



Chief River / Maho Bay Platforms CRB BIOS Release Notes

Ivy Bridge/Sandy Bridge – Cougar Point/Panther Point

November 2012

Revision 0.98

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Revision History

| Revision Number | Description | Revision Date |
|-----------------|--|---------------|
| 0.29 | • Updated with Release for ClientBIOS 2012 v29 | Jan 31, 2011 |
| 0.31 | • Updated with Release for ClientBIOS 2012 v31 | Feb 14, 2011 |
| 0.38 | • Updated with Release for ClientBIOS 2012 v38 | Mar 29, 2011 |
| 0.44 | • Updated with Release for ClientBIOS 2012 v44 | May 09, 2011 |
| 0.47 | • Updated with Release for ClientBIOS 2012 v47 | Jun 06, 2011 |
| 0.50 | • Updated with Release for ClientBIOS 2012 v50_3 | Jun 30, 2011 |
| 0.52 | • Updated with Release for ClientBIOS 2012 v52 | Jul 17, 2011 |
| 0.54 | • Updated with Release for ClientBIOS 2012 v54 | Jul 31, 2011 |
| 0.60 | • Updated with Release for ClientBIOS 2012 v60_3 | Sep 15, 2011 |
| 0.64 | • Updated with Release for ClientBIOS 2012 v64 | Oct 09, 2011 |
| 0.65 | • Updated with Release for ClientBIOS 2012 v65 | Oct 16, 2011 |
| 0.68 | • Updated with Release for ClientBIOS 2012 v68.1 | Nov 06, 2011 |
| 0.70 | • Updated with Release for ClientBIOS 2012 v70.1 | Nov 24, 2011 |
| 0.72 | • Updated with Release for ClientBIOS 2012 v72 | Dec 02, 2011 |
| 0.73 | • Updated with Release for ClientBIOS 2012 v73.1 | Dec 14, 2011 |
| 0.78 | • Updated with Release for ClientBIOS 2012 v78 | Jan 21, 2012 |
| 0.82 | • Updated with Release for ClientBIOS 2012 v82.1 | Feb 19, 2012 |
| 0.83 | • Updated with Release for ClientBIOS 2012 v83 | Mar 04, 2012 |
| 0.87 | • Updated with Release for ClientBIOS 2012 v87 | Apr 01, 2012 |
| 0.91 | • Updated with Release for ClientBIOS 2012 v91.2 | Jun 13, 2012 |
| 0.92 | • Updated with Release for ClientBIOS 2012 v92 | Jul 01, 2012 |
| 0.94 | • Updated with Release for ClientBIOS 2012 v94.2 | Jul 30, 2012 |
| 0.95 | • Updated with Release for ClientBIOS 2012 v95.1 | Aug 22, 2012 |
| 0.96 | • Updated with Release for ClientBIOS 2012 v96 | Sep 09, 2012 |
| 0.97 | • Updated with Release for ClientBIOS 2012 v97 | Oct 23, 2012 |
| 0.98 | • Updated with Release for ClientBIOS 2012 v98 | Nov 25, 2012 |



1 *SPI Images*

1.1 SPI Images for Cougar Point platforms

This release doesn't include full SPI Image.

1.2 How to create full SPI Image for Cougar Point platforms

To create either 2x4M or 2x8M full SPI image of the CRB BIOS:

1. Download latest System BIOS
2. Search for the latest Intel® Management Engine Firmware kit.
3. Download and install the ME Firmware kit.
4. Follow instructions to build appropriate full image as described in the "Intel(R) ME FW Bring Up Guide" document (part of the ME Firmware kit)



2 ***Frequently Asked Questions***

2.1.1.1 ACPI C-State transitions are not happening with Windows XP OS

Windows XP requires C-states reported to be contiguous. As a result, we might not see C-state transitions if BIOS reported C-states are not contiguous. XP-SP3 (available for 32-bit only) includes this fix.

