



TQMx60EB uEFI BIOS Update Instruction

TQMx60EB BIOS Update 0100
2016-09-12

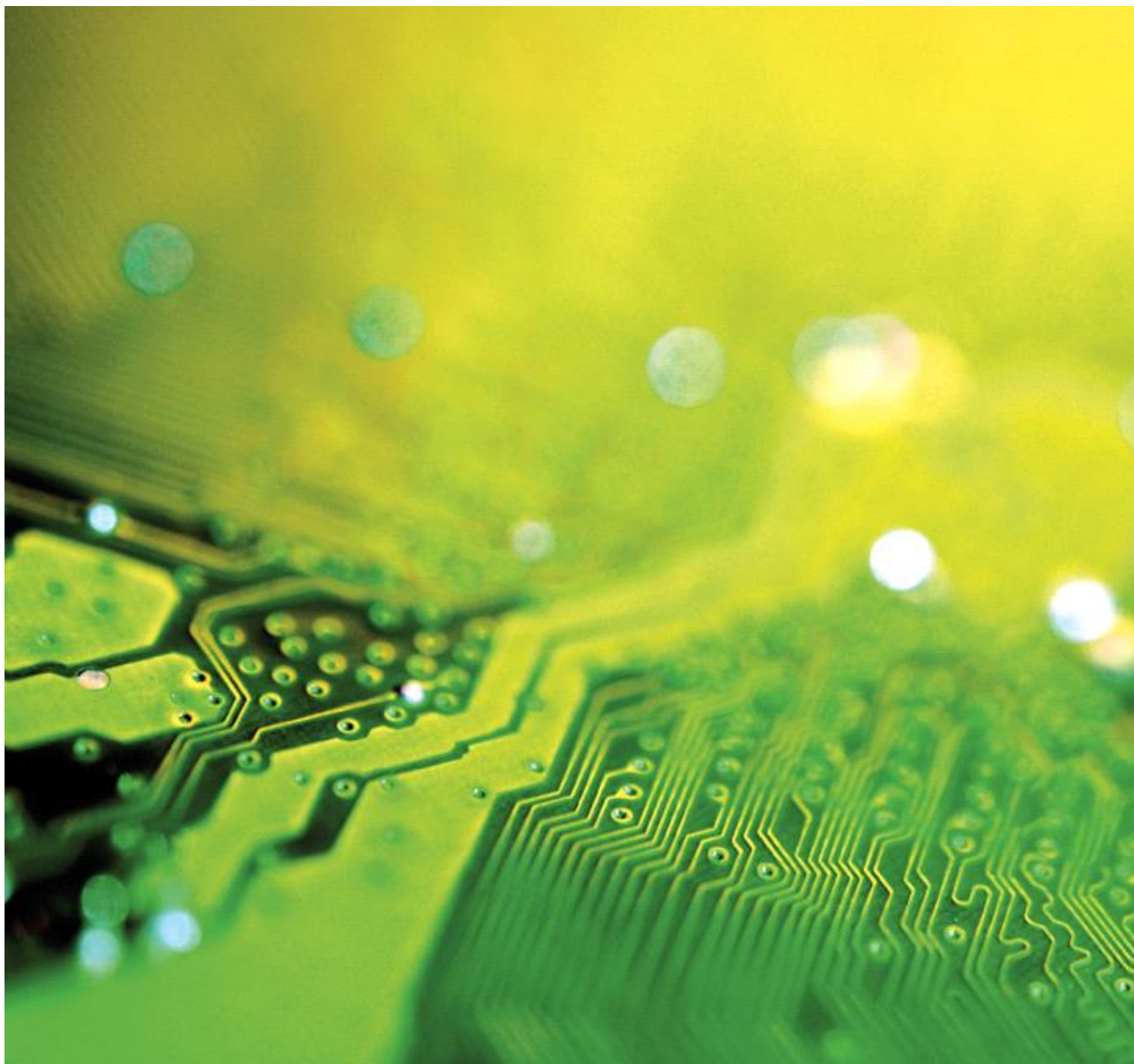


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Update index:

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1.4 Imprint

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1.5 Service and support

Please visit our website www.tq-group.com for latest product documentation, drivers, utilities and technical support.

You can register on our website www.tq-group.com to have access to restricted information and automatic update services.

For direct technical support you can contact our FAE team by email: support@tq-group.com.

