HuronRiver / SugarBay Platforms CRB BIOS Release Notes

Sandy Bridge – Cougar Point

February 2011

Revision 0.63_1

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Contents

Revision History

Revision Number	Description	Revision Date
0.04	• Updated with Release for SCPT004 & SIBX047	Jan 10, 2010
0.07	• Updated with Release for SCPT007 & SIBX050	Jan 21, 2010
0.11	• Updated with Release for SCPT011	Feb 18, 2010
0.12	• Updated with Release for SCPT012	Feb 26, 2010
0.14	• Updated with Release for SCPT014	Mar 11, 2010
0.18	• Updated with Release for SCPT018	April 6, 2010
0.19	• Updated with release for SCPT019	May 5, 2010
0.22	• Updated with release for SCPT022	May 19, 2010
0.25	• Updated with release for SCPT025	June 1, 2010
0.26	• Updated with release for SCPT026	June 4, 2010
0.27	• Updated with release for SCPT027	June 11, 2010
0.28	• Updated with release for SCPT028	June 17, 2010
0.31	• Updated with release for SCPT031	June 30, 2010
0.32	• Updated with release for SCPT032	July 9, 2010
0.33	• Updated with release for SCPT033	July 16, 2010
0.35	• Updated with release for SCPT035	July 30, 2010
0.36	• Updated with release for SCPT036	August 6, 2010
0.37	• Updated with release for SCPT037	August 13, 2010
0.38	• Updated with release for SCPT038	August 20, 2010
0.39	• Updated with release for SCPT039	August 27, 2010
0.41	• Updated with release for SCPT041	September 10, 2010
0.42	• Updated with release for SCPT042	September 17, 2010
0.43	• Updated with release for SCPT043	October 1, 2010
0.44	• Updated with release for SCPT044	October 1, 2010
0.45	• Updated with release for SCPT045	October 7, 2010
0.47	• Updated with release for SCPT047	October 17, 2010
0.48	• Updated with release for SCPT048	October 22, 2010
0.50	• Updated with release for SCPT050	October 29, 2010
0.51	• Updated with release for SCPT051	November 03, 2010

Revision Number	Description	Revision Date
0.52	• Updated with release for SCP052	November 19, 2010
0.55	• Updated with release for SCP055	December 10, 2010
0.57	• Updated with release for SCP057	December 15, 2010
0.60	• Updated with release for SCP060	January 12, 2011
0.62	• Updated with release for SCP062	January 28, 2011
0.63_1	• Updated with release for SCP063_1	February 14, 2011

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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. Go to https://platformsw.intel.com and login using your designated username/password
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.

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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 ≥ ±4%.
4. All of the above hot-keys work in ONLY ACPI aware operating systems.

4 BIOS – CPT-0.04

Component	Version
Memory Reference Code (MRC)	v0.5.0.0
Video Option ROM (VBIOS)	v1960
SNB B0/B1 Microcode Patch	m12206a1_00000007
MEBx	v7.0.0.0015
SATA RAID Option ROM	v10.0.0.1001

4.1 BIOS Changes in This Release

1. Initial BIOS release

4.2 Known Issues / Limitations

- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit not fix available yet for 64-bit. Please check FAQ section for more details
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

5   *BIOS – CPT-0.07*

Component	Version
Memory Reference Code (MRC)	v0.5.0.0
Video Option ROM (VBIOS)	V1975
SNB Microcode Patch	m12206a1_00000007
MEBx	v7.0.0.0018
SATA RAID Option ROM	v10.0.0.1001

5.1   BIOS Changes in This Release

1. A Ref Code related changes
   a. PAVP Lock removed from Security register
   b. Move SNB DID W/A from Platform code (NbSecInit.asm) to SA Ref code
   c. Clean-up multiple EFI_MSR_IA32_PLATFORM_ID definitions and MemoryInt.c.
   d. Move LegacyVideoRom module from SA Ref code directory to NB\Board
   e. Add memory scrubbing in MRC wrapper which follows TxT spec. Keep the current solution till integrates memory scrubbing function to BIOS ACM. Use EFI_D_ERROR instead of EFI_D_INFO
   f. Add DEBUG msg before Resets or EFI_DEADLOOP in SA RC (only one left un-explained)
   g. Add Function Scan in PciExpressDxe to apply ASPM to PEG End-Point multi-functions devices.
2. PCH Ref Code related changes
   a. HDD Password Support
   b. Add PchPolicyInit sample code to build EDK to make sure the modality and also customer can directly use it for setting.
   c. Set PCH Temperature Adjust to 0xDE87.
      Updated PCIE Power gating flow.
   d. Fixed incorrect USB AFE settings swapped between Dt and MB at 3570 and 357C.
   e. Add debug msg to SA PciExpress/Graphics Init, to help debugging Peg/Graphics Issues.
   f. Added SMBus static clock gating when SMBus is function disabled.
   g. CPT: Set PCIe root ports offset 324h[12] prior PCIe configuration

5.2   Known Issues / Limitations

- USB Ports beneath GbE on SixHill platform is not working after PMC soft-strap change allowing ICC to update clock registers.
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit not fix available yet for 64-bit. Please check FAQ section for more details
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

6 *BIOS – CPT-0.11*

Component	Version	
Video Option ROM (VBIOS)	V1975	
SATA RAID Option ROM	v10.0.0.1001	
Reference code version	System Agent Memory PPM TXT CougarPoint ACPI ME	0.5.0 0.5.0.30 0.5.0 0.5.0 0.5.1 0.5.1 0.6.0