Hotfix is available for this issue: <http://support.microsoft.com/kb/941838>

2.1.1.2 On Mobile platforms PCIe cards not detected on PCH PCIe ports when they have more native physical lanes than the slot

Mobile platforms use Slot->PRSNT2->PCIECLKRQx->CLKOUT_PCIE->Slot, hence Slot is clocked. PCIe specified card need to route PRSNT1 to last PRSNT2 for detection. Interposer is not doing so (x1 PRSNT2 NC). Interposer needs rework to meet PCIe specification.



3 Supported Hot Keys

CTRL+ALT+SHIFT+<KEY> causes a Hot-Key Event to the SBIOS. The specific <KEY> to complete the sequence is defined in the following table.

3.1 ACPI Hot-keys

| | |
|------|---|
| F1 | IGFX Display Switch using Toggle List 1. |
| F2 | IGFX Display Switch using Toggle List 2. |
| F3 | IGFX Display Switch using Toggle List 3. |
| F4 | IGFX Display Switch using Toggle List 4. |
| F5 | Virtual Power Switch Event (Toggle between Virtual AC and Virtual Battery Mode) |
| F8 | IGFX Panel Fitting Hot-Key |
| F9 | IGFX LCD Brightness Level – Decrease 10% if percentage > = 10% |
| F10 | IGFX LCD Brightness Level – Increase 10% if percentage < = 90% |
| 1/! | 10% Virtual Battery |
| 2/@ | 20% Virtual Battery |
| 3/# | 30% Virtual Battery |
| 4/\$ | 40% Virtual Battery |
| 5/% | 50% Virtual Battery |
| 6/^ | 60% Virtual Battery |
| 7/& | 70% Virtual Battery |
| 8/* | 80% Virtual Battery |
| 9/(| 90% Virtual Battery |
| 0/) | 100% Virtual Battery |
| -/_ | Virtual Battery % = Virtual Battery – 2% |
| = /+ | Virtual Battery % = Virtual Battery + 2% |

Notes:

1. The Virtual Battery hot-key values are a single key with dual purposes.
2. IGFX hot-keys are only supported when IGFX is present and is the primary display device. If that is not the case, the hot-keys will be disabled.
3. The virtual battery hot-keys are only valid when a virtual battery is present. If any real battery is present at all, these hot-keys are disabled. Additionally, the user will only be allowed to decrease battery percentages when in virtual battery mode and will only allow the user to increase battery percentages when in virtual AC Mode. Also, please note that some operating systems only display battery percentage differences that are $\geq \pm 4\%$.
4. All of the above hot-keys work in ONLY ACPI aware operating systems.



4 BIOS – ClientBIOS 2012 v29

4.1 BIOS Changes in this release

- Initial BIOS

4.2 Resolved issues

4.3 Known Issues / Limitations



5 BIOS – ClientBIOS 2012 v31

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.5.0 |
| | PPM | 0.5.0 |
| | System Agent | 0.5.0 |
| | PCH | 0.5.0 |
| | PCH-ME | 0.5.0 |
| | DTS | 0.5.0 |
| | ACPI | 0.5.0 |
| | TXT | 0.5.0 |

5.1 BIOS Changes in this release

- Updated OROMs

5.2 Resolved issues

- Platform hangs on BIOS menu screen with USB Pendrive connected to xhci

5.3 Known Issues / Limitations



6 BIOS – ClientBIOS 2012 v38

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.5.1 |
| | PPM | 0.5.1 |
| | System Agent | 0.5.1 |
| | PCH | 0.5.1 |
| | PCH-ME | 0.5.1 |
| | DTS | 0.5.1 |
| | ACPI | 0.5.1 |
| | TXT | 0.5.1 |

6.1 BIOS Changes in this release

- Updated OROMs
- Updated Reference Code
- Updated MCUs

6.2 Resolved issues

- Dual output fast read feature support is needed for some SPI flash devices
- PM_BASE & ACPI_CNTL is initialized twice
- "CPU Flex Ratio Settings" Randomly Defaults to 0
- "CPU Flex Ratio Setting" Defaults to Incorrect Value
- The system hang when booting to internal Shell with USB key plugged
- Global Reset happens with entering BIOS Setup UI screen