Our FAE team can also support you with additional information like 3D-STEP files and confidential information, which is not provided on our public website.

For service/RMA, please contact our service team by email (service@tq-group.com) or your sales team at TQ.



2. UEFI BIOS UPDATE INSTRUCTION

The uEFI BIOS update instruction serves to guarantee a proper way to update the uEFI BIOS on the TQMx60EB module. Please read the entire instructions before beginning the BIOS update. By disregarding the statements you can destroy the uEFI BIOS on the TQMx60EB module.

This document will guide the customer to update the uEFI BIOS on the TQMx60EB module by using the Insyde Flash Firmware Tools.

Please contact support@tq-group.com for more information to the latest uEFI BIOS version for the TQMx60EB module.

Note: Installation procedures and screen shots



Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

2.1 Step 1: Check the Platform Controller Hub (Chipset) Configuration

The TQMx60EB module will be delivered with two different Platform Controller Hub (chipset) configurations. For the Intel® XEON, Core i7 and Core i5 processors the Intel CM23x chipset will be used and for the Intel® Core i3 and Celeron processors the Intel HM17x chipset will be used.

Every chipset configuration requires a separate BIOS version. The BIOS file name includes an extension with *_CM236 or *_HM170.

The populated PCH chip on the TQMx60EB module can be determined via the BIOS Main menu:

