F10 boot menu.
- Fixed an issue where the system hangs while resuming from S3, when certain processors are present. This fix also addresses Core speed difference failure.
- Removed C1E option from setup.
- Fixed issue where serial ports would stop functioning after call to INT14 Function 04 (Extended COM Port Initialize).
- Fixed issue where Iflash, reboot method (/rb), would fail to update the BIOS ID.
- Changed ASF Table to signify that ASF PXE boot is supported when ASF is supported.
- Fixed a problem where the BIOS update would report an error trying to flash update the microcode.
- Fixed Intel® Viiv OSB logo was not displayed correctly according to the SATA IDE mode.

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BIOS Version 3239
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About This Release:
- December 05, 2005
- NT94510J.86A.3239.2005.1205.1900
- VBIOS info: Build Number: 1256
- SATA RAID info: Intel(R) RAID for SATA - v5.1.2.1002
- Intel® AMT info:
    - Intel® AMT Firmware: v1.3.10

*Other names and brands may be claimed as the property of others.

- AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added HPET support.
- Adding Serial Port enable/disable setup question in Standard BIOS.
- Modified feature to enable USB bootable devices to boot the system first.
- Fix for issue with Intel(R) Integrator Toolkit.
- Fixed Setup Browser would not refresh with F9 default Language.
- Fixed illegal pop-up message box display in setup.
- Modified USB Ports Enable/Disable Setup Option.

BIOS Version 3231

About This Release:
- November 28, 2005
- NT94510J.86A.3231.2005.1128.1408
- VBIOS info: Build Number: 1256
- SATA RAID info: Intel(R) RAID for SATA - v5.1.2.1002
- Intel® AMT info:
    - Intel® AMT Firmware: v1.3.10
    - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Modified Audio SSID for.
- Fixed security issue with Intel® AMT.
- Added feature to display BIOS Setup string "Intel(R) Integrator Toolkit has modified this BIOS." when appropriate.
- Fixed the problem where operating system could not get Wake up cause after resuming S4.
- Added feature to enable USB bootable devices to boot the system first.
- Allowed PCI and PCIe devices to wake from S4 when 'ACPI Suspend State' set to S1.

BIOS Version 3191

About This Release:
- November 12, 2005
- NT94510J.86A.3191.2005.1112.1343
- VBIOS info: Build Number: 1239
- SATA RAID info: Intel(R) RAID for SATA - v5.1.2.1002
- Intel® AMT info:
    - Intel® AMT Firmware: v1.1.40
    - AMTBX Firmware: v1.2.3
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

*Other names and brands may be claimed as the property of others.

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Modified support to dynamically set SATA default based on board sku.

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BIOS Version 3165
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About This Release:
- November 03, 2005
- NT94510J.86A.3165.2005.1103.1449
- VBIOS info: Build Number: 1239
- SATA RAID info: Intel(R) RAID for SATA - v5.1.2.1002
- AMT info:
    - AMT Firmware: v1.1.40
    - AMTBX Firmware: v1.2.1
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added feature to display BIOS Setup string "Intel(R) Integrator Toolkit has modified this BIOS." when appropriate.
- Added support for multiple EHCI controllers with USB Legacy.
- Modified support to dynamically set SATA default based on board sku.
- Modified BIOS password character length to 2 through 19.
- Added VT Enabled/Disable setup option.
- Fixed CPU microcode did not get updated for dual core CPU.

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BIOS Version 3127
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About This Release:
- October 26 2005
- NT94510J.86A.3127.2005.1026.2153
- VBIOS info: Build Number: 1239
- SATA RAID info: Intel(R) RAID for SATA - v5.1.2.1002
- AMT info:
    - AMT Firmware: v1.1.36
    - AMTBX Firmware: v1.2.1
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed issue where certain drives hang during certain DOS IDE reads or writes.
- Added SLP area at F000:E130 for 16 bytes.
- Fixed issue where AMT Virtual LS-120 was not bootable if other boot devices are present in the system.

*Other names and brands may be claimed as the property of others.

- Added remote PXE boot capability to Intel® AMT.
- Fixed system reset during S3 resume on TPM skus.
- Added USB Ports Enable/Disable Setup Option.

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BIOS Version 3021
```

About This Release:
- October 14, 2005
- NT94510J.86A.3021.2005.1014.1930
- VBIOS info: Build Number: 1239
- SATA RAID info: Intel(R) RAID for SATA - v5.1.1.1002
- AMT info:
    - AMT Firmware: v1.1.36
    - AMTBX Firmware: v1.2.1
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added additional support to dynamically set SATA default based on board sku in appropriate boot mode.
- Added Intel® Viiv™ badge and support.
- Fixed issue where certain SCSI cards would not function properly.
- Updated the Board Id table.
- Removed French language support.

