**SPG BIOS ENGINEERING**

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BIOS Update Release Notes

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0067.2021.0528.1339 Production BIOS

**About This Release:**

* Date: May 28, 2021
* ROM Image Checksum: 0x44E6, 0xA37F (NOBG)
* **ME Firmware: 11.8.86.3909**
* EC Firmware: 0E.0B.00 (11.00)
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

**M2A906E9\_000000EA.pdb**

**New Fixes/Features:**

* Based on HN0066
* **Updated: ME FW version to 11.8.86.3909**
* EIP572366 [SPG-HN][Pega]Fixed: 22011533606 Seagate FireCuda 520 SSD boot issues with HN0063.
* EIP605733 [Intel-SPG][PEGA][HN] Updated OFBD module SMI handler vulnerabilities.
* EIP611164 [Intel-SPG][PEGA][HN] Added protection code for unauthorized write at controllable address in SMRAM.
* EIP613600 [Intel-SPG][PEGA][HN] Added: ACPI improvement for "PTK1456 Memory corruption during S3 resume".
* **EIP613609 [Intel-SPG][PEGA][HN] Updated: CPU Microcode for IPU 2021.1:**
* **M2A906E9\_000000EA.pdb**
* EIP614689 [Intel-SPG][PEGA][HN][PTK1484] Fixed: Able to achieve arbitrary write in SMRAM save state region.

**Known Errata:**

* **Blocked BIOS F7 Flash/EBU downgrade to HN0066 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

**HNKBLi70.86A.0066.2021.0310.1823 Production BIOS**

**About This Release:**

* Date: Mar 10, 2021
* ROM Image Checksum: 0xB46E, 0x1307 (NOBG)
* ME Firmware: 11.8.83.3874
* EC Firmware: 0E.0B.00 (11.00)
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000DE.pdb

**New Fixes/Features:**

* Based on HN0064
* Update: ME FW version to 11.8.83.3874.
* Update: Updated NTFS\_06 for "Heap corruption and denial of service in NTFS DXE driver in process of parsing NTFS file system partition".
* Updated: EC FW to 0E.0B.00 (11.00)
* Fixed: Customers reporting that Hades LEDs (front and skull) no longer work in S0 after updating to BIOS 0064.

**Known Errata:**

* **Blocked BIOS F7 Flash/EBU downgrade to HN0065 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

**HNKBLi70.86A.0065.2021.0113.1340 Production BIOS**

**About This Release:**

* Date: Jan 13, 2021
* ROM Image Checksum: 0x3BBA, 0x9A53 (NOBG)
* ME Firmware: 11.8.82.3838
* EC Firmware: 0E.0A.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000DE.pdb

**New Fixes/Features:**

* Based on HN0064
* Update ME FW version to 11.8.82.3838

**Known Errata:**

* **Blocked BIOS F7 Flash/EBU downgrade to HN0064 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

**HNKBLi70.86A.0064.2020.1028.1438 Production BIOS**

**About This Release:**

* Date: Oct 28, 2020
* ROM Image Checksum: 0x6D44, 0xCBDD (NOBG)
* ME Firmware: 11.8.80.3746
* EC Firmware: 0E.0A.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM:
  + - i219: 7.5.11
    - i211: 0.0.17
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000DE.pdb

**New Fixes/Features:**

* Based on HN0063
* Updated: ME firmware to 11.8.80.3746, Microcode firmware to 0xDE.
* Fixed: “Front USB 3.0 port could not be used”.
* Fixed: “Previously programmed NVMe M.2 SSD Admin password shows as "NOT INSTALLED" in Visual BIOS”.
* Fixed: “Analog audio output sample rate support”.
* Fixed: “SATA M.2 SSD type not displayed in SATA section under Visual BIOS DEVICE”.
* Fixed: “Hades Canyon USB port power issue”.
* Fixed issue where “Arbitrary code execution at PEI phase (WakeUpType)”.
* Fixed issue where “SMRAM overwritten with arbitrary data (microcodeUpdate).

**Known Errata:**

* **Blocked BIOS F7 Flash/EBU downgrade to HN0062 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

**HNKBLi70.86A.0063.2020.0827.1309 Production BIOS**

**About This Release:**

* Date: Aug 27, 2020
* ROM Image Checksum: 0x6AE8, 0x4CFD (NOBG)
* ME Firmware: 11.8.79.3722
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000D6.mcb

**New Fixes/Features:**

* Based on HN0062
* Updated ME FW version to 11.8.79.3722.
* Fixed issue where “Native ACPI OS PCIe Support can’t be enabled in BIOS if Thunderbolt Controller is enabled”.
* Fixed issue where “System BSoD during restart Windows 10 20H1 (2004)(SGX Driver v2.7.101.2)”.

**Known Errata:**

* **Blocked BIOS F7 Flash/EBU downgrade to HN0062 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

**HNKBLi70.86A.0062.2020.0813.2317 Production BIOS**

**About This Release:**

* Date: Aug 13, 2020
* ROM Image Checksum: 0x5A64, 0x3C79 (NOBG)
* ME Firmware: 11.8.70.3626
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000D6.mcb

**New Fixes/Features:**

* Based on HN0061
* Updated: NVME module to Label 26.
* Updated: TcgStorageSecurity driver.
* Fixed issue where systems with BIOS HN0060 & 0061 cannot boot with certain models of SSD installed:
  + ADATA XPG SSD
  + WD Blue SN550
  + Crucial MX500/P1
  + Intel 600p/660p/760p
  + HP EX900

**Known Errata:**

* **Downgrading to BIOS 0059 is only possible by using Jumper Recovery method.**
* **Blocked BIOS F7 Flash/EBU downgrade to HN0056 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

**HNKBLi70.86A.0061.2020.0617.1539 Production BIOS**

**About This Release:**

* Date: June 17, 2020
* ROM Image Checksum: 0xFB69, 0xDD7E (NOBG)
* ME Firmware: 11.8.70.3626
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000D6.mcb

**New Fixes/Features:**

* Based on HN0060
* Fixed [Intel-SPG][PEGA][HN] Microcode update for PSIRT.
* Fixed [SPG-HN][PEGA][Security] SA00289 PSIRT update.
* Fixed issue where “[Intel-SPG][PEGA][HN] Arbitrary code execution in SMM due to insufficient buffer validation.”
* Improved BIOS code:

>> Fixed [Intel-SPG][PEGA][HN] Lock Manufacturing mode abnormal behavior.

