



## BIOS Update Release Notes

### PRODUCTS: QC71A, QC71B, QC71C, QC71D (Standard BIOS)

**QCCFL357.0134.2021.0427.1335 Production BIOS (Lock BIOS)**

#### About This Release:

- Date: Apr 27, 2021
- ROM Image Checksum:
  - Filename = QC0134.bin Checksum = 0xB69787AD
  - Filename = QC0134.cap Checksum = 0xBB875B37
- ME Firmware: Consumer 12.0.65.1567
- EC Firmware: 1.29.09
- PMC Firmware: 300.2.11.1025
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Visual BIOS: Intel Text Setup
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .BIN & .CAP Files:
  - M22906EA\_000000CC.mcb

#### New Fixes/Features:

- Fixed: Battery charge level reporting and charging issues where the battery wouldn't completely charge (It may take up to three charging cycles for the battery management system to learn to read the charge correctly).
- Updated: EC FW to 1.29.09
- Updated: CPU microcode M22906EA\_000000CC.mcb

**BIOS Version 0128 - QCCFL357.0128.2021.0312.1538**

#### About This Release:

- Date: Mar 12, 2021
- ROM Image Checksum:
  - Filename = QC0128.bin Checksum = 0xB69A4F13
  - Filename = QC0128.cap Checksum = 0xBB8A47C6
- ME Firmware: Consumer 12.0.65.1567
- EC Firmware: 1.26.09
- PMC Firmware: 300.2.11.1025
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:

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

- Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Visual BIOS: Intel Text Setup
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .BIN & .CAP Files:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Updated: EC FW to 1.26.09
- Optimized: Battery charging to improve long-term life

<b>BIOS Version 0122 - QCCFL357.0122.2020.0911.1520</b>
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**About This Release:**

- Date: Sep 11, 2020
- ROM Image Checksum:
  - Filename = QC0122.bin    Checksum = 0xB66A5184
  - Filename = QC0122.cap    Checksum = 0xBB5A3174
- ME Firmware: Consumer 12.0.65.1567
- EC Firmware: 1.25.09
- PMC Firmware: 300.2.11.1025
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Visual BIOS: Intel Text Setup
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .BIN & .CAP Files:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Enabled the option, "Display F8 for Activate windows recovery mode" as default.
- Enabled the option, "Intel(R) Speed shift technology" as default.

<b>BIOS Version 0120 - QCCFL357.0120.2020.0813.1334</b>
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**About This Release:**

- Date: Aug 13, 2020
- ROM Image Checksum: 0xB66C3AA1
- ME Firmware: Consumer 12.0.65.1567
- EC Firmware: 1.25.09
- PMC Firmware: 300.2.11.1025
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104

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

- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Supported Flash Devices:
  - Winbond W25Q128JV 16MB
- Microcode Updates included in .ROM File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb
- Additional Microcode Updates included only in .BIO File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Enabled: Kernel DMA protection.
- Added: Missing\_RP3 ACPI table.

<b>BIOS Version 0118 - QCCFL357.0118.2020.0720.1610</b>
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**About This Release:**

- Date: July 20, 2020
- ROM Image Checksum: 0xB66AF702
- ME Firmware: Consumer 12.0.65.1567
- EC Firmware: 1.25.09
- PMC Firmware: 300.2.11.1025
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .ROM File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb
- Additional Microcode Updates included only in .BIO File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Fixed: An issue with the DmiEdit tool.
- Enabled: CPU core voltage lock to enable.
- Updated: BIOS functionality so that the BIOS can only be updated via the power cord.
- Added: F8 recovery functions.
- Fixed: Issue where GT/GTU prefix showed the incorrect sign.
- Added: Solution for DPC error when running LantencyMon

<b>BIOS Version 0116 - QCCFL357.0116.2020.0619.1354</b>
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**About This Release:**

- Date: June 19, 2020
- ROM Image Checksum: 0xB66FCC58
- ME Firmware: Consumer 12.0.65.1567

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

- EC Firmware: 1.25.09
- PMC Firmware: 300.2.11.1025
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .ROM File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb
- Additional Microcode Updates included only in .BIO File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Update Me FW: 12.0.65.1567
- Update PMC Firmware: 300.2.11.1025

<b>BIOS Version 0114 - QCCFL357.0114.2020.0401.1544</b>
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**About This Release:**

- Date: April 1, 2020
- ROM Image Checksum: 0xB661C2A7
- ME Firmware: Consumer 12.0.40.1433
- EC Firmware: 1.25.09
- PMC Firmware: 300.2.11.1020
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Visual BIOS: Intel Text Setup
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .BIN & .CAP Files:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Added support for: Minimum Fan Duty Cycle.
- Added support for: Battery Life Extension.
- Added support for: Undervoltage.
- Added support for: FN Lock + Esc.
- Added support for: Project Aurora

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

**Known Errata:**

- You will NOT be able to flash/recover to previous BIOS versions before 0114.