```
BIOS Version 2706
```

About This Release:
- September 29, 2005
- NT94510J.86A.2706.2005.0929.1417
- VBIOS info: Build Number: 1239
- SATA RAID info: Intel(R) RAID for SATA - v5.1.1.1002
- AMT info:
    - AMT Firmware: v1.1.36
    - AMTBX Firmware: v1.2.1
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed a problem where the PCI slot 2 would not work if the system was in manufacturing mode.
- Fixed issue where AMT client would timeout when both IDER and SOL were active when accessing a Floppy-emulated El-Torito CD image.
- Fix a logic error for the AMT extend scan key delay algorithm that seen in previous implementation.
- Added support to dynamically set SATA default based on board sku.
- Hide ASF Support setup question on AMT supported skus.
- Fixed BIOS Version update failure during Iflash update.

*Other names and brands may be claimed as the property of others.

- Added Auxiliary Fan Speed display in Hardware Monitoring page of Setup.
- Allow BIOS to unprovision AMT without password.
- Hide ASF Support setup question on AMT supported skus.
- Fixed issue where system could not boot Windows* XP installation CD from a certain SATA CD-ROM.
- Fixed issue where certain USB thumb drives are not seen in BIOS SETUP.
- Added feature to fill in Socket Designation field within SMBIOS Type 4 structure.
- Fixed PXE intermittent fail to download Remote Boot Image (NBP).
- Modified SATA support for D945GTP sku.
- Added ability to flash update the Intel® AMT code.
- Fixed issue where terminal Escape key was sometimes not recognized using AMT Serial-over-LAN (SOL).
- Allow BIOS to unprovision AMT without password.
- Update Quick Resume Technology to Bios spec. rev0.95.
- Fixed low throuput on PCI bus.
- Fixed issue where Windows installation or boot hung with SCRU42X RAID card.
- Fixed error when installing Windows* XP over IDER.
- Added S3 support for TPM.
- Fixed ITK workspace issue and WinPE* flash (with ITK .BIO) issue.
- Fixed flash issue with BMP logo where badges would disappear.

BIOS Version 2487

About This Release:
- September 6, 2005
- NT94510J.86A.2487.2005.0906.1451
- VBIOS Build Number: 1239
- SATA RAID info: Intel(R) RAID for SATA - v5.1.1.1002
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added support for universal 16-bit TPM 1.2 driver binary.
- Updated Video BIOS to Build 1239.
- Fixed SMBIOS Type 16 Memory Error Correction reporting.
- Fixed Discard Changes pop-up message box display in setup.
- Fixed User Access Level question scope in Full Access mode.
- Fixed a problem where F2 enter setup key only worked after Option ROM scan.
- Improved ATAPI CD read performance for AMT IDER CD device read access.
- Added COM2 support for OEMD945GTPT1 and added LAD945GTPL2 board Id.

BIOS Version 2104

About This Release:
- August 25 2005
- NT94510J.86A.2104.2005.0825.1650
- VBIOS Build Number: 1235
- SATA RAID info: Intel(R) RAID for SATA - v5.1.1.1002
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

*Other names and brands may be claimed as the property of others.

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed flash update issue found when using no reboot method.
- Forced IGD as Primary Video in Manufacturing Mode on supported boards.

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BIOS Version 2027
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About This Release:
- August 18 2005
- NT94510J.86A.2027.2005.0818.1036
- VBIOS Build Number: 1235
- SATA RAID info: Intel(R) RAID for SATA - v5.1.1.1002
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Fixed PCIx issue found if a PCI to PCI Bridge was connected with a video card behind it.
- Fixed IGD yellow-bang issue involving the PCI card.
- Updated the ICH7 RAID option ROM to version Intel(R) RAID for SATA - v5.1.1.1002.
- Updated PXE support.
- Corrected IFlash update hang.
- Fixed specific DVD drive detection issue.
- Added support for displaying remote terminal color while using Intel® Active Management Technology Serial-Over-LAN (SOL).
- Fixed issue where certain application's video output would not display on the remote terminal while Intel® Active Management Technology Serial-Over-LAN (SOL) is active.
- Fixed issue where terminal arrow keys and terminal F1-F4 keys were not recognized by Intel® Active Management Technology Serial-Over-LAN (SOL).
- Updated chipset support.
- Updated CMOS battery failure detection.
- Corrected errors found when more than 2 gigs of memory is installed in a system.
- Fixed ECC detection and logging errors.
- Added support for PERR/SERR events detection and logging.
- Added date/time information for ECC events.
- Fixed Key Help alignment & format in setup.