**Known Errata:**

* **Blocked BIOS F7 Flash/EBU downgrade to HN0056 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0060.2020.0318.1619 Production BIOS

**About This Release:**

* Date: March 18, 2020
* ROM Image Checksum: 0xABDD, 0x8DF2 (NoBG)
* ME Firmware: 11.8.70.3626
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000B4.mcb

**New Fixes/Features:**

* Based on HN0059
* Fixed PSIRT issues:

>> Updated ME to 11.8.70.3626.

>> Fixed issue where “Intel NUCs bypassing EFI variables protection (microcode downgrade still possible)”.

>> Fixed issue where “AHCI int13 smi driver vulnerable for OOB read”.

* Fixed issue [HSD-ES][client\_platf][bug][2209242185][]ICS - HN - BIOS53-58 Security bug: Not able to read SSD Admin Passwords created using BIOS 0052.
* Fixed issue [HSD-ES][client\_platf][bug][2209673523][]ICS: NUC8i7HNK, Deep S4/S5 setting not saved in BIOS.
* Fixed issue ICS - HN - BIOS53-58 Security bug: Not able to create Admin Passwords on SSDs.
* Fixed issue [HSD-ES][client\_platf][bug][2209242354][]ICS - HN - BIOS Feature Enhancement: Not able to Set Admin Password on both (2) installed SSDs.
* Fixed issue where “Set default Family Name” for Microsoft request.
* Fixed issue where “Energy star logo show on Tencent SKU(NUC8i7HVKVAW)”.
* Fixed issue where ICS: DN - PXE boot - “Press F12 for network service boot” message not displayed in UEFI.

**Known Errata:**

* **Blocked BIOS F7 Flash/EBU downgrade to HN0056 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0059.2019.1112.1124 Production BIOS

**About This Release:**

* Date: Nov 12, 2019
* ROM Image Checksum: 0x03BE, 0xE770(NoBG)
* ME Firmware: 11.8.60.3561
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000B4.mcb

**New Fixes/Features:**

* Based on HN0058
* Improved BIOS code.

>> Fixed issue where “WHQL USB3 Termination test fail”

>> Fixed Hybrid BIOS USB recovery

>> Fixed Intel NUC and Energy Star Logo

* Fixed PISRT issue.

>> Fixed issue where “CVE-2019-11094 Insufficient mitigation”

>> Fixed issue where “Attacker with a sufficient level of privileges can inject malicious code into the firmware”

>> Fixed issue where “PCR reset vulnerability of Intel Platform Trusted Technology (firmware TPM)"

>> Fixed issue where “Intel NUCs SMM code execution during the boot phase"

* Fixed: SMBIOS Field update BIOS for Microsoft request.
* Fixed: Chassis value type changed flash by BIO for Microsoft request.

**Known Errata:**

* **Blocked BIOS flash downgrade to HN0056 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0058.2019.0705.1646 Production BIOS

**About This Release:**

* Date: July 05, 2019
* ROM Image Checksum: 0x9377, 0x7729(NoBG)
* ME Firmware: 11.8.60.3561
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000B4.mcb

**New Fixes/Features:**

* Based on HN0057
* Fixed issue where [HSD-ES][client\_platf][bug][2206851920][]ICS: Hades: TPM disappears from Windows after power loss
* Fixed issue where “WHQL USB Exposed Port System Test” fails.
* Fixed issue where [HSD-ES][client\_platf][bug][platform.NUC.Hades Canyon][2207747905][p3-medium][open] ICS: HN - The power button never turns orange when using the Power Button Recovery process.
* Modified BIOS code for security fixes.

>> Fixed issue where “FW-UEFI-Vuln-2019-006 NUC SMRAM arbitrary write through the SMI handler's stack usage and SW SMI call-out”

>> Fixed issue where “Integer overflow SMM-module AhciInt13Smm on Intel NUC Kit”

**Known Errata:**

* **Blocked BIOS flash downgrade to HN0056 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0057.2019.0528.1518 Production BIOS

**About This Release:**

* Date: May 28, 2019
* ROM Image Checksum: 0xDBAD, 0xBF5F(NoBG)
* ME Firmware: 11.8.60.3561
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_000000B4.mcb

**New Fixes/Features:**

* Based on HN0056
* Modified BIOS code for security fixes.

>> Fixed NUC SW SMI call-out NVMe.

>> Fixed BIOS lack of update authentication.

>> Updated ME FW to 11.8.60.3561-SA00185 security advisory- ME update.

>> Updated Microcode to M2A906E9\_000000B4 Microarchitecture Data Sampling for PSIRT-TA-2019-02-002.

**Known Errata:**

* **Blocked BIOS flash downgrade to HN0056 and previous versions due to ME FW update.**
* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0056.2019.0506.1527 Production BIOS

**About This Release:**

* Date: May 06, 2019
* ROM Image Checksum: 0xFB058, 0xE243(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_0000008D\_0000008E.PDB

**New Fixes/Features:**

* Based on HN0055
* BIOS improvement.

>>Added workaround to display Energy Star LOGO for 2 seconds.

**Known Errata:**

* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

### HNKBLi70.86A.0055.2019.0424.1629 Production BIOS

**About This Release:**

* Date: Apr 24, 2019
* ROM Image Checksum: 0xF0B5, 0xD7A0(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO Files:

M2A906E9\_0000008D\_0000008E.PDB

**New Fixes/Features:**

* Based on HN0054
* Fixed no Energy Star LOGO from HN0050.
* Changed enclosure type default to 0x23.

**Known Errata:**

* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0054.2019.0214.1350 Production BIOS

**About This Release:**

* Date: Feb 14, 2019
* ROM Image Checksum: 0x7521, 0x5C0C(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM & .BIO files:

M2A906E9\_0000008D\_0000008E.PDB

**New Fixes/Features:**

* Based on HN0053
* Updated BIOS code for security fixes.

>> Update CryptoPkg module to label CryptoPkg\_32.01 for OpenSSL.

>> Fixed OverClockSMI handler allows read/write of SMRAM.

>> Update module to AmiCpuModulePkg\_027 to prevent CPU Microcode downgrade attack.

>> Removed additional DMAR RMRR table for external USB.

>> Update module to HddSecurity\_24

>> Fixed TcGSmm driver contain code that potentially exposes a smram attack.

>> Fixed FlashSmiSmm driver vulnerable to SMRAM memory write attack.

>> Fixed SmmPcieSataController driver vulnerable to SMRAM memory write attack.

>> Fixed Insufficient validation done on a user-controlled data structures while executing particular SMI handlers leads to SMRAM memory corruption

>> Fixed ITKSmmVars potential SMM privilege escalation.