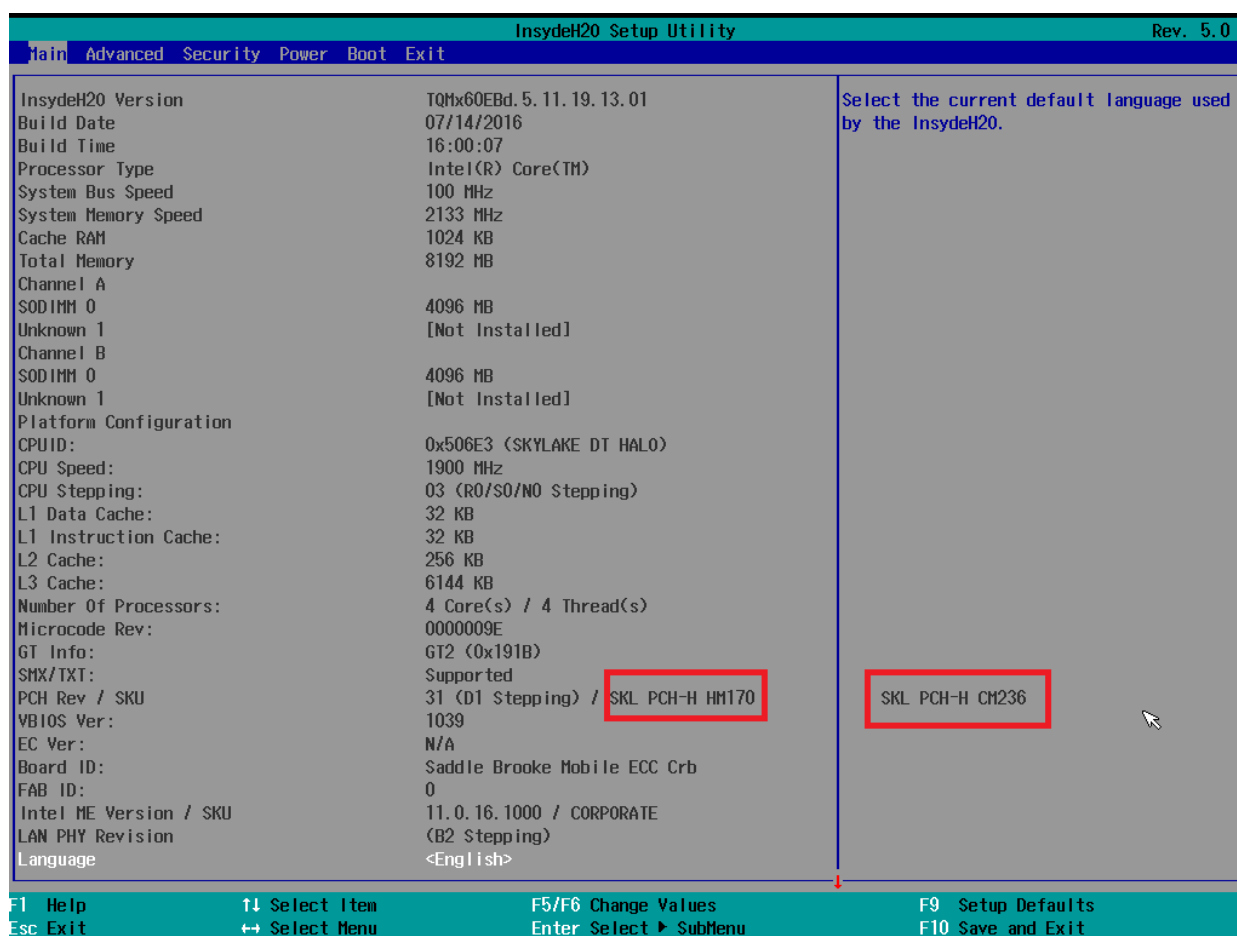


Illustration 1: BIOS Main Menu



2.2 Step 2: Preparing USB Stick

A USB stick with FAT32 format can be used. Copy the following files to the USB stick:

- H2OFFT-Sx64.efi (Flash Firmware Tool from Insyde for update via UEFI Shell)
- InsydeH2OFF_x86_WIN folder (Flash Firmware Tool from Insyde for update via Windows 32-bit system)
- InsydeH2OFF_x86_WINx64 folder (Flash Firmware Tool from Insyde for update via Windows 64-bit system)
- BIOS.bin file e.g. xx_CM236.bin or xx_HM170.bin

2.3 Step 3a: Update uEFI BIOS on the TQMx60EB Module via uEFI Shell

Plug the USB stick into the board you want to update the uEFI BIOS, and turn on the board. The board will boot and go to the internal EFI shell.

```
EFI Shell version 2.50 [22054.4116]
Current running mode 1.1.2
Device mapping table
  fs0      :Removable HardDisk - Alias hd23g0b blk0
            PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x6, 0x0)/HD(1, MBR, 0x304F1DE1, 0x80, 0x7A6800)
  blk0     :Removable HardDisk - Alias hd23g0b fs0
            PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x6, 0x0)/HD(1, MBR, 0x304F1DE1, 0x80, 0x7A6800)
  blk1     :Removable BlockDevice - Alias (null)
            PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x6, 0x0)

Press ESC in 5 seconds to skip startup.nsh, any other key to continue.
Shell>
```

Illustration 2: EFI Shell

The device named "fs0" should be visible, this is the USB stick.

Move operating directory to USB drive with "fs0:"

Then, enter into the BIOS folder (e.g. "cd tqmx60") to execute the Insyde BIOS update tool:

H2OFFT-Sx64.efi <BIOS file _CM236 or _HM170> -bios -all

```
EFI Shell version 2.50 [22054.4116]
Current running mode 1.1.2
Device mapping table
  fs0      :Removable HardDisk - Alias hd23g0b blk0
            PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x6, 0x0)/HD(1, MBR, 0x304F1DE1, 0x80, 0x7A6800)
  blk0     :Removable HardDisk - Alias hd23g0b fs0
            PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x6, 0x0)/HD(1, MBR, 0x304F1DE1, 0x80, 0x7A6800)
  blk1     :Removable BlockDevice - Alias (null)
            PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x6, 0x0)

Press ESC in 5 seconds to skip startup.nsh, any other key to continue.
Shell> fs0:

fs0:\> cd tqmx60

fs0:\tqmx60> H2OFFT-Sx64.efi TQMx60EB_5.11.26.0014.02_x64_cm236.bin -bios -all
```

Illustration 3: EFI Shell uEFI BIOS Update

2.4 Step 3b: Update uEFI BIOS on the TQMx60EB Module via Windows Operating System

Boot the Windows operating system (32-bit or 64-bit) and plug the USB stick into the board you want to update the uEFI BIOS.

Start the Command prompt (CMD), important the Command Prompt must be started in the administrator mode.