- Updated to Intel® Active Management Technology 1.2.1 release with 16 bit legacy error code return values supported.
- Added dual Heceta6 support.
- Fixed reset hang and boot issues found with specific hardware configurations.
- Fixed long system delays while booting with Intel® Active Management Technology IDER enabled and SATA drives attached to the system.
- Fixed dual display of message pop-up box in Setup.

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BIOS Version 2006
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About This Release:
- August 10 2005
- NT94510J.86A.2006.2005.0810.1817
- VBIOS Build Number: 1235

*Other names and brands may be claimed as the property of others.

- SATA RAID info: Intel(R) RAID for SATA - v5.1.0.1022
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

Note: For boards that support Intel® AMT and currently have a BIOS version older than 1788, you must first flash to BIOS version 1788 and then flash from 1788 to the newer BIOS version, otherwise the flash update will fail.

New Fixes/Features:
- Added setup option for USB Legacy Enable/Disable.
- Fixed issue where some USB thumb drives are not detected on hard power-on.
- Fixed issue where user was unable to enter Intel SCSI RAID SETUP if another bootable device was in the system.
- Fixed issue where some operating system installs would hang when 4 SATA drives were attached to the system.
- Fixed issue where certain USB floppy disk drives were inaccessible in Microsoft* DOS after ejecting floppy media.
- Fixed issue where PCI SERR and NMI are disabled at system boot.
- Fixed issue where certain combinations of PS/2 and USB keyboards and mice would not function with USB legacy.
- Fixed SOL window of opportunity issues.
- Corrected flow to send Start ASF Watchdog Timer and OS Boot PET msg.
- Fixed ASF PET message issues & added Stop ASF WDT.
- Set SOL VGA Redirect OPROM code to clear screen before boot to OS.
- Added support for dynamic BIOS Setup changes based on Intel® Active Management Technology.
- Added support for USB mass device emulation in BIOS SETUP boot order.
- Added additional space for CPU microcode at main block.
- Added setup option for USB Legacy Enable/Disable.
- Updated PXE support.
- Enabled Intel® Quick Resume Technology by default.
- Updated the Board Id table.
- Fixed IFlash update hang.
- Fixed dual display of message pop-up box in Setup.
- Added ability to flash update the Intel® Active Management Technology code.
- Modified flash interface.

BIOS Version 1788

About This Release:
- July 28 2005
- NT94510J.86A.1788.2005.0728.1510
- VBIOS Build Number: 1235
- SATA RAID info: Intel(R) RAID for SATA - v5.1.0.1022
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Fixed key help & pop-up message strings to reflect current language in Setup.
- Fixed "Exit Discard Changes" functionality in Setup.
- Corrected functionality of the "USB ZIP Emulation Type" BIOS SETUP question in Manufacturing Mode.
- Enabled future Flashing of Intel® Active Management Technology code for boards that support the feature.
- Updated Video BIOS to Build 1235.
- Updated the ICH7 RAID option ROM to version Intel(R) RAID for SATA - v5.1.0.1022.

*Other names and brands may be claimed as the property of others.

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BIOS Version 1783
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About This Release:
- July 27 2005
- NT94510J.86A.1783.2005.0727.1533
- VBIOS Build Number: 1229
- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Fixed disproportionate .BIO file size increase that occurred when adding a custom splash screen.
- Fixed issue where 16-bit PCMCIA cards were not detected correctly in some operating systems.
- Move the USB ZIP question to BOOT (changed the question name to reflect this move).
- Fixed USB boot issue to match "Boot to USB" setup question.
- Fixed long delay in POST when certain zip drives are attached as a single master drive in the system.
- Fixed issue where some Keyboard-Video-Mouse switches would reset just before system boot.
- Fixed intermittent system hang or long delay just before boot to USB device.
- Fixed USB floppy boot issue.
- Fixed SMBIOS Type10 Onboard Video Device status reporting.
- Added workaround to fix LAN drop issue.
- Fixed Intel® Express Bios Update fail to reboot but shutdown system if FP Audio attached.
- Fixed priority issue in Advance Boot Mode when legacy floppy is installed without media.
- Updated to allow system to wake from S4 via PCI/PCIx devices when ACPI Suspend State set to S1.
- Added feature to Enable/Disable Maximum CPUID Value Limit.
- Modified flash interface.
- Added BTX form factor support for Intel® Desktop Control Center.
- Added dynamic support for COM2 based on board features.