**Known Errata:**

* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0053.2018.1217.1739 Production BIOS

**About This Release:**

* Date: December 17, 2018
* ROM Image Checksum: f88e,df79(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Fixed issue where [HSD-ES] [client\_platf] [bug] [2205368114] ICS: HN/KY/BN - Samsung eDrive stopped working.
* BIOS code improvement.

>>Updated TCG2 module to TCG2\_18

>>Updated NVME module to NVME\_19

>>Update TcgStorageSecurity module to TcgStorageSecurity\_04

>> Fixed OPAL password pop up when Windows 10 BitLocker is enabled.

**Known Errata:**

* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0052.2018.1129.1700 Production BIOS

**About This Release:**

* Date: November 29, 2018
* ROM Image Checksum: d9b2,c09d(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0

Integrated Graphics:

* + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* BIOS code improvement.

>> Changed ITK boot count for manufacturing line to 25.

>> Modified code to speed up boot time to Intel NUC logo.

>> Fixed ME loss when “After Power Failure” set to power on.

**Known Errata:**

* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0051.2018.1024.1600 Production BIOS

**About This Release:**

* Date: October 24, 2018
* ROM Image Checksum: d4e1,c7f6(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Based on HN0050.
* Fixed issue where [HSD-ES][client\_platf][bug][2205484449][]ICS: HNK - Error when trying to install ESXi 6.5 or 6.7
* Fixed issue where [HSD-ES][client\_platf][bug][2205447768][]ICS: HN - HNK won't install some Linux Distros with Secure Boot
* Fixed issue where [HSD-ES][client\_platf][bug][2205434578][]ICS: HN - Windows not showing Memory Speed Correctly

**Known Errata:**

* **ITK 5 based EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0050.2018.0927.1020 Production BIOS

**About This Release:**

* Date: September 27, 2018
* ROM Image Checksum: 957d, 8892(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - * Option ROM: 9.0.1051
      * UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Based on HN0049
* BIOS code improvement.

>> Fixed issue where LAN boot will be set as the 1st priority Boot device when 1st boot up.

>> Fixed issue where cannot receive CEC QEvent from EC.

>> Fixed issue where when Fast Boot is enabled and RAID changed to AHCI mode, system hangs at POST.

* Fixed issue where HSD 1407352212ICS: HN - SMBIOS Table Structure Issues.
* Fixed issue where HSD 1407352212 HN-Fast Boot and RAID mode coexistence problem - Visual BIOS.

**Known Errata:**

* **EBU files for INTERNAL Intel use only.**
* **WU files for Intel test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0049.2018.0801.1601 Production BIOS

**About This Release:**

* Date: August 01, 2018
* ROM Image Checksum: e894,dba9(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Added Deep S4/S5 item in BIOS setup.

**Known Errata:**

* **EBU files are for INTERNAL Intel use only.**
* **WU files are for test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0048.2018.0725.1749 Production BIOS

**About This Release:**

* Date: July 25, 2018
* ROM Image Checksum: 8c5b,7f70(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Removed Intel Ready Mode code/items in BIOS for Intel security fix.

**Known Errata:**

* **EBU files are for INTERNAL Intel use only.**
* **WU files are for test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0047.2018.0718.1706 Production BIOS

**About This Release:**

* Date: July 18, 2018
* ROM Image Checksum: 9879, 8b8e(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Fixed issue where UnCore voltage default was set to 0mV.
* Updated Microcode for Intel SA00115 PSIRT fixes.
* Removed Energy Star logo from showing in China SKU.

**Known Errata:**

* **EBU files are for INTERNAL Intel use only.**
* **WU files are for test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0046.2018.0712.1631 Production BIOS

**About This Release:**

* Date: July 12, 2018
* ROM Image Checksum: 4ebc,41d1(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.09.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Fixed issue where [HSD-ES] [client\_platf] [bug] [2203959776] ICS: HN - Updating the BIOS does not work when running some memory modules above 2400MHz.
* Fixed issue where [HSD-ES] [client\_platf] [bug][2204142145] ICS: HN - Does not power on correctly when the power cord is pulled and the BIOS option "After Power Failure" is set to either, "Last State" or "Power On".
* Updated EC FW to 0E.09.00.

**Known Errata:**

* **EBU files are for INTERNAL Intel use only.**
* **WU files are for test use only.**

### HNKBLi70.86A.0045.2018.0628.2116 Production BIOS

**About This Release:**

* Date: June 28, 2018
* ROM Image Checksum: d10f,c424 (NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.08.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000008D\_0000008E.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Added Windows F8 recovery function
* Updated to the latest microcode.
* Fixed fault tolerance sometimes are not working with BootGuard enabled board
* Added negative value for Core and Uncore voltage.

**Known Errata:**

* **EBU files are for INTERNAL Intel use only.**
* **WU files are for test use only.**

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0044.2018.0615.1726 Production BIOS

**About This Release:**

* Date: June 13, 2018
* ROM Image Checksum: 1cb4, 0fc9(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.08.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Changed verb table for DMIC function.
* Refine Energy-Star LOGO provided by Intel team.

**Known Errata:**

* **EBU files are for INTERNAL Intel use only.**
* **WU files are for test use only.**

### HNKBLi70.86A.0043.2018.0608.1115 Development BIOS

**About This Release:**

* Date: June 07, 2018
* ROM Image Checksum: e6bc,d9d1 (NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.08.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Fixed: CIR disable function does not work correctly.
* Fixed: ME FW update not working.
* Changed CIR Enabled in manufacturing mode, Disabled by default.

**Known Errata:**

* None.

### HNKBLi70.86A.0042.2018.0531.0911 Development BIOS

**About This Release:**

* Date: May 31, 2018
* ROM Image Checksum: 5bf7,4d0c(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.08.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Added Energy Star Logo on POST if system info product name belongs to an L10 system.
* Updated "ICBDCapsule" module to fix that unsigned BIO file can be used for FW update.

**Known Errata:**

* None.

### HNKBLi70.86A.0041.2018.0524.1105 Development BIOS

**About This Release:**

* Date: May 24, 2018
* ROM Image Checksum: 6273,5388(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.08.00
* Memory Reference Code: Based on 3.2.0
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 16.0.2.3402
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Updated to CRB 51.
* Updated SATA RAID Option ROM FW to 16.0.2.3402.

**Known Errata:**

None.

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0040.2018.0516.1521 Production BIOS

**About This Release:**

* Date: May 16, 2018
* ROM Image Checksum: D4EF,C604(NOBG)
* ME Firmware: 11.8.50.3460
* EC Firmware: 0E.08.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Fixed: Plextor SSD hanging issue.
* Updated ME FW to 11.8.50.3460
* Fixed Power button/Skull/Eye LED will present breathing.
* Fixed Power button/Skull/Eye LED default S0 behavior frequency is 0.

