intel.

DATE: May 25, 2003

TO: DPSD Business Unit

CC: iPG / DPSD BIOS Engineering

FROM: iPG / DPSD BIOS Engineering

SUBJECT: Havre/Winnipeg Standard Production BIOS 15, build 50

About This Release

- HV84510A.86A.0050.P15.0305252001
- PXE–2.0 [Intel Boot Agent Version 4.1.09] for ICH2 LAN Controller

Features/Errata Fixed in This Release

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P15-0050
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- Added work-around for COM2 issue, where COM2 not functioning properly in Windows (made COM2 a static device).

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B04-0049
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- Updated to latest Processor support.
- Updated to New Intel Boot Agent v 4.1.09
- Added setup question to Enable/Disable HT support
- Fixed an issue with the system hanging when a Geforce4 card and a Promise RAID controller is in the system and the OHCI data area is in option ROM space.
- New format of System Configuration screen
- Fixed the problem where the system could not get the video output when Appian 4-port Graphics card is installed
- Added support for extending option ROM space by 32K
- Machine Check work around for Hyper Threading
- SMM re-architecture and MP support
- Fixed possible problem when clearing event log where events may be lost after a reset.
- OPSD PARTIES implementation.
- Added generic OPSD PARTIES implementation.
- Added HPA protect enabled/disabled via GPNV flag
- Machine Check work around for Hyper Threading
- Fixed the problem where BIOS could not initialize the primary VGA device when more than 2 VGA devices are installed on PCI bus without AGP add-in VGA card, and the default Video is set to AGP
- Fixed some BMI(Heceta 6) runtime function problems
- Removed audio reset to resolve issue with popping
- Fixed issue where onboard IDE controller device PCI registers were getting programmed incorrectly during jumper recovery
- Fixed the problem where system monitor software cannot get any information from Heceta 6 when no Heceta 6 initial data exists in BIOS Flash area.
- Fixed HCT 11.0(WinXp Sp1) Unreported Memory and I/O port test failure

- Fixed issue where Windows .NET would hang during installation
- Added BIOS workaround for issue where the WHQL ACPI HCT would hang when ran with no IDE devices connected to the system
- Fixed issue where Game Port was being disabled when the Audio was disabled in Setup
- Added support for HT processors in S3 resume path
- Added Chinese language support.

P14-0045
- Updated to latest processor support.

P13-0043
- Added APM support to the BIOS per customer request.
- Fixed issue where there were APM errors with the resume timer.
- Fixed issue with keyboard and mouse not being enabled as wake events in APM suspend.

P12-0041
- Added chassis intrusion support.
- Fixed issue where system won't wake from Suspend-to-RAM via TCPIP ping.

P11-0040
- Added support to scan User Binary code before Video init such that if resource allocations are required they will be provided by the BIOS.
- Fixing an intermittent problem with POST hangs with certain processor speeds and memory configurations.
- Disabled functionality of the F8 and F12 POST hotkeys if a supervisor password has been installed and the user access level is not set to "full".

P10-0038
- Created an error message to be displayed when a 533 FSB processor is installed in a board that does not support it.
- Added support for 128k L2 cache Celeron processors.
- Added support for EBU 1.13.
- Changed several fields to display Celeron when a Celeron CPU is inserted.
- Changed splash screens over to Celeron and P4 logo.
- Fixed issue where PCI devices not functional when a bridge card installed in the system.

P09-0035
- Added BIOS workaround for Windows 98SE and Millennium issue where the default Microsoft PS/2 mouse driver does not allow the mouse to wake the system from Suspend-to-RAM (S3).
- Changed the INT 19 hook-function so option ROMS can now use it for booting.
- Support for Processors greater then 2.4 GHz was added.

P08-0031
- Checked in new strings translation
- Fixed the problem where the system doesn't boot from USB CD-ROM not attached to primary Host Controller.
- Speed up POST time.
- Added a SoftOff Power button option
- Fixed issue where certain USB Mass Storage devices were hanging the system in POST.