6.3 Known Issues / Limitations

- Display goes blank on eDP panel with Backlight lit
- USB Port 1 and 2(Jumper J5A1) are not working in OS
- System displays wrong CPU frequency in OS



- System is not resuming from S4 using USB keyboard and mouse



7 BIOS – ClientBIOS 2012 v44

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.6.0 |
| | PPM | 0.6.0 |
| | System Agent | 0.6.0 |
| | PCH | 0.6.0 |
| | PCH-ME | 0.6.0 |
| | DTS | 0.6.0 |
| | ACPI | 0.6.0 |
| | TXT | 0.6.0 |

7.1 BIOS Changes in this release

- Updated OROMs
- Updated Reference Code
- Updated MCUs

7.2 Resolved issues

- System shows 0.00 GHz at BIOS menu, and can't detect CPU type
- Memory of address 0 will be destroyed while "GPIO Lockdown" is enabled in setup menu
- Platform shuts down due to therm trip when the temperature is overridden to 5 degrees below TJ_MAX
- BIOS Change all TDTAM AT Strings to Intel(r) Anti-Theft
- EFI tick rate changed to 1ms on non-legacy OSES
- Tacoma Falls2 board name is read as "Tacoma Falls" in BIOS menu
- USB Port 1 and 2(Jumper J5A1) are not working in OS
- Default _CRT value should be same as Tjmax reported by the processor
- ACPI _PSV Trip Set Lower Than Tcc Activation Offset
- DTS code must use actual Tjmax value from fuse while building Threshold table
- Update verb table for ALC5503 support



- USB device does not work if enable USB port and shutdown system by power button
- PS/2 Mouse does not work in OS after a cold/warm boot with Fast boot enabled
- PS/2 keyboard and mouse not working with fast and quiet boot enabled

7.3 Known Issues / Limitations



8 BIOS – ClientBIOS 2012 v47

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.6.0 |
| | PPM | 0.6.0 |
| | System Agent | 0.6.0 |
| | PCH | 0.6.0 |
| | PCH-ME | 0.6.0 |
| | DTS | 0.6.0 |
| | ACPI | 0.6.0 |
| | FFS | 0.6.0 |
| | TXT | 0.6.0 |

8.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

8.2 Resolved issues

- ICC: unnecessary error message pops up
- System stuck for 15 seconds when use F3 button to load defaults in BIOS setup screen after exiting from Built In EFI
- "Supported SSC Mode" in Intel ICC menu show incorrect data
- HDMI Azalia Enable/Disable function

8.3 Known Issues / Limitations

- No display seen on both screen upon changing to extended display mode in XP OS with SNB+PPT config.



9 BIOS – ClientBIOS 2012 v50

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.7.0 |
| | PPM | 0.7.0 |
| | System Agent | 0.7.0 |
| | PCH | 0.7.0 |
| | PCH-ME | 0.7.0 |
| | DTS | 0.7.0 |
| | ACPI | 0.7.0 |
| | FFS | 0.7.0 |
| | TXT | 0.7.0 |

9.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs
- BIOS binary size increased to 3MB

9.2 Resolved issues

- xHCI pre-boot driver enabled by default
- Update MBP records to include BIOS platform key and ROM BIST data
- PXE Boot from LAN fails
- Onboard LAN adapter has yellow bang in Device Manager
- System hang up after boot into to EFI Network device
- BIOS displays an option to enable or disable Legacy RAID OPRM

9.3 Known Issues / Limitations

- NONE



10 BIOS – ClientBIOS 2012 v52

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.7.0 |
| | PPM | 0.7.0 |
| | System Agent | 0.7.0 |
| | PCH | 0.7.0 |
| | PCH-ME | 0.7.0 |
| | DTS | 0.7.0 |
| | ACPI | 0.7.0 |
| | FFS | 0.7.0 |
| | TXT | 0.7.0 |