**Known Errata:**

* None.

### HNKBLi70.86A.0039.2018.0509.1758 Development BIOS

**About This Release:**

* Date: May 09, 2018
* ROM Image Checksum: 2da9, 1f76(NOBG)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.08.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_00000083\_00000084.PDB

**New Fixes/Features:**

* Fixed: Windows 10 Recovery can enter BIOS setup with User Access level set to No Access.
* Fixed VTinfo test no external USB RMRR entry
* Changed that EC will save to flash with each time LED setup item changes.
* Changed LED behavior default blinking frequency to 10 (1Hz)

**Known Errata:**

* None.

### HNKBLi70.86A.0038.2018.0503.0923 Development BIOS

**About This Release:**

* Date: April 26, 2018
* ROM Image Checksum: 1c72,0e3f(NOBG)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.08.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_00000083\_00000084.PDB

**New Fixes/Features:**

* Fixed: Issue with Power button, Skull, Eye LED set to any color in Visual BIOS, then reboot to OS, the behavior in S0 cannot recover to default.
* Fixed: Issue with Front LED3 set to single color in OS APP then reboot set to any color in Visual BIOS, it will not recovery to green to red.
* Fixed: Issue with after load defaults in Visual BIOS, LED setting cannot revert back to default under OS
* Fixed: Issue Via "Software LED Control Enabled" to change setting to Software Controlled, LED indicator and behavior cannot back to default.
* Fixed: Issue If only enable Ethernet2 or Both enable Ethernet 1&2, SUT will always boot to LAN boot as first boot device.
* Added USBrt security update.
* Changed verb table from Realtek for beep command.
* Updated EC FW to 0E.08.00

**Known Errata:**

* None.

**Kaby Lake-G Standard BIOS**

**PRODUCTS**: NUC8i7HNK, NUC8i7HVK (Hades Canyon)

### HNKBLi70.86A.0037.2018.0423.0910 Production BIOS

**About This Release:**

* Date: April 23, 2018
* ROM Image Checksum: 0469,F636(NoBG)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.07.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Added Fix: System sometimes cannot shutdown successfully.

**Known Errata:**

* None.

### HNKBLi70.86A.0036.2018.0418.1719 Release Candidate BIOS

**About This Release:**

* Date: April 18, 2018
* ROM Image Checksum:4D35, 3F02 (NoBG)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.07.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Fixed issue that LED don’t load default value for S3 blinking behavior.
* Fixed issue that LED not set S3 color as the color set in BIOS setup.
* Disable and hide the Legacy Boot option in Visual BIOS.

**Known Errata:**

* None.

### HNKBLi70.86A.0035.2018.0412.1113 Development BIOS

**About This Release:**

* Date: April 12, 2018
* ROM Image Checksum: 5acc, 4c99(NoBG)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.07.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Fixed LED Ethernet Indicator Type will change to LAN1 when system enters S3, S4, and S5.
* Fixed M.2 RST remapping in setup menu
* Fixed TBT security level not saved in BIOS setup
* Fixed power button LED will reset to default after reboot.

**Known Errata:**

* None.

### HNKBLi70.86A.0034.2018.0329.1113 Production BIOS

**About This Release:**

* Date: March 29, 2018
* ROM Image Checksum: 32A2,246F(NoBG)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.07.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Fixed LED WMI not report disabled status correctly
* Added LED blinking in flash update.

**Known Errata:**

* None.

### HNKBLi70.86A.0033.2018.0326.1602 Development BIOS

**About This Release:**

* Date: March 26, 2018
* ROM Image Checksum: 14b2,9951(No BG)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.07.00
* Memory Reference Code: Based on 3.0.1
* MEBx Revision: NA
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_00000083\_00000084.PDB

**New Fixes/Features:**

* Fixed when F7 flash BIOS from HN0022, NVME device cannot remap to RST
* Set LED to default SW control setting when LED setup item changed from disable to SW control
* Added HDMI hot plug feature for headless operation.

**Known Errata:**

* None.

### HNKBLi70.86A.0032.2018.0314.1912 Development BIOS

**About This Release:**

* Date: March 14, 2018
* ROM Image Checksum: d204
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.07.00
* Memory Reference Code: Based on 3.0.1
* MEBx Revision: NA
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_00000083\_00000084.PDB

**New Fixes/Features:**

* Reset LED setting after flash BIOS from old version to fix SW control color not correct issue
* Fixed Samsung NVME SSD 950 not show device name in setup menu.

**Known Errata:**

* None.

### HNKBLi70.86A.0031.2018.0308.1050 Development BIOS

**About This Release:**

* Date: March 08, 2018
* ROM Image Checksum: ec7a
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.07.00
* Memory Reference Code: Based on 3.0.1
* MEBx Revision: NA
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_00000083\_00000084.PDB

**New Fixes/Features:**

* Added IO Header - Control Power LED porting
* Disabled Post Manufacturing NVAR Configuration
* Fixed F9 load default not load LED options default
* Fixed Secondary LAN will be disable when disable Primary LAN
* Fixed fastboot enable will present win logo
* Hide LED Reset item from Visual BIOS
* Updated EC FW to 0E.07.00

**Known Errata:**

* None.

### HNKBLi70.86A.0030.2018.0301.1049 Development BIOS

**About This Release:**

* Date: March 01, 2018
* ROM Image Checksum: b7f3, 6897(FVME)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.06.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_00000083\_00000084.PDB

**New Fixes/Features:**

* Fixed FP1~FP3 no default S3 behavior
* Fixed LED disable indicator behavior
* Fixed NewGetLedStatus cannot get indicator
* Fixed SW control indicator cannot set and get correctly
* Fixed SW control indicator color cannot be set
* Fixed MAC Address information can’t read after disable "Network Boot" in setup
* Changed USB driving ability porting.

**Known Errata:**

* None.

### HNKBLi70.86A.0029.2018.0222.1359 Production BIOS

**About This Release:**

* Date: February 22, 2018
* ROM Image Checksum: CE4B,7EEF(FVME)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.06.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_00000083\_00000084.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_00000083\_00000084.PDB

**New Fixes/Features:**

* Updated microcode to 84.
* Updated EC FW to 0E.06.00

**Known Errata:**

* None.