6.1 BIOS changes in this release

- PCH Ref Code related changes
  - Cougar Point code update for EDS SU 0.7.3
  - Enable power management and clock gating.
  - Cougar Point code update for USB AFE setting change
  - Cougar Point source code update for GbE WA.
  - Pch code update to save UAFE settings for S3 resuming.
  - Added support for valid PCH LPC Device ID
  - Update SPI data in PCH reference code
  - Pch Cpt code update to add SLP_S3/S4 min assert width policy items
- AT7 / ME related changes
  - Cleaned-up TCG_SUPPORT token usage and unused codes.
- SA Ref Code related changes
  - Remove Turbo Power limit lock
  - SA Code update to latest Bios Spec change, - Enable section 6.8.1 additional PEG init steps and Update section 9.3
- When switch to ACPI mode enable in the OS, encounter lost interrupt particular on IRQ10/11. Need to update LNKx with IRQ 10/11 for usage.
- Build AmtStatusCode Object files using Rules.mak instead of directly invoking CL.exe
- UEFI21 Support - only platform related UEFI21 changes.
- Fix for UEFI2.1 support change issue in OverClocking (Setup strings not updated).
- Added fix for IDE recovery - Forced Sata mode to IDE, when Boot mode is in Recovery.
- EDK Glue lib update to support debug message in SMM mode
- Fixed Spin-up time too long in ODD
- Legacy floppy support added for Legacy daughter card SIO.

- Update code to make all USB port enabled by default when the USB per port control is enabled.

6.2   Known Issues / Limitations

- USB Ports beneath GbE on SixHill platform is not working after PMC soft-strap change allowing ICC to update clock registers.
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit not fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available on CPT platforms with SNB B2 or above
    - HyperThreading (HT) Disable
    - Number of Cores Disabling (Active Cores)
    - Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.
- Onboard PXE is not working with CPT A0 – w/a - Change the Gbe Device id to Hanksville using eeupdate tool.
- With RC6 Enable, S3/S4 does not work. For Sleep states to work, need to use the Gfx driver version 2084. For Sleep states to work with Gfx Driver version less than 2084, keep RC6 Disable.
- With RC6 Enable, C-states does not work. For C-state to work, need to use the Gfx driver version 2084. For C-state to work with Gfx driver version less than 2084, keep RC6 Disable.

7   BIOS – CPT-0.12

Component	Version	
SNB B2 Microcode Patch	m12206a2_00000026	
SATA RAID Option ROM	v10.0.0.1001	
KSC Version	v1.03 for CougarPoint	
Reference code version	System Agent	0.5.0
	Memory	0.5.0.30
	PPM	0.5.0
	TXT	0.5.0
	CougarPoint	0.5.1
	ACPI	0.5.1
	ME	0.6.0

7.1   BIOS Changes in this release

- SA Ref Code related changes
  - o Add IOAPIC and HPET report in DMAR table
  - o Enable Aggressive training.
- PCH Ref Code related changes
  - o Update "DxePlatformPchPolicy->Revision" to "DXE_PCH_PLATFORM_POLICY_PROTOCOL_REVISION_4". Move the code about PCIe ASPM should be disabled by default for CPT Ax stepping from SBDXEBoard.c to CPT RC.
- Added CpuPolicy PPI to specify Number of address bits supported by CPU to access physical memory.

7.2   Known Issues / Limitations

- USB Ports beneath GbE on SixHill platform is not working after PMC soft-strap change allowing ICC to update clock registers.
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit not fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available on CPT platforms with SNB B2 or above
  - o HyperThreading (HT) Disable

- o Number of Cores Disabling (Active Cores)
- o Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.
- Onboard PXE is not working with CPT A0 – w/a - Change the Gbe Device id to Hanksville using eeupdate tool.
- With RC6 Enable, S3/S4 does not work. For Sleep states to work, need to use the Gfx driver version 2084. For Sleep states to work with Gfx Driver version less than 2084, keep RC6 Disable.
- With RC6 Enable, C-states does not work. For C-state to work, need to use the Gfx driver version 2084. For C-state to work with Gfx driver version less than 2084, keep RC6 Disable.

8 BIOS – CPT-0.14

Component	Version	
Video Option ROM (VBIOS)	V2006	
SNB B2 Microcode Patch	m12206a2_00000026	
ME Firmware	CPT 7.0.0.1012v2	
MEBx	v7.0.0.0026	
KSC Version	v1.04	
Reference code version	System Agent	0.6.0
	Memory	0.6.0
	PPM	0.6.0
	TXT	0.7.0
	CougarPoint	0.6.1
	ACPI	0.6.0
	ME	0.7.0

8.1 BIOS Changes in this release

- SA Ref Code related changes
  - Update SA Policy Revision# to 2
- PCH Ref Code related changes
  - Disable LPM for SATA Port0 & Port1 for CPT A1
  - Clear SATA ABAR + 118h[26] and 198h[26] = 0b for A0 and A1 stepping
  - Updated power management setting, RCBA + 2314[18] = 1
  - Changed Subtractive decode flow per BIOS Spec 0.6 recommendation
  - Support only ASPM L1 for all Intel Ethernet LAN card
- AT7 / ME related changes
  - ME Reference Code changes
  - Fixed issue where system booted very slow when SECOVR jumper is shorted
- Disable the SCI on GPIO3 from _GPE event handler before powering on the ODD
- Remove unnecessary IO APIC information in ACPI.sdl and corrected IO APIC information in SB.sdl
- Remove BIOS Spec code in NVRAMSMM.c and change get information function from DXE to SMM.
- Updated DTS ref code to make it compatible with EDK

- Fixed INF files and Fixed EDK build fail.

8.2   Known Issues / Limitations

- USB Ports beneath GbE on SixHill platform is not working after PMC soft-strap change allowing ICC to update clock registers.
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available on CPT platforms with SNB B2 or above
    - o   HyperThreading (HT) Disable
    - o   Number of Cores Disabling (Active Cores)
    - o   Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.
- Onboard PXE is not working with CPT A0 – w/a - Change the Gbe Device id to Hanksville using eeupdate tool.
- With RC6 Enable, S3/S4 does not work. For Sleep states to work, need to use the Gfx driver version 2084. For Sleep states to work with Gfx Driver version less than 2084, keep RC6 Disable.
- With RC6 Enable, C-states does not work. For C-state to work, need to use the Gfx driver version 2084. For C-state to work with Gfx driver version less than 2084, keep RC6 Disable.