10.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

10.2 Resolved issues

- When a second USB keyboard is added and removed, the first one stops working

10.3 Known Issues / Limitations

- Win8 OS With CSM=Enabled Mode - System getting hangs on Welcome Screen while resuming from S4 or cold boot
- System sporadically goes into S5 state while running S4 Cycles
- SUT hangs in "0098" with USB3.0 device connected



11 BIOS – ClientBIOS 2012 v54

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.7.1 |
| | PPM | 0.7.1 |
| | System Agent | 0.7.1 |
| | PCH | 0.7.1 |
| | PCH-ME | 0.7.1 |
| | DTS | 0.7.1 |
| | ACPI | 0.7.1 |
| | FFS | 0.7.1 |
| | TXT | 0.7.1 |

11.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

11.2 Resolved issues

- No option to choose between Legacy RAID OROM and RAID UEFI Driver in BIOS menu
- USB 3.0 some devices do not enumerate after warm boot

11.3 Known Issues / Limitations

- NONE



12 BIOS – ClientBIOS 2012 v60

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.8.0 |
| | PPM | 0.8.0 |
| | System Agent | 0.8.0 |
| | PCH | 0.8.0 |
| | PCH-ME | 0.8.0 |
| | DTS | 0.8.0 |
| | ACPI | 0.8.0 |
| | FFS | 0.8.0 |
| | TXT | 0.8.0 |

12.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

12.2 Resolved issues

- XHCI stopped when short packet happened on second burst packet
- Current GT Frequency is not shown right in BIOS setup menu
- Igfx settings are not detected right if GT is not primary display
- Windows 7 checked build install fails during EFI install
- EC version through OS(wmi/registry) is wrong(0xff.0xff)
- Added a new setup option to force boot to EFI Shell

12.3 Known Issues / Limitations

- NONE



13 BIOS – ClientBIOS 2012 v64

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.8.0 |
| | PPM | 0.8.0 |
| | System Agent | 0.8.1 |
| | PCH | 0.8.1 |
| | PCH-ME | 0.8.0 |
| | DTS | 0.8.0 |
| | ACPI | 0.8.1 |
| | FFS | 0.8.0 |
| | TXT | 0.8.1 |

13.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

13.2 Resolved issues

- PCH: PCIE rootport-A always enabled in PPT
- Fail to launch SENTER with SNB CPU
- BIOS perform ICC profile selection based on wrong data from MBP
- Wrong size of BIOS ACM report in TxT RC
- Intel SpeedStep can't be disabled
- BIOS does not report the correct DIMM configuration in the memory page
- PCIE Preset Search bug fix

13.3 Known Issues / Limitations

- NONE



14 BIOS – ClientBIOS 2012 v65

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.8.0 |
| | PPM | 0.8.0 |
| | System Agent | 0.8.1 |
| | PCH | 0.8.1 |
| | PCH-ME | 0.8.0 |
| | DTS | 0.8.0 |
| | ACPI | 0.8.1 |
| | FFS | 0.8.0 |
| | TXT | 0.8.1 |

14.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

14.2 Resolved issues

- xHCI handoff for future OS changes
- Serial redirection doesn't work after hibernation
- xHCI controller cannot be woken by connect/disconnect of USB device after entering D3 state for 10s

14.3 Known Issues / Limitations

- NONE



15 BIOS – ClientBIOS 2012 v68

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.8.2 |
| | PPM | 0.8.2 |
| | System Agent | 0.8.2 |
| | PCH | 0.8.2 |
| | PCH-ME | 0.8.2 |
| | DTS | 0.8 |
| | ACPI | 0.8.1 |
| | FFS | 0.8.2 |
| | TXT | 0.8.1 |

15.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

15.2 Resolved issues

- PCIe BIOS update up/down config (updwncfg) bug fix enable
- BIOS stuck at post 4F when booting with GV3 disabled parts
- Fast Boot - Add exception support for TPM activated system
- Codec does not match with the Verb Table