### HNKBLi70.86A.0028.2018.0213.1200 Development BIOS

**About This Release:**

* Date: February 13, 2018
* ROM Image Checksum: 1acb,cb6f(FVME)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.05.00
* Memory Reference Code: Based on 3.0.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Added TBT SxExit delay
* Added i210 pxe legacy rom
* Added new EC config for max duty cycle
* Added new fan curve
* Added psys porting
* Change NetworkBoot default value to disabled
* Disabled iSST by default
* Enabled/Disabled LAN1 UEFI PXE Boot by setup item
* Fixed ATI HDA SSID incorrect
* Fixed BEL fail item: 3 attempts with invalid password
* Fixed LED WMI NewGetLedStatus fail
* Fixed LED WMI can change when not set to SW control
* Fixed NVME device not showing Remapped to RST
* Fixed S3/S4/S5 reset LED setting to default
* Hide cec standby TV item temporarily
* Removed Deep S4/S5 setup item
* Updated EC FW to 0E.05.00.

**Known Errata:**

* None.

### HNKBLi70.86A.0027.2018.0205.1423 Development BIOS

**About This Release:**

* Date: February 05, 2018
* ROM Image Checksum: 8613, 36B7(FVME)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.04.00
* Memory Reference Code: Based on 3.0.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Added CIR wake S345 porting
* Changed CEC standby by tv S3 porting with Q-event 0xE3
* Changed Fan speed monitor to one CPU FAN
* Changed Psys setting board id check method
* Changed PsysPmax to 230W
* Changed USB2.0 driving ability
* Fixed LAN2 setting cause razor core cannot work
* Fixed fan off temperature maximum value

**Known Errata:**

* None.

### HNKBLi70.86A.0026.2018.0129.1924 Development BIOS

**About This Release:**

* Date: January 29, 2018
* ROM Image Checksum: d2a2,8346(FVME)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.03.00
* Memory Reference Code: Based on 3.0.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Added CEC S3 0x29 command
* Added EC BoardID\_HW\_State check
* Changed SATA TX porting
* Changed GPIO porting for UCM
* Fixed F10 select SSD showing windows logo
* Fixed set HDD user password then boot to OS will show windows logo
* Fixed fan not showing FAN1,FAN2
* Fixed LED S3 default
* Fixed Samsung NVME SSD not show VDID on pci tab
* Fixed secondary lan mac address not show
* Fixed some performance item still can change with user access view only
* Fixed temperature display
* Removed CRB setup items in AddIn
* Revert microcode to 70
* Updated EC FW to 0E.03.00.

**Known Errata:**

* None.

### HNKBLi70.86A.0025.2018.0122.1928 Development BIOS

**About This Release:**

* Date: January 22, 2018
* ROM Image Checksum: 616D, 1211(FVME)
* ME Firmware: 11.8.50.3434
* EC Firmware: 0E.02.00
* Memory Reference Code: Based on 3.0.1
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1074
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000007F\_00000080.PDB

* Additional Microcode Updates included only in .BIO File:

None

**New Fixes/Features:**

* Added CIR Controler Type setup item
* Added EC flag clear event function
* Added set EC readCPUTempEnable\_H2RAM flag in PEI
* Changed PCIE RP5 ASPM to Disable
* Changed PCIE RP5 L1 Substates to Disable
* Changed TBT Enable ASPM to Disable
* Changed TBT Reserve I/O to 0
* Changed TBT Reserve IO per phy slot to 0
* Changed TBT USB boot and TBT boot default to disable
* Enabled SPI lock
* Fixed CIR controller type behavior
* Fixed TBT security level
* Fixed WHQL Secure Boot Test
* Fixed WHQL USB Exposed Port System Test fail
* Fixed after rebooting from setting up the profile, the memory Reference Multiplier is disappeared.
* Fixed blue screen when connecting PCI-E device thru TBT
* Removed DGPU ROM
* Removed TBT test delay
* Set EC 0x5F8~0x5FB to 0 when setup item HDMI CEC Control set to disable
* Updated EC FW to 0E.02.00
* Updated ME FW to 11.8.50.3434
* Updated fan curve
* Updated microcode.

**Known Errata:**

* None.

### HNKBLi70.86A.0024.2018.0111.1842 Development BIOS

**About This Release:**

* Date: January 10, 2018
* ROM Image Checksum: f5fe,a62c(FVME)
* ME Firmware: 11.8.50.3425v2
* EC Firmware: 0D.05.00
* Memory Reference Code: Based on 2.9.3
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1015
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Changed Internal Graphics to Intel iGD
* Changed PEG1 for Asmedia USB MaxLinkSpeed to auto
* Changed Performance page for XTU interface
* Changed PowerDefault Balanced & Max Performance Packge Power Time Window (Tau) from 70s to 64s
* Changed PowerDefault VR Current Limits (ICC max Amps) Max value for 150 to 125
* Changed SATA RX porting
* Fixed LED SW control gray out LED items
* Fixed LED SW control help string
* Fixed LED all on not on, now LED will return to default setting
* Fixed LED disable not function
* Fixed LED no default S3 behavior
* Fixed SATA device not show in setup SATA tab when set to RAID mode
* Fixed Suppress Alert Messages At Boot default value
* Fixed SUT will hang on when Press Ctrl+I enter to RAID menu.
* Fixed USB port 3,4 not disable USB 3.0 device
* Fixed WLAN cannot disable
* Fixed i2c not enable for UCM device
* Fixed network boot not load default
* Updated EC FW to 0D.05.00

**Known Errata:**

* None.

### HNKBLi70.86A.0023.2018.0105.1903 Development BIOS

**About This Release:**

* Date: January 05, 2018
* ROM Image Checksum: 510f, 013d(FVME)
* ME Firmware: 11.8.50.3425v2
* EC Firmware: 0D.04.00
* Memory Reference Code: Based on 2.9.3
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Added LED setup tab new items
* Added back secondary temperature monitor
* Added performance changes
* Changed SATA RX porting
* Changed secondary temperature monitor default and options
* Changed Internal Graphics to Intel iGD
* Fixed Allow UEFI 3rd party driver loaded help string
* Fixed CPU FAN Header help string
* Fixed Num lock not present in setup menu
* Fixed SD Card "read only" option not present
* Fixed SUT will hang on when Press Ctrl+I enter to RAID menu
* Fixed Thunderbolt still can work after disabled "Thunderbolt Controller" on BIOS Setup.
* Fixed Thunderbolt usb device could boot when disable Thunderbolt USB Boot under BIOS setup
* Fixed USB Port 06[Charging Port] no set to gray out and disable when Portable Device Charging Mode set to Charging Only.
* Fixed USB not charging in S345
* Fixed USB port set to "no detect" still can detect in F10 menu
* Fixed default setting of Ignore Thunderbolt Option Rom is disable
* Fixed when connecting SATA SSD to con5601 not show in setup menu
* Fixed when setup HDD/LAN LED color change, indicator change to power indicator
* Fixed must Press F4 continuously to boot to BIOS recovery
* Removed PCI subsystem options from AddIn tab
* Removed first 6 items in PCI tab

**Known Errata:**

* None.