9 *BIOS – CPT-0.18*

Component	Version	
Video Option ROM (VBIOS)	V2014	
SNB B2 Microcode Patch	m12206a2_00000026	
ME Firmware	CPT 7.0.0.1012v2	
MEBx	v7.0.0.0026	
KSC Version	v1.04	
Reference code version	System Agent	0.6.1
	Memory	0.6.0.10
	PPM	0.6.0
	TXT	0.7.0
	CougarPoint	0.6.1
	ACPI	0.6.0
	ME	0.7.0
	DTS	0.6.0

9.1 BIOS Changes in this release

- SA Ref Code related changes
    - Memory Reference Code change (fix turnaround issue)
    - Change to ensure that the memory controller power management registers are not locked to allow Intel DPPM to control the performance and power of memory subsystem during run time
- PCH Ref Code related changes
    - Cougar Point Code updates for CPT BIOS Spec 0.6.0 and BSU 0.6.1
    - Added support for USB Wake from S4 state.
    - Resolved the PCIe rootports downgrade to Gen1 for Hotplug devices.
- AT7 / ME related changes
    - Waiting and sending messages were moved to happen after PCI enumeration.
- Enabling of PECI interface for CPU thermal info, CPU temp display in setup and PWM control of CPU fan and Remote 2 temp display, Front and Rear fans PWM control support.
- No EC support for SugarBay (desktop) platform

9.2   Known Issues / Limitations

- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available with SNB B2 or above
    - HyperThreading (HT) Disable
    - Number of Cores Disabling (Active Cores)
    - Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.
- Onboard PXE is not working with CPT A0 – w/a - Change the Gbe Device id to Hanksville using eeupdate tool.
- With RC6 Enable, S3/S4 does not work. For Sleep states to work, need to use the Gfx driver version 2084. For Sleep states to work with Gfx Driver version less than 2084, keep RC6 Disable.
- With RC6 Enable, C-states does not work. For C-state to work, need to use the Gfx driver version 2084. For C-state to work with Gfx driver version less than 2084, keep RC6 Disable.

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10   *BIOS – SCPT-0.19*

Component	Version	
SNB B2 Microcode Patch	m12206a2_00000026	
SATA RAID Option ROM	v10.0.0.1016	
KSC Version	v1.07	
Reference code version	System Agent	0.6.1
	Memory	0.6.0.10
	PPM	0.6.1
	TXT	0.7.0
	CougarPoint	0.6.1
	ACPI	0.6.0
	ME	0.7.0
	DTS	0.6.0

10.1   BIOS Changes in this release

- Enable Memory Scrambler with MRC 0.6.0.10
- Removed EC WDT library and used ICC WDT lib
- Added XTU 2.1 SMI table support.

10.2   Known Issues / Limitations

- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available with SNB B2 or above
  - o HyperThreading (HT) Disable
  - o Number of Cores Disabling (Active Cores)
  - o Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

- Onboard PXE is not working with CPT A0 – w/a - Change the Gbe Device id to Hanksville using eeupdate tool.

11   BIOS – SCPT-0.22

Component	Version	
Video Option ROM (VBIOS)	V2024	
SNB B0 Microcode Patch	m12206a2_00000026	
MEBx	v7.0.0.0033	
SATA RAID Option ROM	v10.0.0.1016	
KSC Version	v1.07	
Reference code version	System Agent	0.6.2
	Memory	0.6.2.00
	PPM	0.6.1
	TXT	0.6.1
	CougarPoint	0.6.2
	ACPI	0.6.2
	ME	0.7.1
	DPPM	0.6.0
	DTS	0.6.0

11.1   BIOS Changes in this release

- Simplify ability to determine ME feature enable/disable state by BIOS
- Added TXTRESET check back.

11.2   Known Issues / Limitations

- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available with SNB B2 or above
  o HyperThreading (HT) Disable
  o Number of Cores Disabling (Active Cores)
  o Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

12   BIOS – SCPT-0.25

Component	Version	
Reference code version	System Agent	0.6.2
	Memory	0.6.2.00
	PPM	0.6.1
	TXT	0.6.1
	CougarPoint	0.6.3
	ACPI	0.6.2
	ME	0.7.1
	DPPM	0.6.0
	DTS	0.6.0

12.1   BIOS Changes in this release

- USB_DATA_DIRECTION definition is reversed in the UEFI spec update. Updated the definition for EFI protocols only. For communicating with the device the old definition should be used.
- Updated BIOS with new Reference Code
- Updated latest MCU
- Updated latest MEBx

12.2   Resolved Issues

- Add: BIOS detection of INIT# Reset and issuing a warm reset
- Fix: MEBx: typing wrong passcode (as partial correct or madeup) gets wrong error message
- Fix: HDA lost interrupts when switching to SYM mode
- Fix: Last enabled flex ratio persists after disabling flex via BIOS knob
- Fix: BIOS does not set PERF_CTL(MSR 0x199) to same value on all threads
- Fix: Pressing Ctrl+P from DOS causes hang in DOS
- Fix: MEBx: user gets "connected to MSP" screen without MSP data when he regrets and chooses "n" for disconnecting at "connected to RPAS" screen
- Fix: MEBx: missing row on text at "connectivity error" screen making it ununderstandable
- Fix: BIOS recovery failed by USB Thumb.
- Fix: ME Framework Reference Code incorrectly calculating number of empty HECI slots
- Fix: MEBx: last row strings are swapped at the "legal terms" screen making instructions confusing
- Fix: Option missing in RPAT F3 Proxy Settings menu screen
- Fix: Incompliant cards do not get detected in Bifurcation mode PEG0