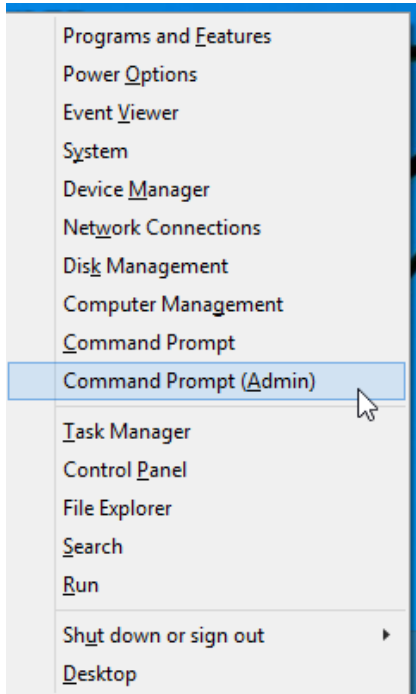


Illustration 4: Windows 10 Command Prompt (Admin)

Select the BIOS update folder with the Insyde Windows 32-bit or 64-bit update tool and execute the Insyde BIOS update tool.

H2OFFT-W.exe <BIOS file _CM236 or _HM170> -bios -all

H2OFFT-Wx64.exe <BIOS file _CM236 or _HM170> -bios -all

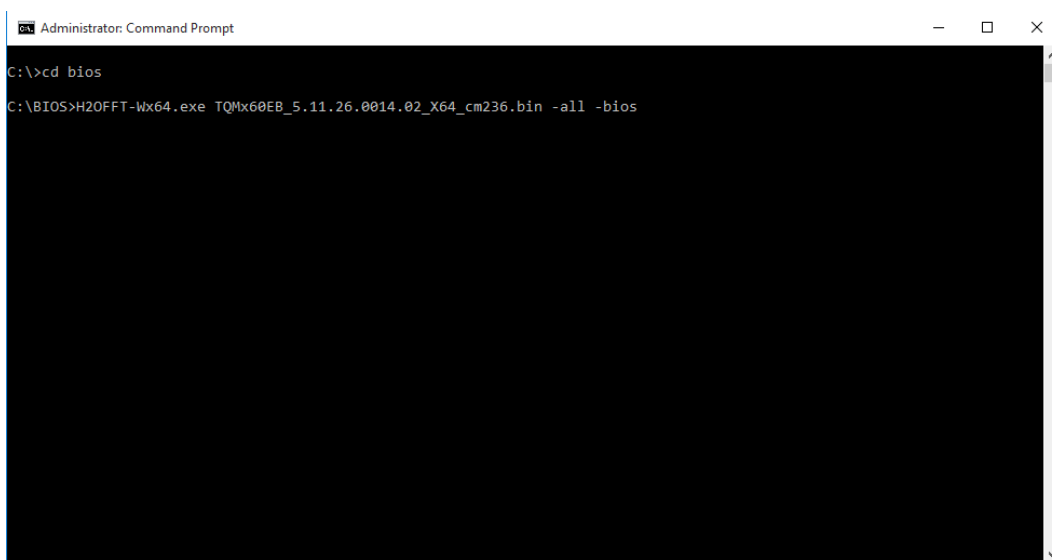
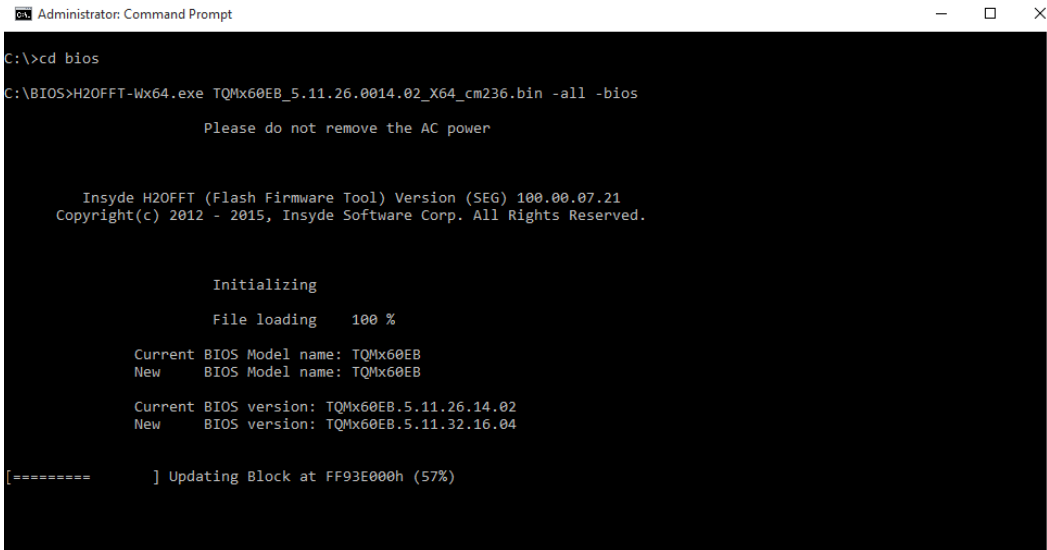