15.3 Known Issues / Limitations

- NONE



16 BIOS – ClientBIOS 2012 v70

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.9.0 |
| | PPM | 0.9.0 |
| | System Agent | 0.9.0 |
| | PCH | 0.9.0 |
| | PCH-ME | 0.9.0 |
| | DTS | 0.9.0 |
| | ACPI | 0.9.0 |
| | FFS | 0.9.0 |
| | TXT | 0.9.0 |

16.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

16.2 Resolved issues

- XHCI caused POST hang when 64bit MMIO assigned
- System Freezes after resume from S3 when HDD Password Set
- USB 7 layer tree fails at USB port 0~7 under DOS
- System device manager have USB device yellow bang when Fast boot option enable.
- The hand-off mechanism does not support 64-bit MMIO addresses.
- XHCI Smart Auto Mode workaround using scratchpad bit ETR3 BDF 0/31/0 0xAC[16] to indicate routing info

16.3 Known Issues / Limitations

- NONE



17 BIOS – ClientBIOS 2012 v72

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 0.9.0 |
| | PPM | 0.9.0 |
| | System Agent | 0.9.0 |
| | PCH | 0.9.0 |
| | PCH-ME | 0.9.0 |
| | DTS | 0.9.0 |
| | ACPI | 0.9.0 |
| | FFS | 0.9.0 |
| | TXT | 0.9.0 |

17.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

17.2 Resolved issues

- BIOS prompts for HDD password after RST EFI Driver finishes enumerating
- Update GPIO27 code to clear only GPIO27_STS
- Corrected USB3.0(XHCI) PIC mode from LNKA:21 to LNKA:16

17.3 Known Issues / Limitations

- NONE



18 BIOS – ClientBIOS 2012 v73

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.0.0 |
| | PPM | 1.0.0 |
| | System Agent | 1.0.0 |
| | PCH | 1.0.0 |
| | PCH-ME | 1.0.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.0.0 |
| | FFS | 1.0.0 |
| | TXT | 1.0.0 |

18.1 BIOS Changes in this release

- Updated MCUs

18.2 Resolved issues

- PCIe root port 1 is disabled even when a PCIe card is attached

18.3 Known Issues / Limitations

- NONE



19 BIOS – ClientBIOS 2012 v78

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.1.0 |
| | PPM | 1.1.0 |
| | System Agent | 1.1.0 |
| | PCH | 1.1.0 |
| | PCH-ME | 1.1.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.1.0 |
| | RST (FFS) | 1.1.0 |
| | TXT | 1.0.0 |

19.1 BIOS Changes in this release

- Updated MCUs
- Updated OROMs

19.2 Resolved issues

- PBIOS miscalculates day of the week during January 2012
- Boot manager doesn't load option variable for Solaris installer

19.3 Known Issues / Limitations

- NONE



20 BIOS – ClientBIOS 2012 v82

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.2.0 |
| | PPM | 1.2.0 |
| | System Agent | 1.2.0 |
| | PCH | 1.2.0 |
| | PCH-ME | 1.2.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.2.0 |
| | RST (FFS) | 1.2.0 |
| | TXT | 1.0.0 |

20.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

20.2 Resolved issues

20.3 Known Issues / Limitations

- NONE



21 BIOS – ClientBIOS 2012 v83

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.2.0 |
| | PPM | 1.2.0 |
| | System Agent | 1.2.0 |
| | PCH | 1.2.0-1 |
| | PCH-ME | 1.2.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.2.0 |
| | RST (FFS) | 1.2.0 |
| | TXT | 1.0.0 |

21.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

21.2 Resolved issues

- Disabled C7r on IVB by default.
- Use the DeviceId for HM70 in PCHRC

21.3 Known Issues / Limitations

- NONE



22 BIOS – ClientBIOS 2012 v87

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.5.0 |
| | PPM | 1.5.0 |
| | System Agent | 1.5.0 |
| | PCH | 1.5.0 |
| | PCH-ME | 1.2.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.2.0 |
| | RST (FFS) | 1.5.0 |
| | TXT | 1.0.0 |