- Fix: MEBx: when "options" screen is reached from "connected to MSP" screen pressing Esc while network has disconnected leads wizard to load "connected to MSP" screen again although there is no connectivity
- Add: XTU: support for EIST
- Update: XTU: unsupported host clock frequency SMBUS clock device
- Fix: Correctable errors observed on PCH root ports with ASPM L0s enabled
- Fix: MEBx: when user has just one passcode required contract RPAT wizard shows "auto connection hub" screen instead of "connection hub" screen
- Add: RCVersion item to Pch Info protocol
- Update: Show VT-d support status in BIOS setup
- Fix: GetIccProfile HECI message is sent twice
- Fix: XTU: PCH WDT disables over clocking when fired
- Fix: Bootime increases up to 1Sec if PS2 KB is not connected
- Fix: ICC setting for spread should not accept numbers bigger than 8 bit
- Fix: XTU: Max non turbo processor multiplier has no setting values
- Fix: XTU: EIST fails SMI writes
- Fix: XTU: Short window package TDP enable/disable can't hold SMI writes
- Fix: XTU: Package TDP lock value cannot be set via SMI
- Fix: ZPODD drive powers up after power off
- Fix: Default value for Memory Voltage is not correct in BIOS setup for Desktop
- Fix: USB Thumbdrive not in boot order if AMT KVM is connected
- Add: PWM fan control support
- Add: Hardware Health Monitor support for Mobile
- Fix: BIOS recovery failed when recover with different version of BIOS
- Fix: CF9 reset won't work before PchInitDxe driver is launched
- Update: PCH Straps 9 [14] default setting
- Fix: IVT corruption happens when IGD is disabled and no other video devices are present
- Fix: EC PECI Turbo Mode Control Setup Options not in the right place in the setup screen
- Fix: SNB processor cannot switch to P1 frequency early in boot
- Fix: No Audio Device through HDMI
- Add: "Clock Repeater Disable" USB features
- Fix: XTU: Max non turbo ratio sets to incorrect defaults
- Fix: XTU: Package TDP lock setting incorrectly supports hardware-controlled mode
- Fix: Lewisville PHY is not working on PCIe port other than port 6 due to clock disable
- Remove: FW Init Complete bit check from BIOS
- Update: Subsystem ID and Subsystem Vendor ID for PCI Bus 0 Dev 4 Fn 0 - Processor Thermal Reporting Device

12.3   Known Issues / Limitations

- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_07.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available with SNB B2 or above
    - HyperThreading (HT) Disable
    - Number of Cores Disabling (Active Cores)
    - Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.

For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

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13   BIOS – SCPT-0.26

Component	Version	
Reference code version	System Agent	0.6.2
	Memory	0.6.2.00
	PPM	0.6.1
	TXT	0.6.1
	CougarPoint	0.6.3
	ACPI	0.6.2
	ME	0.7.1
	DPPM	0.6.0
	DTS	0.6.0

13.1   BIOS Changes in this release

13.2   Resolved issues

- Clone from Calpella - MEBx : Error messages are getting mixed between different invalid settings
- Fix Emerald Lake loosing keyboard and mouse
- Fix: MEBx hardcofileded strings must be added to XML
- Fix 7.0 MBL: Running S3/S4 Cycles results in POST hang
- Fix: Wake on LAN works even this option is disable in BIOS.
- Add reference code revision protocol in TxT RC
- Add: Check UID bit before read RTC time in MRC
- Fix: issue If user enter the MEBx and the ICC WDT is active then the system will G.reset automatically
- Fix: Periodic SMI problem
- Fix: lose of ps2 keyboard after s4 test
- Add: Support for SPI part Winbond 0xEF 4016h and 4018h
- Update: S0 to S1 GbE WA to reset the force smbus setting
- Fix: Current BIOS Thermal Throttling settings that caused ME to go into Low power state

13.3   Known Issues / Limitations

- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_07.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.

- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available with SNB B2 or above
    o HyperThreading (HT) Disable
    o Number of Cores Disabling (Active Cores)
    o Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.

For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

14   *BIOS – SCPT-0.27*

Component	Version	
Reference code version	System Agent	0.6.2
	Memory	0.6.2.00
	PPM	0.6.1
	TXT	0.6.1
	CougarPoint	0.6.4
	ACPI	0.6.2
	ME	0.7.1
	DPPM	0.7.1
	DTS	0.6.0

14.1   BIOS Changes in this release

14.2   Resolved issues

- MEBx: Error messages are getting mixed between different invalid settings
- System will hang at black screen when S3/S4 resuming with failure(60%).
- Added support in BIOS (for loading VBIOS) for different GT MB/DT SKU's
- Add Version Info Protocol for PPM RC
- Add Version Info Protocol for DPPM RC
- Update GT Power Management settings
- Add Version Info Protocol for DTS RC
- Update CPT RC code for CPT BSU 0.6.4
- Update SATA RAID ROM
- Disable ESD filters for CPT

14.3   Known Issues / Limitations

- Current BIOS includes GBE image NAHUM5_LEWISVILLE_VPRO_08.bin which has the below issues with PCH- A1
  - Boot system spend 2~5 sec run post code "0055",it make boot time result longer.
  - Garbled output from debug port
- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_08.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.

- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available with SNB B2 or above
  - HyperThreading (HT) Disable
  - Number of Cores Disabling (Active Cores)
  - Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

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15   BIOS – SCPT-0.28

Component	Version	
Reference code version	System Agent	0.6.2
	Memory	0.7.0
	PPM	0.6.1
	TXT	0.6.1
	CougarPoint	0.6.4
	ACPI	0.6.2
	ME	0.7.1
	DPPM	0.7.1
	DTS	0.6.0

15.1   BIOS Changes in this release

15.2   Resolved issues

- Updated MCUs
- System will hang up when S4 mode wake up post code show "dd45".
- AHCI Drivers Fail to Install with USB Floppy Drive on XP x32
- System goes to S5 state during S3 cycling
- System hang up S4 stress test post code show "2E00".
- MEBX: Manually updating KVM setting returns wrong namestring. Currently showing "Updating Intel(R) Level III Manageability Upgrade state..."
- MEBX - Wireless IPv6 settings missing from MEBX
- [XTU] BIOS needs to report short and extended package TDP limits in 1/8 of a Watt
- BIOS does not display turbo frequencies when turbo mode is enabled
- CPT::USBProvisioning::when performing halt configuration mebx executes the command but returns an error and "forgets" to update the mebx password.
- ICC: System reverts back to original overclocking frequency after doing "Apply setting once after reboot" with one system reset
- [XTU]SNB_CPT CRB reboots when viewing the BIOS>Advanced>Intel ICC submenu
- [XTU] HCF changes in XTU and/or BCT cause BIOS to crash on POST & reboot at default (CQ 5421)
- USB: Platform hangs at with CPU exception when booting with 12 or more USB Mice