Illustration 5: Windows 10 64-bit BIOS folder

Start the BIOS update with the Insyde Windows 32-bit or 64-bit update tool.



```

Administrator: Command Prompt
C:\>cd bios
C:\BIOS>H2OFFT-Wx64.exe TQMx60EB_5.11.26.0014.02_X64_cm236.bin -all -bios

Please do not remove the AC power

Insyde H2OFFT (Flash Firmware Tool) Version (SEG) 100.00.07.21
Copyright(c) 2012 - 2015, Insyde Software Corp. All Rights Reserved.

Initializing
File loading 100 %

Current BIOS Model name: TQMx60EB
New BIOS Model name: TQMx60EB

Current BIOS version: TQMx60EB.5.11.26.14.02
New BIOS version: TQMx60EB.5.11.32.16.04

[=====] Updating Block at FF93E000h (57%)
  
```

Illustration 6: Windows 10 64-bit BIOS update

2.5 Step 4: BIOS update check on the TQMx60EB Module

After the uEFI BIOS update the new uEFI BIOS configures the complete TQMx60EB hardware and this results in some reboots and the first boot time takes longer (up to 1-2 minutes).

The TQMx60EB module includes a dual colour Debug LED providing boot and uEFI BIOS information. If green LED is blinking the uEFI BIOS is booting if the green LED is on uEFI BIOS boot is finished.

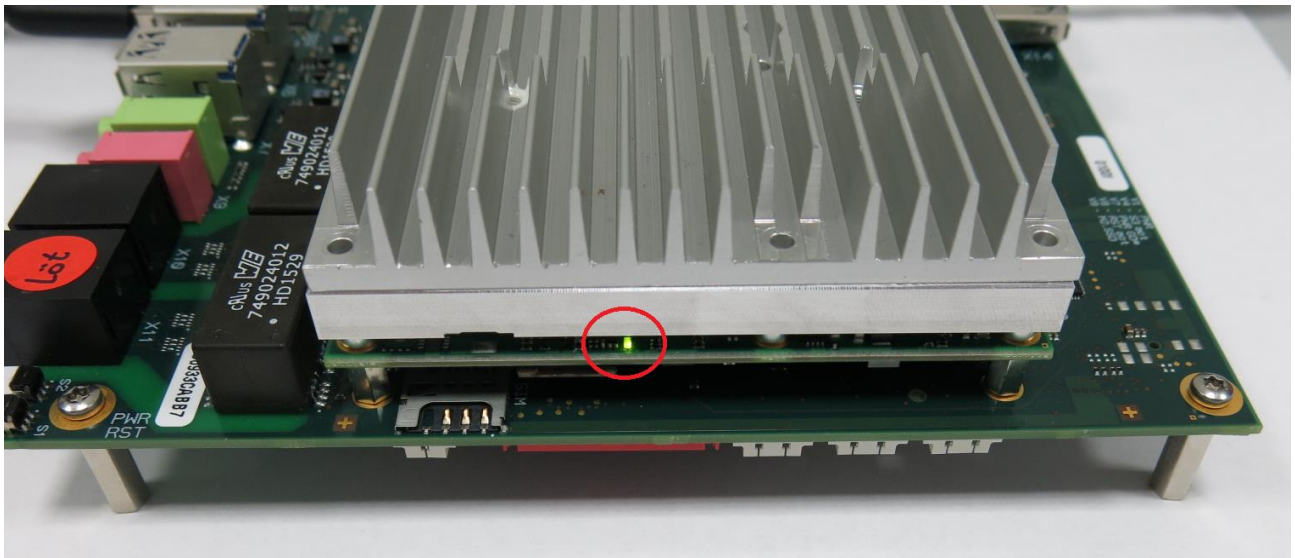


Illustration 7: TQMx60EB green Debug LED

After the uEFI BIOS has been flashed completely, please power off the board, and power on to check whether the uEFI BIOS has been flashed successfully. The BIOS Main menu includes the board and hardware information and it shows the installed BIOS version.