### HNKBLi70.86A.0021.2017.1228.1615 Development BIOS

**About This Release:**

* Date: December 28, 2017
* ROM Image Checksum: 0de0
* ME Firmware: 11.8.50.3425v2
* EC Firmware: 0D.04.00
* Memory Reference Code: Based on 2.9.3
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Fixed MFGDMI2 tool manufacturing mode not set.

**Known Errata:**

* None.

### HNKBLi70.86A.0020.2017.1227.1625 Development BIOS

**About This Release:**

* Date: December 27, 2017
* ROM Image Checksum: B05D
* ME Firmware: 11.8.50.3425v2
* EC Firmware: 0D.04.00
* Memory Reference Code: Based on 2.9.3
* Integrated Graphics:
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1015
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Added PCIE RX driving porting
* Added performance changes
* Changed FAN help string
* Changed HDMI CEC help string
* Changed SATA porting
* Changed SD CARD porting to ready to boot
* Changed UCM porting
* Changed USB port help string
* Changed USB2PP1 porting
* Fixed PCI-E M.2 VDID show error
* Fixed only show two temperature monitor
* Fixed when change BCLK setting cannot flash
* Removed IGD setup item in code
* Removed USCI item
* Removed optane items in setup
* Removed secondary temp sensor options and set to same as primary sensor
* Updated EC FW to 0D.04.00
* Updated ME FW to 11.8.50.3425v2
* Updated RAID OPROM 15.9.0.1015.

**Known Errata:**

* None.

### HNKBLi70.86A.0019.2017. 1219.1818 Development BIOS

**About This Release:**

* Date: December 19, 2017
* ROM Image Checksum: ee0e
* ME Firmware: 11.8.50.3420
* EC Firmware: 0C.04.00
* Memory Reference Code: Based on 2.9.3
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1013
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Fixed USB device plugin USB port CON4801 no present OS detect sound
* Fixed USB Port 06[Charging Port] no set to gray out and disable when Portable Device Charging Mode set to Charging Only.
* Fixed WMI pulsing/LAN index value
* Changed VccSA and VccGT to 24A and 60A
* Enabled secure boot after manufacturing mode locked
* Enabled SPI lock
* Added LED Control tab in Devices page
* Updated RC to 2.9.3
* Updated EC FW to 0C.04.00

**Known Errata:**

* Temporarily removed FwBuffer variable within CISDFlashSMIHandler which causes Visual BIOS F7 auto reset.

### HNKBLi70.86A.0018.2017.1206.2304 Development BIOS

**About This Release:**

* Date: December 06, 2017
* ROM Image Checksum: e422
* ME Firmware: 11.8.50.3420
* EC Firmware: 0C.03.00
* Memory Reference Code: Based on 2.9.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1013
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Added BIOS self recovery setup item
* Added fanless mode
* Added second fan
* Changed LED brightness to 26 steps
* Changed LED default to SW control
* Changed SATA setup items
* Changed TDC
* Changed front led number
* Changed power limit default settings
* Changed psys max to 2960
* Changed video setup items
* Fixed SATA mode change from RAID to AHCI hangs
* Fixed button LED reset to default after reboot
* Fixed fast boot not disable USB KB for setup menu
* Fixed o2micro sd card power saving mode setting
* Fixed power button menu fails while overclocking support default enable
* Updated EC FW to 0C.03.00.

**Known Errata:**

* None.

### HNKBLi70.86A.0017.2017.1130.1224 Development BIOS

**About This Release:**

* Date: November 30, 2017
* ROM Image Checksum: 1f74
* ME Firmware: 11.8.50.3420
* EC Firmware: 0C.02.00
* Memory Reference Code: Based on 2.9.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1013
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Removed HDMI/DisplayPort Audio setup item
* Removed Startup Sound setup item
* Removed LED Ready mode items
* Added manual memory timing override function
* Enabled IntelSST
* Fixed tRRD\_L, tRRD\_S value range
* Fixed TBT boot related help string
* Fixed memory voltage/timing/tWR/tRTP help string
* Fixed power button menu function
* Updated EC FW to 0C.02.00

**Known Errata:**

* 0C.XX.XX version EC is for fab C board, HDD LED and LAN LED's behavior is oppsite on fab B board.

### HNKBLi70.86A.0016.2017.1122.2347 Development BIOS

**About This Release:**

* Date: November 22, 2017
* ROM Image Checksum: 8bd6
* ME Firmware: 11.8.50.3420
* EC Firmware: 0B.08.00
* Memory Reference Code: Based on 2.9.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1013
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Added CEC setup items
* Changed suppress POST alert message default to Enabled
* Fixed LED WMI setting changed after reboot
* Updated HDD security module
* Fixed USB port disable and no detect function
* Fixed some setup item can change when user access level set to view only
* Fixed IDE password help string

**Known Errata:**

* None.

### HNKBLi70.86A.0015.2017.1117.1801 Development BIOS

**About This Release:**

* Date: November 17, 2017
* ROM Image Checksum: 8164
* ME Firmware: 11.8.50.3420
* EC Firmware: 0B.08.00
* Memory Reference Code: Based on 2.9.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1013
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Fixed USB charging setup item
* Fixed USB S4/S5 power setup item
* Fixed fast boot can set when HDD user password installed
* Fixed WMI LED set indicator type issue
* Removed IGD minimum memory option and set to 64MB
* Enabled IntelSST function
* Enabled FPRR feature
* BCLK for F10 load default issue
* Changed IA TDC power limit to 104A
* Changed IccMAX to 104A
* Downgrade ME FW to 11.8.50.3420.

**Known Errata:**

* None.

### HNKBLi70.86A.0014.2017.1115.1741 Development BIOS

**About This Release:**

* Date: November 15, 2017
* ROM Image Checksum: c5f9
* ME Firmware: 11.8.50.3425
* EC Firmware: 0B.08.00
* Memory Reference Code: Based on 2.9.1
* RC: Based on 2.9.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1013
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Fixed BLCK function
* Changed LED WMI function
* Updated EC FW to 08.00
* Updated ME FW to 11.8.50.3425
* Updated RC to 2.9.1

**Known Errata:**

* Power button menu not working.