22.1 BIOS Changes in this release

- Updated OROMs

22.2 Resolved issues

- IGD Display Option is blank

22.3 Known Issues / Limitations

- NONE



23 BIOS – ClientBIOS 2012 v91

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.6.0 |
| | PPM | 1.6.0 |
| | System Agent | 1.6.0 |
| | PCH | 1.6.0 |
| | PCH-ME | 1.6.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.6.0 |
| | RST (FFS) | 1.6.0 |
| | TXT | 1.0.0 |

23.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

23.2 Resolved issues

- Platform date/time damaged when RAID card used

23.3 Known Issues / Limitations

- NONE



24 BIOS – ClientBIOS 2012 v92

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.6.0 |
| | PPM | 1.6.0 |
| | System Agent | 1.6.0 |
| | PCH | 1.6.0 |
| | PCH-ME | 1.6.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.6.0 |
| | RST (FFS) | 1.6.0 |
| | TXT | 1.0.0 |

24.1 BIOS Changes in this release

- Updated OROMs

24.2 Resolved issues

- NONE

24.3 Known Issues / Limitations

- NONE



25 BIOS – ClientBIOS 2012 v94

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.6.0 |
| | PPM | 1.6.0 |
| | System Agent | 1.6.0 |
| | PCH | 1.6.1 |
| | PCH-ME | 1.6.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.6.0 |
| | RST (FFS) | 1.6.0 |
| | TXT | 1.0.0 |

25.1 BIOS Changes in this release

- NONE

25.2 Resolved issues

- Added IvyBridge Low Power BIOS support

25.3 Known Issues / Limitations

- NONE



26 BIOS – ClientBIOS 2012 v95

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.7.0 |
| | PPM | 1.7.0 |
| | System Agent | 1.7.0 |
| | PCH | 1.7.0 |
| | PCH-ME | 1.7.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.7.0 |
| | RST (FFS) | 1.7.0 |
| | TXT | 1.0.0 |

26.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

26.2 Resolved issues

- Added support for Win 8 Virtual GPIO Button Solution
- System doesn't reset when Ctrl+Alt+Del is issued from setup in CSM off case

26.3 Known Issues / Limitations

- NONE



27 BIOS – ClientBIOS 2012 v96

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.7.0 |
| | PPM | 1.7.0 |
| | System Agent | 1.7.0 |
| | PCH | 1.7.0 |
| | PCH-ME | 1.7.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.7.0 |
| | RST (FFS) | 1.7.0 |
| | TXT | 1.0.0 |

27.1 BIOS Changes in this release

27.2 Resolved issues

- System Hang During S3 resume
- Only last line in the EFI Shell screen is refreshed if F7 menu or Del menu is used while booting

27.3 Known Issues / Limitations

- NONE



28 BIOS – ClientBIOS 2012 v97

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.7.0 |
| | PPM | 1.7.0 |
| | System Agent | 1.7.0 |
| | PCH | 1.7.1 |
| | PCH-ME | 1.7.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.7.0 |
| | RST (FFS) | 1.7.0 |
| | TXT | 1.0.0 |

28.1 BIOS Changes in this release

- Updated OROMs

28.2 Resolved issues

28.3 Known Issues / Limitations

- NONE



29 BIOS – ClientBIOS 2012 v98

| Component | Version | |
|----------------|----------------|---------|
| Reference Code | Reference Code | Version |
| | CPU Core | 1.8.0 |
| | PPM | 1.8.0 |
| | System Agent | 1.8.0 |
| | PCH | 1.8.0 |
| | PCH-ME | 1.8.0 |
| | DTS | 1.0.0 |
| | ACPI | 1.8.0 |
| | RST (FFS) | 1.8.0 |
| | TXT | 1.0.0 |

29.1 BIOS Changes in this release

- Updated OROMs
- Updated MCUs

29.2 Resolved issues

29.3 Known Issues / Limitations

- NONE