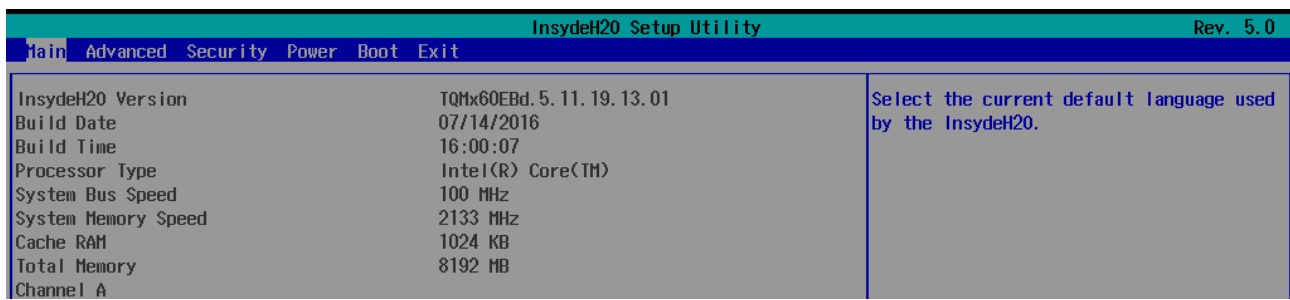


Illustration 8: EFI BIOS Main Menu



3. ME FIRMWARE AND UEFI BIOS UPDATE INSTRUCTION

The ME firmware and uEFI BIOS update instruction serves to guarantee a proper way to update the ME firmware and uEFI BIOS on the TQMx60EB module. Please read the entire instructions before beginning the ME firmware and uEFI BIOS update. By disregarding the statements you can destroy the uEFI BIOS on the TQMx60EB module.

This document will guide the customer to update the ME firmware and uEFI BIOS on the TQMx60EB module by using the Insyde Flash Firmware Tools.

The ME firmware must be only updated if the hardware configuration on the TQMx60EB module has to be changed. e.g. PCI Express lane configuration from 4x1 to 1x4.

Please contact support@tq-group.com for more information to the latest uEFI BIOS version for the TQMx60EB module.

3.1 Step 1: Disable ME Firmware in uEFI BIOS

To update the ME firmware and the uEFI BIOS on the TQMx60EB module the ME firmware must be disabled in uEFI BIOS.

The BIOS Advanced menu includes the **PCH-FW Configuration** menu and it includes a configuration option **Firmware Update Configuration** with **Me FW Image Re-Flash** configuration.

The **Me FW Image Re-Flash** configuration has to be set to enabled. Only for the next boot the ME firmware update is enabled and the ME firmware can be updated.

The uEFI BIOS configuration must be saved with the function key F10 and boot the system.