15.3 Known Issues / Limitations

- Current BIOS includes GBE image NAHUM5_LEWISVILLE_VPRO_08.bin which has the below issues with PCH- A1
  - Boot system spend 2~5 sec run post code "0055",it make boot time result longer.
  - Garbled output from debug port
- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_08.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- Following features are only available with SNB B2 or above
  - HyperThreading (HT) Disable
  - Number of Cores Disabling (Active Cores)
  - Flex Ratio programming
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

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16 BIOS – SCPT-0.31

Component	Version	
Reference code version	System Agent	0.7.0
	Memory	0.7.0.10
	PPM	0.7.0
	TXT	0.7.0
	CougarPoint	0.7.0
	ACPI	0.7.0
	ME	0.8.0
	DPPM	0.7.0
	DTS	0.7.0

16.1 BIOS Changes in this release

16.2 Resolved issues

- Updated MCUs
- Pressing Ctrl+P from DOS causes hang in DOS
- Added support for additional SPI parts
- Removed additional Reset on first Boot after flash
- System boot will hang up after "Fast boot" option enable.

16.3 Known Issues / Limitations

- SNB Bx and prior stepping are no longer supported. Please use SNB C0 or above.
- SNB D0 MCU changes Device ID of the iGfx GT2 SKU. iGFX dirver needs to be updated.
- Current BIOS includes GBE image NAHUM5_LEWISVILLE_VPRO_08.bin which has the below issues with PCH- A1
  - Boot system spend 2~5 sec run post code "0055",it make boot time result longer.
  - Garbled output from debug port
- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_08.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.

- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

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17   BIOS – SCPT-0.32

Component	Version	
Reference code version	System Agent	0.7.0
	Memory	0.7.0.10
	PPM	0.7.0
	TXT	0.7.0
	CougarPoint	0.7.0
	ACPI	0.7.0
	ME	0.8.0
	DPPM	0.7.0
	DTS	0.7.0

17.1   BIOS Changes in this release

- Updated MCUs
- Added support for additional SPI parts

17.2   Resolved issues

- PWM FAN not working when CPU temp reaches Active Trip Point Lo/Hi Fan Speed for DTS Out of Spec option
- WHQL TPM Tests Failing on Los Lunas
- KVM: Machine doesn't show the BIOS setting screen after starting KVM in Sx and power up with Opt in enable or disable
- "Bootup NumLock state" option in BIOS > BOOT Menu does not work. NumLock is automatically turned off after booting past bios splash screen into DOS even though the state = on.
- System can't detect HDD after restart when "Fast Boot" option was enable.
- [XTU] Add support for Graphics Turbo Ratio Limit
- [XTU] Add support for Graphics Turbo Voltage

17.3   Known Issues / Limitations

- **SNB Bx and prior stepping are no longer supported.** Please use SNB C0 or above.
- SNB D0 MCU changes Device ID of the iGfx GT2 SKU. iGFX dirver needs to be updated.
- Current BIOS includes GBE image NAHUM5_LEWISVILLE_VPRO_08.bin which has the below issues with PCH- A1
  - Boot system spend 2~5 sec run post code "0055",it make boot time result longer.

- o Garbled output from debug port
- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_08.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.

For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

18   BIOS – SCPT-0.33

Component	Version	
MEBx	V7.0.0.0042	
Reference code version	System Agent	0.7.0
	Memory	0.7.0.00
	PPM	0.7.0
	TXT	0.7.0
	CougarPoint	0.7.0
	ACPI	0.7.0
	ME	0.8.0
	DPPM	0.7.0
	DTS	0.7.0

18.1   BIOS Changes in this release

- Added support for additional SPI parts

18.2   Resolved issues

- S3 power management state locks a password enabled drive
- V_3P3_LAN still high when WOL is disable in bios setup
- Del and F2 are not working after enabling FAST BOOT OR QUITE BOOT from BIOS.
- ASPM settings for SNB DMI are always set to L0sL1 independent of value set on BIOS menu

18.3   Known Issues / Limitations

- **SNB Bx and prior stepping are no longer supported.** Please use SNB C0 or above.
- SNB D0 MCU changes Device ID of the iGfx GT2 SKU. iGFX dirver needs to be updated.
- Current BIOS includes GBE image NAHUM5_LEWISVILLE_VPRO_08.bin which has the below issues with PCH- A1
    - o Boot system spend 2~5 sec run post code "0055",it make boot time result longer.
    - o Garbled output from debug port
- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_08.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.

- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.

For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

19   *BIOS – SCPT-0.35*

Component	Version	
MEBx	V7.0.0.0043	
Reference code version	System Agent	0.7.0
	Memory	0.8.0
	PPM	0.7.0
	TXT	0.8.0
	CougarPoint	0.7.1
	ACPI	0.7.0
	ME	0.8.0
	DPPM	0.7.0
	DTS	0.8.0

19.1   BIOS Changes in this release

- Updated MCUs
- Added support for additional SPI parts

19.2   Resolved issues

- Yellow bangs seen in Device Manager during Hot Dock of Saddle String with PCIe NIC cards
- After enabling fast boot system hangs at PC20
- System hangs in postcode 0079 during reboot cycling
- Moved the PCH PCIE Genx Option under regular menu in BIOS Setup
- MEBx ignores USB provisioning files
- Incorrect Graphics Frequency reported in BIOS Setup screen
- After performing remote powerup from S3 the screen remain black when using IGD

19.3   Known Issues / Limitations

- **SNB Bx and prior stepping are no longer supported.** Please use SNB C0 or above.
- SNB D0 MCU changes Device ID of the iGfx GT2 SKU. iGFX dirver needs to be updated.
- Current BIOS includes GBE image NAHUM5_LEWISVILLE_VPRO_08.bin which has the below issues with PCH- A1
  - Boot system spend 2~5 sec run post code "0055",it make boot time result longer.
  - Garbled output from debug port

- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_08.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.