```
BIOS Version 1616
```

About This Release:
- July 08 2005
- NT94510J.86A.1616.2005.0708.1742
- VBIOS Build Number: 1229
- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Fixed an audio issue that occurred after S3 resume.
- Added support for issuing ATA Security Freeze Lock to IDE devices on resume from S3.

```
BIOS Version 1590
```

About This Release:
- July 06 2005
- NT94510J.86A.1590.2005.0706.1530
- VBIOS Build Number: 1229

*Other names and brands may be claimed as the property of others.

- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Updated processor support.
- Fixed issue with Intel® Active Management Technology SOL and SATA boot.
- Fixed an issue with some types of DDR667 memory.
- Fixed a delay seen with some CD drives.
- Fixed bios so F9 key loads BIOS defaults in configuration mode.

BIOS Version 1493

About This Release:
- June 22 2005
- NT94510J.86A.1493.2005.0622.1649
- VBIOS Build Number: 1229
- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Updated processor support.
- Fixed 10/100 LAN drop issue.
- Fixed SOL display when booting to DOS.
- Changed menu text in the aggressive settings.
- Fixed specific CD ROM detection issues.
- Fixed POST hang with x8 PCI Express SCSI card.
- Fixed several second delay in POST while performing PS/2 port swapping.
- Changed Intel® Active Management Technology setup entry and messages.
- Updated to Intel® Active Management Technology 1.2 release.
- Fixed convert and restore flash process.
- Added S3 support for the Trusted Platform Module.
- Fixed non-graphics card in PEG slot issue.

BIOS Version 1348

About This Release:
- June 09 2005
- NT94510J.86A.1348.2005.0609.1737
- VBIOS Build Number: 1224
- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Resolved hang issues with a specific CPU.
- Fixed TPM enable/disable functionality.
- Fixed certain CD ROMs detection issues.
- Fixed an issue with a specific RAID card.
- All drives now receive the Security Freeze Lock command during POST.
- Set BIOS to use less system memory (2MB) for BIOS usage.
- Fixed boot delay issue when certain optical drives are set as stand alone masters.
- Prevents loss of Intel® Active Management Technology functionality after BIOS update.

```
BIOS Version 1241
```

About This Release:
- June 01 2005
- NT94510J.86A.1241.2005.0601.1508
- VBIOS Build Number: 1224
- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Added latest processor updates.
- Added Flex Logo & Optional Module support.
- Updated slow POST with CD-ROM fix.
- Fixed an issue of Microsoft* Windows XP using PIO drive transfer mode instead of DMA.

```
BIOS Version 1220
```

About This Release:
- May 27 2005
- NT94510J.86A.1220.2005.0527.1540
- VBIOS Build Number: 1224
- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Added latest processor updates.
- Fixed long delay in POST when some CD-ROMs are attached as an IDE master device.
- Fixed issue where Microsoft* Windows was unable to enable DMA on system SATA drives.

```
BIOS Version 1176
```

About This Release:
- May 24 2005
- NT94510J.86A.1176.2005.0524.1846
- VBIOS Build Number: 1224
- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Added latest processor updates.
- Fixed a problem where PEG video devices that contain bridges do not work as the primary video device.
- Fixed slow POST when certain CD-ROMs are attached to the system.
- Fixed issue with Type 17 SMBIOS information.
- Fixed issue with incorrect SMBIOS PCI/PCIx slot information.
- Added Event Log Prompt support.
- Added display of System in Manufacturing Mode.
- Added support for writing SMBIOS data securely via EFI variables.
- Fixed errors with some memory stress tests when USB keyboard is plugged in the system.
- Fixed a benchmark hang with some PCI Express video cards.

*Other names and brands may be claimed as the property of others.

- Fixed a problem where the setup option for XD Execute Disable bit did not work correctly.
- Added setup option for SW Single Processor Mode.
- Update MBI support according to spec rev1.3.
- Fixed a problem where the setup option for XD Execute Disable bit did not work correct.
- Fixed issue where system would reboot when calling TCG INT1A functions.
- Added Master Boot Record (MBR) measurement support for the Trusted Platform Module.

```
BIOS Version 1088
```

About This Release:
- May 19 2005
- NT94510J.86A.1088.2005.0519.1710
- VBIOS Build Number: 1224
- SATA RAID info: Intel(R) RAID for SATA - v5.0.0.1032
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Added latest processor updates.
- Updated board features table.

```
BIOS Version 1042
```

About This Release:
- May 13, 2005
- NT94510J.86A.1042.2005.0513.1523
- VBIOS Build Number: 1224
- SATA RAID info: Intel(R) RAID for SATA - v5.1.0.1013
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Fixed issue where fifth BIOS drive (84h) is not accessible via INT13h in certain system configurations.

```
BIOS Version 0980
```

About This Release:
- May 09, 2005
- NT94510J.86A.0980.2005.0509.1536
- VBIOS Build Number: 1224
- SATA RAID info: Intel(R) RAID for SATA - v5.1.0.1013
- Initializing Intel(R) Boot Agent FE v4.1.17
- Initializing Intel(R) Boot Agent GE v1.2.28

New Fixes/Features:
- Initial release.