<b>BIOS Version 0064 - QCCFL357.0064.2020.1226.1657</b>
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**About This Release:**

- Date: March 31, 2020
- ROM Image Checksum: 0xB68445D4
- ME Firmware: Consumer 12.0.40.1433
- EC Firmware: 1.20.09
- PMC Firmware: 300.2.11.1020
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.8.0.4507
  - RAID Option ROM: 17.8.0.4507
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .ROM File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb
- Additional Microcode Updates included only in .BIO File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Removed 1.8 seconds of delay to fix a thunderbolt yellow bang issue.
- Added Thunderbolt HRESET Sequence.

<b>BIOS Version 0062 - QCCFL357.0062.2020.1226.1657</b>
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**About This Release:**

- Date: March 13, 2020
- ROM Image Checksum: 0xB68207FB
- ME Firmware: Consumer 12.0.40.1433
- EC Firmware: 1.20.09
- PMC Firmware: 300.2.11.1020
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.8.0.4507
  - RAID Option ROM: 17.8.0.4507
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .ROM File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb
- Additional Microcode Updates included only in .BIO File:

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

- M22906EA\_000000B4.mcb
- M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Added a 1.8 second delay to fix thunderbolt yellow bang.
- Updated BIOS RAID driver/RAID ROM to 17.8.0.4507.
- Fixed Hybrid sleep issues where the system couldn't enter S4 status.
- Enabled FAST\_BOOT\_TSE\_HOTKEY\_SUPPORT.
- Removed Thunderbolt HRESET Sequence.

<b>BIOS Version 0060 - QCCFL357.0060.2019.1226.1657</b>
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**About This Release:**

- Date: December 26, 2019
- ROM Image Checksum: 0xB6888787
- ME Firmware: Consumer 12.0.40.1433
- EC Firmware: 1.20.09
- PMC Firmware: 300.2.11.1020
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Visual BIOS: Intel Text Setup
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .BIN & .CAP Files:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Added Thunderbolt HRESET Sequence.

<b>BIOS Version 0058 - QCCFL357.0058.2019.1209.1324</b>
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**About This Release:**

- Date: December 9, 2019
- ROM Image Checksum: 0xB6848D14
- ME Firmware: Consumer 12.0.40.1433
- EC Firmware: 1.20.09
- PMC Firmware: 300.2.11.1020
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:

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

- Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .ROM File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb
- Additional Microcode Updates included only in.BIO File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Per INTEL QC PRD v1.8 releasing, BIOS update Chassis Info Type from "09h" to "0Ah".
- Fixed SSD device information.
- Fixed performance issues when using battery.
- Updated EC to version 1.20.09.

<b>BIOS Version 0056 - QCCFL357.0056.2019.1030.1000</b>
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**About This Release:**

- Date: October 30, 2019
- ROM Image Checksum: 0xB6883C22
- ME Firmware: Consumer 12.0.40.1433
- EC Firmware: 1.19.09
- PMC Firmware: 300.2.11.1020
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Supported Flash Devices:
  - WinBond W25Q128JV 16MB
- Microcode Updates included in .ROM File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb
- Additional Microcode Updates included only in.BIO File:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Fixed the thunderbolt issue by doing the following:
  - Added a 1 second delay.
  - Disabled HRESET.
  - Did not implement UCM related code.
- Added setup HDD Security.
- Fixed the Q-Key function that would randomly become Fan Boost, so that it is a mode change only.
- Added the setup items in Boot -> Secure Boot:
  - Restore Factory Keys
  - Reset to Setup Mode
- Updated EC to version 1.19.09.

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

**BIOS Version 0048 - QCCFL357.0048.2019.0808.1937**

**About This Release:**

- Date: August 8, 2019
- ROM Image Checksum: 0xB6860E2B
- ME Firmware: Consumer 12.0.40.1433
- EC Firmware: 1.16.09
- PMC Firmware: 300.2.11.1020
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.5.0.4055
  - RAID Option ROM: 17.5.0.4055
- Microcode Updates included in .BIN & .CAP Files:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Updated: EC version to 1.16.09.
- Fixed: Where the system would automatically wake up from sleep even when the lid is closed.
- Updated: EFI BIOS raid driver / Legacy OROM raid driver.
- Added: Support for wake on S3 when the top cover is opened.
- Fixed: No display on restart when using Windows® 10 19H1.

**BIOS Version 0042 - QCCFL357.0042.2019.0708.1015**

**About This Release:**

- Date: July 8, 2019
- ROM Image Checksum: 0xB68A5398
- ME Firmware: Consumer 12.0.40.1433
- EC Firmware: 1.13.09
- PMC Firmware: 300.2.11.1020
- Boot Guard ACM: 4351
- Memory Reference Code: Based on 0.7.1.104
- Integrated Graphics:
  - Option ROM: 9.2.1019
  - UEFI Driver: 9.0.1085
- Intel RST Pre-OS:
  - Option ROM: 17.2.0.3790
  - RAID Option ROM: 17.2.0.3790
- Microcode Updates included in .BIN & .CAP Files:
  - M22906EA\_000000B4.mcb
  - M22906ED\_000000BE.mcb

**New Fixes/Features:**

- Initial production BIOS release

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