For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

20   BIOS – SCPT-0.36

Component	Version	
MEBx	V7.0.0.0043	
Reference code version	System Agent	0.8.0
	Memory	0.8.0
	PPM	0.8.0
	TXT	0.8.0
	CougarPoint	0.8.0
	ACPI	0.8.0
	ME	0.8.0
	DPPM	0.7.0
	DTS	0.8.0

20.1   BIOS Changes in this release

- Updated MCUs

20.2   Resolved issues

20.3   Known Issues / Limitations

- **SNB Bx and prior stepping are no longer supported.** Please use SNB C0 or above.
- SNB D0 MCU changes Device ID of the iGfx GT2 SKU. iGFX dirver needs to be updated.
- Current BIOS includes GBE image NAHUM5_LEWISVILLE_VPRO_08.bin which has the below issues with PCH- A1
  - Boot system spend 2~5 sec run post code "0055",it make boot time result longer.
  - Garbled output from debug port
- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_08.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.

- <u>Rework #008</u> is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

21   *BIOS – SCPT-0.37*

Component	Version	
MEBx	V7.0.0.0044	
Reference code version	System Agent	0.8.0
	Memory	0.8.0
	PPM	0.8.0
	TXT	0.8.0
	CougarPoint	0.8.0
	ACPI	0.8.0
	ME	0.8.0
	DPPM	0.7.0
	DTS	0.8.0

21.1   BIOS Changes in this release

- Updated MCUs

21.2   Resolved issues

- SOL Boot to Windows XP/Vista/7 Fails in IDE mode
- SOL/IDER: FW doesn't redirect the "PXE boot Screen" when booting with SOL
- MEbX Level 3 manageability upgrade menu is not available, user is not able to configure AMT from MEbX
- Enable SATA test mode will cause the system stay at checkpoint 0xA3 for a long time.

21.3   Known Issues / Limitations

- **SNB Bx and prior stepping are no longer supported.** Please use SNB C0 or above.
- SNB D0 MCU changes Device ID of the iGfx GT2 SKU. iGFX driver needs to be updated.
- Current BIOS includes GBE image NAHUM5_LEWISVILLE_VPRO_08.bin which has the below issues with PCH- A1
  - Boot system spend 2~5 sec run post code "0055",it make boot time result longer.
  - Garbled output from debug port
- Current BIOS includes GbE image NAHUM5_LEWISVILLE_VPRO_08.bin which supports PHY A2 only. PHY A1 requirest GbE binary NAHUM5_LEWISVILLE_VPRO_05.bin which is included with the FW kit

- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- For CPT it is required to configure CLKOUT_FLEX1 as 14MHz clock.
- Rework #008 is required on mobile boards when using CPT BIOS V002 or higher to enable ICC.
- For CPT A0, to allow PCH PCIe hot-plug functioning, a card is required to be populated during BIOS boot to avoid function being disabled by PCIe workaround.

22 BIOS – SCPT-0.38

Component	Version	
MEBx	V7.0.0.0045	
Reference code version	System Agent	0.8.0
	Memory	0.8.0
	PPM	0.8.0
	TXT	0.8.0
	CougarPoint	0.8.0
	ACPI	0.8.0
	ME	0.8.0
	DPPM	0.7.0
	DTS	0.8.0

22.1 BIOS Changes in this release

22.2 Resolved issues

- Unexpected Watchdog Timer expiration upon transition from S4->S0
- Added support for Lid status for SDVO LVDS for Dual LVDS usage

22.3 Known Issues / Limitations

- **SNB Bx and prior stepping are no longer supported.** Please use SNB C0 or above.
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

23   *BIOS – SCPT-0.39*

Component	Version	
MEBx	V7.0.0.0046	
Reference code version	System Agent	0.8.0
	Memory	0.9.0
	PPM	0.8.0
	TXT	0.9.0
	CougarPoint	0.8.0
	ACPI	0.8.0
	ME	0.8.0
	DPPM	0.9.0
	DTS	0.8.0

23.1   BIOS Changes in this release

23.2   Resolved issues

- ME FW Image Re-Flash menu item remains enabled after reboot

23.3   Known Issues / Limitations

- **SNB Bx and prior stepping are no longer supported.** Please use SNB C0 or above.
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

24   *BIOS – SCPT-0.41*

Component	Version	
MEBx	V7.0.0.0046	
Reference code version	System Agent	0.9.0
	Memory	0.9.0
	PPM	0.8.0
	TXT	0.9.0
	CougarPoint	0.9.0
	ACPI	0.9.0
	ME	0.8.0
	DPPM	0.9.0
	DTS	0.8.0

24.1   BIOS Changes in this release

- Updated MCUs
- Updated Option ROMs

24.2   Resolved issues

- System can't resume from S4 mode with EFI OS then OS show error code "0xc000000d"
- C3/C6 state not seen on Bromolow platforms
- MRC execution time doubles when Ch0 is populated

24.3   Known Issues / Limitations

- **SNB Bx and prior stepping are no longer supported.** Please use SNB C0 or above.
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

25   *BIOS – SCPT-0.42*

Component	Version	
MEBx	V7.0.0.0047	
Reference code version	System Agent	0.9.0
	Memory	0.9.0
	PPM	0.8.0
	TXT	0.9.0
	CougarPoint	0.9.0
	ACPI	0.9.0
	ME	0.8.0
	DPPM	0.9.0
	DTS	0.8.0