### HNKBLi70.86A.0013.2017.1101.2334 Development BIOS

**About This Release:**

* Date: November 01, 2017
* ROM Image Checksum: 6f63
* ME Firmware: 11.8.50.3399
* EC Firmware: 0B.07.00
* Memory Reference Code: Based on 2.8.1
* RC: Based on 2.8.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1073
* SATA RAID Option ROM: 15.9.0.1013
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Updated ME FW to 11.8.50.3399
* Updated RAID Driver to 15.9.0.1013
* Updated GOP to 9.0.1073
* Updated EC FW to 0B.07.00
* Fixed secure boot can’t install key.
* Fixed USB charging port not working
* Fixed UCSI yellow bang
* Fixed incorrect setup items
* Fixed show hotkey string when flash update

**Known Errata:**

* None.

### HNKBLi70.86A.0012.2017.1026.1357 Development BIOS

**About This Release:**

* Date: October 25, 2017
* ROM Image Checksum: 4f89
* ME Firmware: 11.7.4.3314
* EC Firmware: 0B.06.00
* Memory Reference Code: Based on 2.8.1
* RC: Based on 2.8.1
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1069
* SATA RAID Option ROM: 15.9.0.1007
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Updated EC to 0B.06.00
* Updated RC to 2.8.1
* Fixed advanced help text of fast boot setup item
* Fixed M.2 slot detection string in setup
* Added "Portable Device Charging Mode" setup item
* Added "Wake on WLAN and BT Enable" setup item
* Removed RMT mode setup item
* Removed HDMI CEC setup item
* Set PL1/PL2 to 45W/65W
* Changed verb table for TOSLINK
* Enabled Boot Guard support
* Enabled above 4G decoding support
* Changed L1 setting of O2 Micro card reader
* Added performance items
* Changed GPP H4 to bidirectional

**Known Errata:**

* None.

### HNKBLi70.86A.0011.2017.1018.2024 Development BIOS

**About This Release:**

* Date: October 18, 2017
* ROM Image Checksum: a861
* ME Firmware: 11.7.4.3314
* EC Firmware: 0B.05.00
* Memory Reference Code: Based on 2.7.2
* RC: Based on 2.7.3
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1069
* SATA RAID Option ROM: 15.9.0.1007
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M22906EA\_0000006A.mcb

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M22906EA\_0000006A.mcb

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Fixed wake on lan S5 not working
* Fixed card reader SSID porting
* Updated EC FW
* Updated SMBIOS module to 15
* Changed SMBIOS Type 3 chassis info SKU number default string
* Changed Asmedia USB to GEN1
* Changed verb table setting

**Known Errata:**

* None.

### HNKBLi70.86A.0010.2017.1012.1055 Development BIOS

**About This Release:**

* Date: October 12, 2017
* ROM Image Checksum: 4fc8
* ME Firmware: 11.7.4.3314
* EC Firmware: 0B.04.00
* Memory Reference Code: Based on 2.7.2
* RC: Based on 2.7.3
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1069
* SATA RAID Option ROM: 15.9.0.1007
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M22906EA\_0000006A.mcb

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M22906EA\_0000006A.mcb

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Fixed error execute QueryLed WMI method.
* Fixed power button menu keyboard not working
* Changed verb table setting
* Updated EC FW to 0B.04.00

**Known Errata:**

* None.

### HNKBLi70.86A.0009.2017.1006.1218 Development BIOS

**About This Release:**

* Date: October 06, 2017
* ROM Image Checksum: 9cff
* ME Firmware: 11.7.4.3314
* EC Firmware: 0B.03.00
* Memory Reference Code: Based on 2.7.2
* RC: Based on 2.7.3
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1069
* SATA RAID Option ROM: 15.9.0.1007
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219, 0.0.17 i211
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M22906EA\_0000006A.mcb

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M22906EA\_0000006A.mcb

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Fixed i211,i219 PXE ROM not both show on boot menu
* Changed audio verb table setting

**Known Errata:**

* None.

### HNKBLi70.86A.0008.2017.0927.2330 Development BIOS

**About This Release:**

* Date: September 27, 2017
* ROM Image Checksum: 0x3aac
* ME Firmware: 11.7.4.3314
* EC Firmware: 0B.03.00
* Memory Reference Code: Based on 2.7.2
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1069
* SATA RAID Option ROM: 15.9.0.1007
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11 i219
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M22906EA\_0000006A.mcb

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M22906EA\_0000006A.mcb

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Updated RC code to 2.7.3 (RS3 BKC)
* Fixed keyboard cannot use with entry DOS
* Fixed USB device can't boot via by thunderbolt
* Fixed TBT3 device lost when resume from sleep mode
* Fixed CIR isn't appear in Device Manager

**Known Errata:**

* None.

### HNKBLi70.86A.0007.2017.0920.2225 Development BIOS

**About This Release:**

* Date: September 20, 2017
* ROM Image Checksum: 0x26c3
* ME Firmware: 11.7.4.3314
* EC Firmware: 0B.03.00
* Memory Reference Code: Based on 2.7.2
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1069
* SATA RAID Option ROM: 15.9.0.1007
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

M22906EA\_0000006A.mcb

M02906EB\_0000005E.mcb

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

M22906EA\_0000006A.mcb

M02906EB\_0000005E.mcb

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Update RC to 2.7.2
* Added Psys setting
* Added WMI for new LED function implement
* Added Deep SX support
* Added ASM1142 L1 support

**Known Errata:**

* Cannot use iflash, can use “fpt -f HN0001.bin” under UEFI shell.

### HNKBLi70.86A.0006.2017.0914.1116 Development BIOS

**About This Release:**

* Date: September 14, 2017
* ROM Image Checksum: 0x3a15
* ME Firmware: 11.7.3.3307
* EC Firmware: 0B.02.00
* Memory Reference Code: Based on 2.7.0
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1066
* SATA RAID Option ROM: 15.7.0.3027
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: 7.5.11
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

MC0806E9\_00000062.mcb

MC0806EA\_00000066.mcb

M2A906E9\_0000006F\_00000070.PDB

* Additional Microcode Updates included only in .BIO File:

MC0806E9\_00000062.mcb

MC0806EA\_00000066.mcb

M2A906E9\_0000006F\_00000070.PDB

**New Fixes/Features:**

* Update RC to 2.7.0
* Fixed optane cannot detect
* Fixed front panel USB not working with setup menu
* Added delay time for GPU power sequence
* Fixed ME device cannot recognize after EC flash
* Fixed EC flash fail
* Fixed PL1/PL2 setting
* Added porting for card reader
* Added RTD3 support for card reader
* Added IMVP8 issue fix
* Changed verb table

**Known Errata:**

* Cannot use iflash, can use “fpt -f HN0001.bin” under UEFI shell.