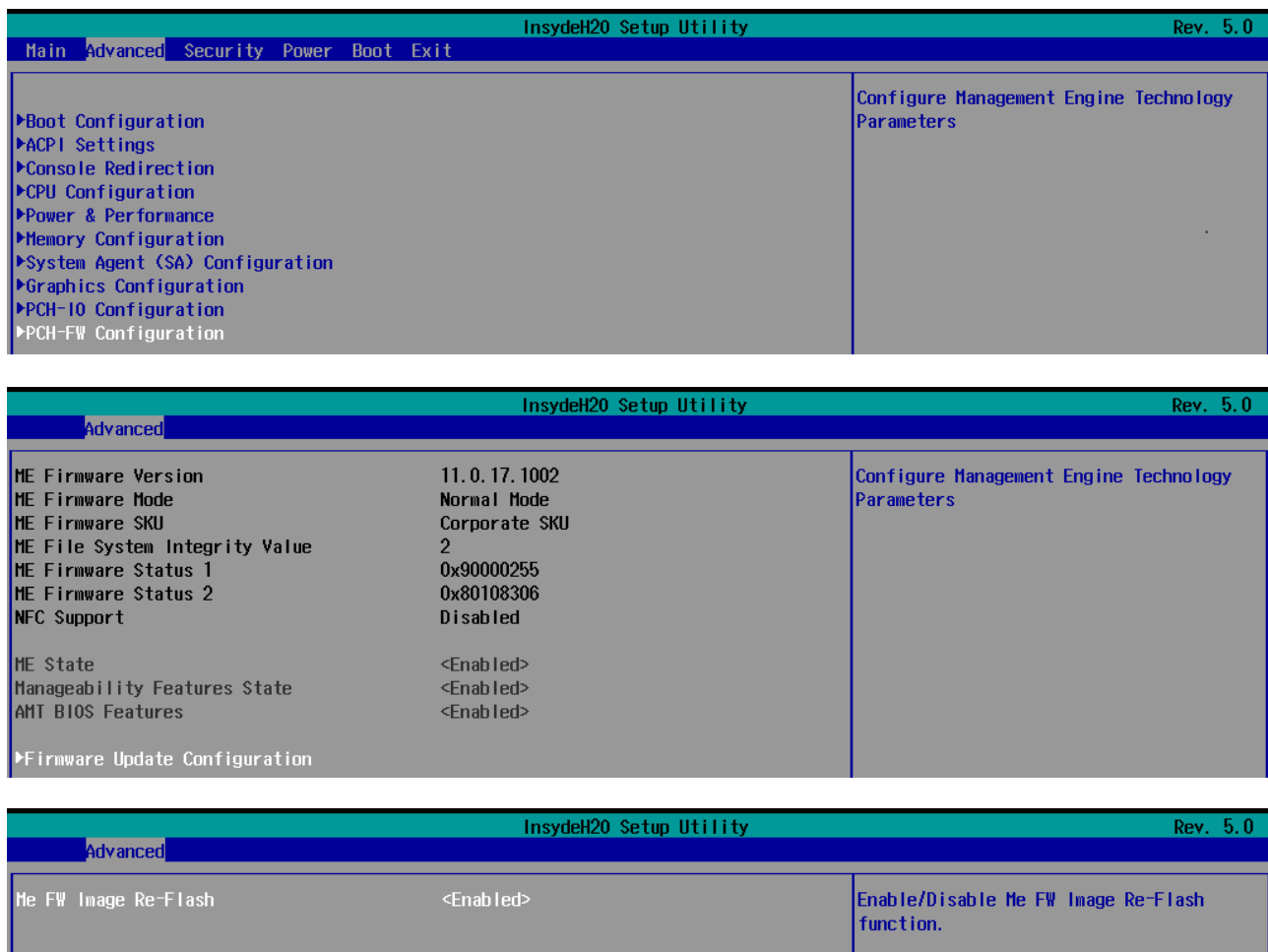


Illustration 9: ME Firmware Update



3.2 Step 2: Check the Platform Controller Hub (Chipset) Configuration

See BIOS update instruction

3.3 Step 3: Preparing USB Stick

See BIOS update instruction

3.4 Step 4: Update ME Firmware and uEFI BIOS on the TQMx60EB Module via uEFI Shell

Plug the USB stick into the board you want to update the uEFI BIOS, and turn on the board, the board will boot and go to the internal EFI shell.

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  blk0     :Removable HardDisk - Alias hd23g0b fs0
            :PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x6, 0x0)/HD(1, MBR, 0x304F1DE1, 0x80, 0x7A6800)
  blk1     :Removable BlockDevice - Alias (null)
            :PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x6, 0x0)

Press ESC in 5 seconds to skip startup.nsh, any other key to continue.
Shell>
```

Illustration 10: EFI Shell

The device named "fs0" should be visible, this is the USB stick.

Move operating directory to USB drive with "fs0:"

Then, enter into the BIOS folder (e.g. "cd tqmx60") to execute the Insyde BIOS update tool:

H2OFFT-Sx64.efi <BIOS file _CM236 or _HM170> -desc -me -bios -all

```
EFI Shell version 2.50 [22065.4118]
Current running mode 1.1.2
Device mapping table
  fs0      :Removable HardDisk - Alias hd24c0b blk0
            :PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x2, 0x0)/HD(1, MBR, 0x304F1DE1, 0x80, 0x7A6800)
  blk0     :Removable HardDisk - Alias hd24c0b fs0
            :PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x2, 0x0)/HD(1, MBR, 0x304F1DE1, 0x80, 0x7A6800)
  blk1     :Removable BlockDevice - Alias (null)
            :PciRoot(0x0)/Pci(0x14, 0x0)/USB(0x2, 0x0)