25.1   BIOS Changes in this release

- Updated MCUs

25.2   Resolved issues

- CPU fan intermittently stuck on after boot to idle desktop
- BIOS is not affected by changing the verbosity boot option
- [XTU] iGFX Multiplier Voltage and Current Limit are displayed on systems using discrete graphics
- Booting from IDER causing machine to add an inaccessible floppy drive in addition to existing drives
- Disabling hibernation causes S3 kbd/mouse wake event not to work

25.3   Known Issues / Limitations

- *Error...!!! CPU and Chipset SKU mismatch (Pre-production/Production) will be displayed during BIOS POST for about 10 seconds, when invalid SKU combination i.e., Production/pre-production combination of CPU/PCH is used in platform.*

CPU Type	PCH Type	Status
Pre-Production	Pre-Production	Valid
Production	Production	Valid
Pre-Production	Production	Invalid – Message Displayed
Production	Pre-Production	Invalid – Message Displayed

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.

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- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

26   *BIOS – SCPT-0.43*

Component	Version	
MEBx	V7.0.0.0048	
Reference code version	System Agent	1.0.0
	Memory	1.0.0
	PPM	1.0.0
	TXT	0.9.0
	CougarPoint	1.0.1
	ACPI	1.0.0
	ME	0.8.0
	DPPM	0.9.0
	DTS	1.0.0

26.1   BIOS Changes in this release

- Updated MCUs

26.2   Resolved issues

- Add new platform policy to control TSLOCK[2]
- PCH RC doesn't issue two read back P1CMD register during S3 resume
- PCI Termination causing no boot issue

26.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU Type	PCH Type	Status
Pre-Production	Pre-Production	Valid
Production	Production	Valid
Pre-Production	Production	Invalid – Message Displayed
Production	Pre-Production	Invalid – Message Displayed

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

27   *BIOS – SCPT-0.44*

Component	Version	
MEBx	V7.0.0.0049	
Reference code version	System Agent	1.0.0
	Memory	1.0.0
	PPM	1.0.0
	TXT	0.9.0
	CougarPoint	1.0.1
	ACPI	1.0.0
	ME	0.8.0
	DPPM	0.9.0
	DTS	1.0.0

27.1   BIOS Changes in this release

27.2   Resolved issues

- RX Eye closed at CPT in KXMODE for the GBe Lane.
- Add new platform policy to control TSLOCK[2]
- PCH RC doesn't issue two read back P1CMD register during S3 resume
- PCI Termination causing no boot issue

27.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU Type	PCH Type	Status
Pre-Production	Pre-Production	Valid
Production	Production	Valid
Pre-Production	Production	Invalid – Message Displayed
Production	Pre-Production	Invalid – Message Displayed

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
- If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

28 BIOS – SCPT-0.45

Component	Version	
MEBx	V7.0.0.0050	
Reference code version	System Agent	1.0.0-1
	Memory	1.0.0-1
	PPM	1.0.0
	TXT	0.9.0
	CougarPoint	1.0.1
	ACPI	1.0.0
	ME	0.8.0
	DPPM	0.9.0
	DTS	1.0.0

28.1 BIOS Changes in this release

28.2 Resolved issues

- Wake On LAN from S3 and S4 works even when WOL is disabled in BIOS
- Hot Plug of keyboard doesn't work in DOS Mode

28.3 Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
  - o If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance
  - o Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.

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29   *BIOS – SCPT-0.47*

Component	Version	
MEBx	V7.0.0.0051	
Reference code version	System Agent	1.0.0-1
	Memory	1.0.0-1
	PPM	1.0.0
	TXT	0.9.0
	CougarPoint	1.0.1
	ACPI	1.0.0
	ME	0.9.0
	DPPM	0.9.0
	DTS	1.0.0

This BIOS has not completed full platform validation and may only be used to test and validate FW functionality. Any issues discovered using the BIOS included in this kit should be verified with BIOS 48 before being sent submitted to Intel for debug.

29.1   BIOS Changes in this release

- Updated MCUs
- Updated OROMs

29.2   Resolved issues

- Azallia GCAP Register Not Read Only after S3 resume
- PCIE x1 Cards cannot work on Cougar Point PCIE Fun 4 or 7
- PCIe Gen2 Hotplug enabling

29.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
    - o If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance
    - o Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.

30 *BIOS – SCPT-0.48*

Component	Version	
MEBx	V7.0.0.0051	
Reference code version	System Agent	1.0.0-1
	Memory	1.0.0-1
	PPM	1.0.0
	TXT	0.9.0
	CougarPoint	1.0.1
	ACPI	1.0.0
	ME	0.9.0
	DPPM	1.0.0
	DTS	1.0.0

30.1 BIOS Changes in this release

- Updated MCUs
- Updated OROMs

30.2 Resolved issues

- Recovery from USB key not working
- SBIOS function 5F40 returns invalid panel number(17) for "1366x768"

30.3 Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
  - o If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B

- If you are using SSD in port0 or port1, for better thermal performance
  - Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.
- Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.

31   *BIOS – SCPT-0.50*

Component	Version	
MEBx	V7.0.0.0052	
Reference code version	System Agent	1.0.0-1
	Memory	1.0.0.50
	PPM	1.0.0
	TXT	0.9.0
	CougarPoint	1.0.1
	ACPI	1.0.0
	ME	0.9.0
	DPPM	1.0.0
	DTS	1.0.0

31.1   **BIOS Changes in this release**

- Updated MCUs
- Updated OROMs

31.2   **Resolved issues**

31.3   **Known Issues / Limitations**

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
    - If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance
    - Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.

- Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.

32   *BIOS – SCPT-0.51*

Component	Version	
MEBx	V7.0.0.0053	
Reference code version	System Agent	1.0.0-1
	Memory	1.0.0.50
	PPM	1.0.0
	TXT	0.9.0
	CougarPoint	1.0.1
	ACPI	1.0.0
	ME	0.9.0
	DPPM	1.0.0
	DTS	1.0.0

32.1   BIOS Changes in this release

- Updated OROMs

32.2   Resolved issues

- BIOS is not disabling SCI on the Gbe over PCIe slot.
- MBL- When connected to AC only, power icon shows that battery is charging

32.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
    - If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance

- o Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.
- Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.