### HNKBLi70.86A.0005.2017.0830.2140 Development BIOS

**About This Release:**

* Date: August 30, 2017
* ROM Image Checksum: 0xb053
* ME Firmware: 11.7.0.3290
* EC Firmware: 0A.07.00
* Memory Reference Code: Based on 2.6.0
* MEBx Revision: NA
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1066
* SATA RAID Option ROM: 15.7.0.1014
* SATA non-RAID Option ROM: NA
* AHCI Code: Based on AHCI\_14
* LAN Option ROM: PXE 2.1 Build 092
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

MC0806E9\_00000062.mcb

MC0806EA\_00000066.mcb

M2A906E9\_0000005D\_0000005E.PDB

* Additional Microcode Updates included only in .BIO File:

MC0806E9\_00000062.mcb

MC0806EA\_00000066.mcb

M2A906E9\_0000005D\_0000005E.PDB

**New Fixes/Features:**

* Added LED control setup option
* Updated fan curve and fan control with EC
* Fixed COM2 yellow bang after resume from S3
* Added ASMEDIA porting for front USB wakeup
* Updated EC firmware to 0A.07.00
* Changed SIRQ default to continuous mode

**Known Errata:**

* Cannot use iflash, can use “fpt -f HN0001.bin” under UEFI shell.

### HNKBLi70.86A.0004.2017.0817.1143 Development BIOS

**About This Release:**

* Date: August 24, 2017
* ROM Image Checksum: 0x22eb
* ME Firmware: 11.7.0.3290
* EC Firmware: 0A.05.00
* Memory Reference Code: Based on 2.6.0.0
* MEBx Revision: N/A
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1066
* SATA RAID Option ROM: 15.7.0.1014
* SATA non-RAID Option ROM: N/A
* AHCI Code: Based on 14
* LAN Option ROM: 2.1 Build 092
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

MC0806E9\_00000062.mcb

MC0806EA\_00000066.mcb

M2A906E9\_0000005D\_0000005E.PDB

* Additional Microcode Updates included only in .BIO File:

N/A

**New Fixes/Features:**

* Added fan curve
* Fixed hang 0x04 when quick unplug DC power with RTC battery
* Added USB CHG port not support wake up from S3 solution

**Known Errata:**

* Cannot use iflash, can use “fpt -f HN0001.bin” under UEFI shell.

### HNKBLi70.86A.0003.2017.0817.1143 Development BIOS

**About This Release:**

* Date: August 17, 2017
* ROM Image Checksum: 0xdcdb
* ME Firmware: 11.7.0.3290
* EC Firmware: 0C.02.00
* Memory Reference Code: Based on 2.6.0.0
* MEBx Revision: N/A
* Integrated Graphics
  + - Option ROM: 9.0.1051
    - UEFI Driver: 9.0.1066
* SATA RAID Option ROM: 15.7.0.1014
* SATA non-RAID Option ROM: N/A
* AHCI Code: Based on 14
* LAN Option ROM: 2.1 Build 092
* Visual BIOS: 2.2.25
* Supported Flash Devices:

WinBond W25Q128JVSIQ 16MB

MACRONIX MX25L12850F 16MB

GigaDevice GD25B127D 16MB

* Microcode Updates included in .ROM File:

MC0806E9\_00000062.mcb

MC0806EA\_00000066.mcb

M2A906E9\_0000005D\_0000005E.PDB

* Additional Microcode Updates included only in .BIO File:

N/A

**New Fixes/Features:**

* Add CISD feature code module
* Updated CRB code to 2.6.0
* Changed dGPU power sequence and GPIO setting
* Fixed not showing option ROM message on post

**Known Errata:**

* Cannot use iflash, can use “fpt -f HN0001.bin” under UEFI shell.

### HNKBLi70.86A.0002.2017.0809.1839 Development BIOS

**About This Release:**

* Date: August 09, 2017
* ROM Image Checksum: 0xec17
* ME Firmware: 11.7.0.3290
* EC Firmware: N/A
* Memory Reference Code: Based on 2.5.0.0
* MEBx Revision: N/A
* Integrated Graphics
  + - Option ROM: N/A
    - UEFI Driver: 9.0.1066
* SATA RAID Option ROM: 15.7.0.3054
* SATA non-RAID Option ROM: N/A
* AHCI Code: Based on 14
* LAN Option ROM: 2.1 Build 092
* Visual BIOS: N/A
* Supported Flash Devices:

MX25L12873FM2I-10G

* Microcode Updates included in .ROM File:

MC0806E9\_00000062.mcb

MC0806EA\_00000064.mcb

MC0406E3\_000000BA.mcb

M22906EA\_0000005C.mcb

M2A906E9\_0000005E.mcb

M36506E3\_000000BA.mcb

M2A906E9\_0000005D\_0000005E.PDB

* Additional Microcode Updates included only in .BIO File:

N/A

**New Fixes/Features:**

* Changed dGPU power sequence delay from 150ms to 100ms
* Changed verb table subsystem ID for headset
* Changed DMIC related GPIO setting

**Known Errata:**

* Cannot use F7/iflash, can use “fpt -f HN0001.bin” under UEFI shell.

### HNKBLi70.86A.0001.2017.0802.1553 Development BIOS

**About This Release:**

* Date: August 02, 2017
* ROM Image Checksum: 0x0d9e
* ME Firmware: 11.7.0.3290
* EC Firmware: N/A
* Memory Reference Code: Based on 2.5.0.0
* MEBx Revision: N/A
* Integrated Graphics
  + - Option ROM: N/A
    - UEFI Driver: 9.0.1066
* SATA RAID Option ROM: 15.7.0.3054
* SATA non-RAID Option ROM: N/A
* AHCI Code: Based on 14
* LAN Option ROM: 2.1 Build 092
* Visual BIOS: N/A
* Supported Flash Devices:

MX25L12873FM2I-10G

* Microcode Updates included in .ROM File:

MC0806E9\_00000062.mcb

MC0806EA\_00000064.mcb

MC0406E3\_000000BA.mcb

M22906EA\_0000005C.mcb

M2A906E9\_0000005E.mcb

M36506E3\_000000BA.mcb

M2A906E9\_0000005D\_0000005E.PDB

* Additional Microcode Updates included only in .BIO File:

N/A

**New Fixes/Features:**

* First formal release.

**Known Errata:**

* Cannot use F7/iflash, can use “fpt -f HN0001.bin” under UEFI shell.

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