- Add "A" naming suffix to distinguish between processors.
- Added support to free up Option ROM space by disabling PXE.
- Added 48-bit LBA support.

P07-0029
- Added a workaround for 1.6 GHz processor boot hang.
- Added support for new processors.

P06-0024
- Removed memory SPD checksum verification due to speed concerns.
- Fixed issue where PCI devices not functional when a bridge card installed in the system.
- Fixed the cache line size for PCI bus masters
- Fixed an issue with invalid fault-tolerant config in manufacturing mode
- Fixed an issue where the PS/2 mouse could not wake the system from the S3 state with some mouse drivers and operating systems.
- Added support for OEM programmable AC'97 Modem SSVID and SSID.
- Disabled the setting of the PCI ISA_EN bit in bridges by default.
- Added a config mode setting for ISA Enable and PCI Latency Timers

P05-0022
- Fixed an issue where the PS2 mouse may have a yellow bang in Win98/Me device manager.
- Fixed the issue of Reset Config Data question in setup not being reset to "No" after resetting the config data.

P05-0020
- Added System Locked Pre-installation (SLP) string.
- Added support to skip boot to USB boot devices.
- Moved PCI clock disabling to be later in POST.
- Merged in changes from Rev 1.1 of the 845 Memory Reference Code
- Set the lowest sleep state capability reported to the OS for USB controllers to be S3.
- Added a prompt to the POST screen to boot from the network by pressing F12.
- Optimize bit map splash screen output for speed in VGA mode 12h.
- Added BMI (a.k.a. Heceta 6) support.
- Programmed SIO USB Hub Vendor ID to 0x8086 and Product ID to 0x1120.
- Removed the APM function call interface, since APM is not a feature in this BIOS.

P04-0018
- Fixed issue where system hangs at POST 30h intermittently.

P03-0017
- Fixed issue where system could not transition from S3 to S4 in Windows using the timed Power Options
- Fixed a problem with disabling the PCI-PCI bridge device for the PCI slots

P03-0016
- Fixed manufacturing issue where the system would attempt a network boot on the first power-on.
- Moved the disabling of PCI clocks to ensure a PCI 2.2 spec compliance.

P03-0015

- Fixed issue where two key presses were needed to restore video when waking in Windows ME.

P03-0014
- Fixed issue where system could not transition from S3 to S4 in Windows using the timed Power Options.
- Another fix of the IRQ 12 release when USB Legacy is enabled.
- Removed fictitious ACPI sleep button from Windows Device Manager.

P02-0013
- Added warning message if DIMM frequency field in SPD is wrong.

P02-0012
- Added warning message if Non-SPD memory is found.

P02-0011
- Updated Non-SPD support for 845MCH BIOS's. Many problems with non-SPD and corrupted-SPD should be fixed.
- Fixed the problem where Custom CMOS defaults cannot be copied correctly to OEM CMOS through OEM CMOS INT 15h function.
- Fixed a problem where the BIOS would intermittently hang if the system had 4 PCI HAVAC5 cards, and 1 AGP HAVAC2 card plugged in.
- Fixed issue where USB mouse would not function if hot-plugged in MS-DOS.
- Updated the IRQ 12 release so that it only is released if "USB Legacy" is disabled.
- Reduced, significantly, the chance the chance of the "System Bus Speed" being incorrectly reported.
- Fixed WFM 2.0 Remote Lockout support for locking out power-button shutdown.
- Changed how Thermal/On Demand Throttling ratios are set.

P01-0010
- CMOS setup locations have changed. Please enter BIOS setup and load setup defaults when upgrading BIOS.
- Added Non-SPD support to 845 System BIOS's.
- Fixed issue where ATAPI Removable Devices that support UDMA modes were not getting programmed for UDMA mode.
- Updated WFM 2.0 Remote Lockout support.
- Fixed issue with a TBU not being seen in Windows 2000 when set as a master and a HDD is set as a slave on the same channel.