33   *BIOS – SCPT-0.52*

Component	Version	
MEBx	V7.0.0.0053	
Reference code version	System Agent	1.1.0
	Memory	1.1.0
	PPM	1.1.0
	TXT	1.0.0
	CougarPoint	1.1.0
	ACPI	1.0.0
	ME	1.0.0
	DPPM	1.0.0
	DTS	1.1.0

33.1   BIOS Changes in this release

- Updated OROMs
- Updated MCUs

33.2   Resolved issues

33.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
  - If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance
  - Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.

- Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.

34   BIOS – SCPT-0.55

Component	Version	
MEBx	V7.0.0.0053	
Reference code version	System Agent	1.1.0
	Memory	1.1.0
	PPM	1.1.0
	TXT	1.0.0
	CougarPoint	1.1.1
	ACPI	1.0.0
	ME	1.0.0
	DPPM	1.0.0
	DTS	1.1.0

34.1   BIOS Changes in this release

34.2   Resolved issues

- System Fails to Reset upon initial BIOS changes
- Assert happen when Fast boot is enabled and eDP Port-A is selected
- System shows yellow bang when TPM option is disabled
- GLE (GPIO Lockdown Enable) test fails with Brand verification Tool tests
- System does not boot to DOS when Legacy USB support is disabled in BIOS.

34.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
  - If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance

- o Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.
- Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.

35   *BIOS – SCPT-0.57*

Component	Version	
MEBx	V7.0.0.0053	
Reference code version	System Agent	1.1.0
	Memory	1.1.0
	PPM	1.1.0
	TXT	1.0.0
	CougarPoint	1.1.1
	ACPI	1.0.0
	ME	1.0.0
	DPPM	1.0.0
	DTS	1.1.0

35.1   BIOS Changes in this release

- Updated OROMs
- Updated MCUs

35.2   Resolved issues

- System hangs when CMP is switched from disabled to enabled

35.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
  - o If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance

- o Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.
- Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.

36   BIOS – SCPT-0.60

Component	Version	
MEBx	V7.0.0.0053	
Reference code version	System Agent	1.1.1
	Memory	1.1.1
	PPM	1.1.0
	TXT	1.0.0
	CougarPoint	1.1.2
	ACPI	1.0.0
	ME	1.0.0
	DPPM	1.0.1
	DTS	1.1.0

36.1   BIOS Changes in this release

- Updated OROMs
- Updated MCUs

36.2   Resolved issues

- SNB PEG ASPM is always enabled unconditionally at the beginning of the RC
- CF9h global reset does not work
- Windows 7 checked build install fails during EFI install
- Greater than 15 Second Delay when Navigating to the "Intel ICC" Menu

36.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.

- o If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance
  - o Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.
- Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.

37   BIOS – SCPT-0.62

Component	Version	
MEBx	V7.0.0.0053	
Reference code version	System Agent	1.1.1
	Memory	1.1.1
	PPM	1.1.0
	TXT	1.0.0
	CougarPoint	1.1.2
	ACPI	1.0.0
	ME	1.0.0
	DPPM	1.0.1
	DTS	1.1.0

37.1   BIOS Changes in this release

- Updated OROMs
- Updated MCUs

37.2   Resolved issues

- Unable to save Hard drive BBS priorities settings in BIOS
- Can't see the USB HDD BOX boot device when system cold boot

37.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
    - o If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance

- o Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.
- Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.

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38   BIOS – SCPT-0.63_1

Component	Version	
MEBx	V7.0.0.0054	
Reference code version	System Agent	1.1.1
	Memory	1.1.1
	PPM	1.1.1
	TXT	1.0.0
	CougarPoint	1.1.4
	ACPI	1.0.0
	ME	1.0.0
	DPPM	1.0.1
	DTS	1.1.0

38.1   BIOS Changes in this release

- Updated OROMs

38.2   Resolved issues

- Certain Celeron CPU's C3 state is not defined in PPM reference code resulting in only C1 being reported to the OS
- Incorrect slot report and memory type report – Slot and memory type has to be detected based on SKU
- System gets stuck for 15 seconds when F3 is pressed in Bios setting screen after exiting from Built In EFI
- System will not schedule S3 wakeup on specific datetime
- Yellow bang seen for PS/2 compatible mouse when hidden devices are selected in device manager
- Wake on LAN (disable ==> enable ==> disable) does not work
- HDMI monitor did not get any signal when plug in into HDMI port, no display.

38.3   Known Issues / Limitations

- Production/pre-production combination of CPU/PCH is used in platform.

CPU	PCH	TXT – AMC – Prod/Pre-Prod	ME FW – Prod/Pre-Prod
Pre-Production	Pre-Production	ACM Debug Patch	ME Pre-Prod SKU
Production	Production	ACM Prod Patch	ME Prod SKU
Pre-Production	Production	No TXT	ME Prod SKU
Production	Pre-Production	No TXT	ME Pre-Prod SKU

- **Only supports SNB C0 and above.**
- ACPI C-State transitions not happening with Windows XP OS – Need a XP Hot fix for 32-bit, no fix available yet for 64-bit.
- Default SATA Mode is set to AHCI.
    - o If you have your operating systems installed in IDE mode then you will see blue screen hang at checkpoint 0x7B
- If you are using SSD in port0 or port1, for better thermal performance
    - o Please go to setup menu Advanced -> PCH-IO Configuration -> SATA Device Type to change the setting to Solid State Drive.
- Do not set "DMI VCM control" to "Disabled" when ME is Enabled, System doesn't boot if you do so… and this is expected behavior.

Some older OSes may hang when multiple keys are pressed because they decode the keyboard scan codes incorrectly at certain stages of their boot process. Please contact your OS vendor for possible fixes. There is no planned fix available for the CRB.