P01-0009
- CMOS setup locations have changed. Please enter BIOS setup and load setup defaults when upgrading BIOS.
- Fixed having to press the keyboard to repaint the screen in Win2k & WinXp after resuming from S3 for attended wake events.
- Fixed power button not shutting down Win2k & WinXp.
- Fixed Win2k not resuming from S3.
- Fixed power button sometimes causing a reset during POST.
- Optimized AGP Timer settings according to Intel 82850/82860 Chipset BIOS Specification rev 0.77. Optimized AGP Timer settings according to Intel 845 Chipset BIOS Specification revision 1.0, Page 18, Table 4-2.
- Updated the display of the processor BIOS update information to account for the new naming convention.
- Removed the programming of the IO PME Device Enable register and the PME Wake Enable Register 1 upon POST.

- Removed the clearing of ICH2 Power Management Status registers upon resume from S3.
- Set S1 to the default sleep state for ACPI.
- Fixed issue where after loading custom defaults, the boot order would not always be restored correctly.
- Fixed issue where the system was always reporting 80-conductor IDE cable type (regardless of actual cable type) when certain ATAPI devices were connected as the slave device on an IDE channel.

B-0007
- Fixed issue where manufacturing default was incorrect when a CDROM was not installed in the system.
- Fixed issue with the release of IRQ 12 which would cause the PnP BIOS calls to cause an exception in protected mode.
- Fixed the problem where BIOS copied invalid Custom CMOS defaults to OEM CMOS defaults area.
- Added WFM 2.0 Remote Lockout support.
- Fixed issue where POST would sometimes hang after Soft Off.
- Fixed several IDECFG test trackers. These were caused by ATA66 and ATA100 not being properly configured in the BIOS.
- Fixed issue where pressing keys during Option ROM scan hangs the system.
- Dynamically updates number of PCI slots available for IRQ priority screen in Setup.

D-0005
- CMOS setup locations may have changed. Please enter BIOS setup and load setup defaults when upgrading BIOS.
- Fixed hang when USB legacy is disabled.
- Added AMI BBS 3.0 and USB boot functionality.
- Changed manufacturing mode defaults so that BIOS defaults will be loaded on the first boot after manufacturing mode is disabled.
- Force VGA mode 12h for all of BIOS.
- Added OEM CMOS defaults support.
- Changed POST screen reporting of ATA/66 and ATA/100 IDE devices to display "Ultra DMA Mode ATA/66" or "Ultra DMA Mode ATA/100" respectively.
- Added setting of bit1 SMBIOS BIOS Characteristics Extension Byte2 to indicate BIOS support for function key-initiated network service boot.
- Fixed BIOS setup display of memory type (PC133, etc).
- Fixed an issue where the Fault Tolerant Boot Block Test would fail and not be able to boot if ECC was enabled during the test.
- Implemented the release of IRQ 12 when the PS/2 mouse is not installed in the system.
- Corrected SMBIOS data from board silk-screen for Havre.
- Corrected ECC errors occurring when a double-sided DIMM was placed in the third DIMM socket.
- Added support to boot from network directly if F12 Key is pressed during POST.
- Added support for issuing the Security Freeze Lock (command code 0xF5) command on resume from S3 to IDE devices that support the Security feature set. This may help eliminate the possibility of installing password into the devices by any unauthorized entity.
- Fixed the problem where BIOS copied invalid Custom CMOS defaults to OEM CMOS defaults area.
- Fixed ECC Logging functionality for the Event Log.
- Fixed problem where some programs were detecting some types of Pentium 4's as Celerons.

- Added code to dynamically adjust the number of PCI slots in SMBIOS based on the motherboard that the BIOS is running on.

D-0004:
- Fixes a hot start issue seen on OQM station

B-0003
- Implemented IO APIC support with ACPI.
- Fixed yellow bang in Windows device manager for "System Board Extension for ACPI BIOS"
- Fixed IRQ routing to match the D845WN board for PCI slots 4 & 5.
- Fixed BIOS recovery for CD-ROM and LS-120 (ATAPI devices)
- Added MCH A3 stepping memory code.
- Added ACPI OEMID differentiator of HV and WN.

Known Errata with This Release