Press ESC in 5 seconds to skip startup.nsh, any other key to continue.
Shell> fs0:

fs0:\> cd tqmx60

fs0:\tqmx60> H2OFFT-Sx64.efi TQMx60EB_5.11.32.0016.05_X64_cm236.bin -desc -me -bios -all
```

Illustration 11: EFI Shell uEFI BIOS Update

3.5 Step 5: BIOS update check on the TQMx60EB Module

After the uEFI BIOS update the new uEFI BIOS configures the complete TQMx60EB hardware and this results in some reboots and the first boot time takes longer (up to 1-2 minutes).

The TQMx60EB module includes a dual colour Debug LED providing boot and BIOS information. If green LED is blinking the uEFI BIOS is booting if the green LED is on uEFI BIOS boot is finished.

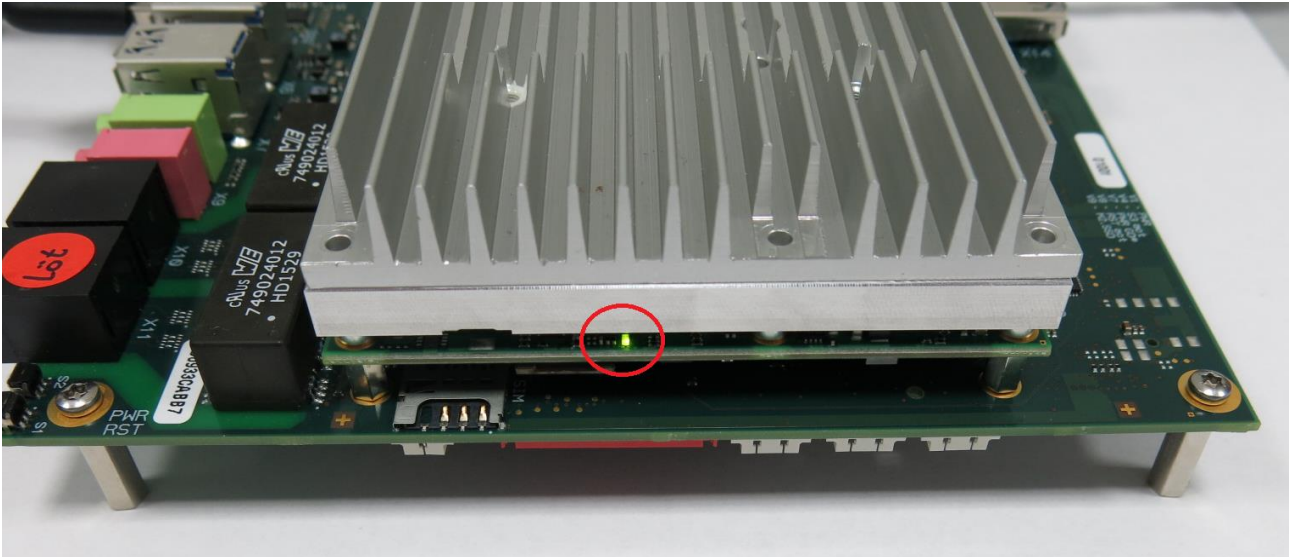


Illustration 12: TQMx60EB green Debug LED

After the uEFI BIOS has been flashed completely, please power off the board, and power on to check whether the uEFI BIOS has been flashed successfully. The BIOS Main menu includes the board and hardware information and it shows the installed BIOS version.

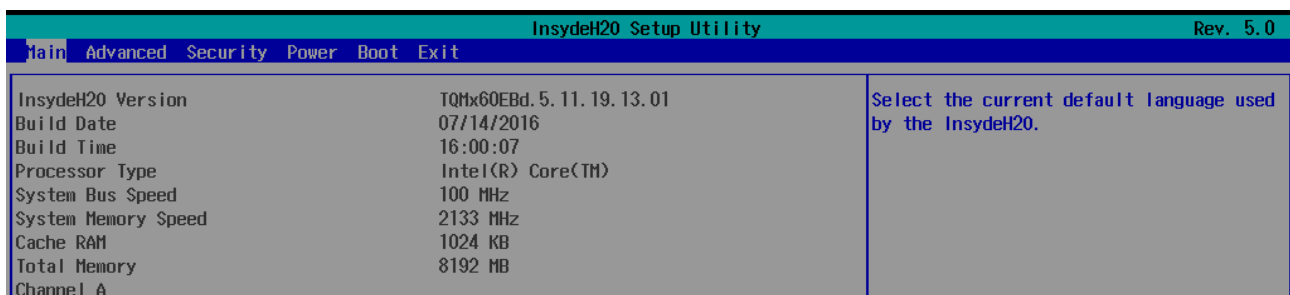


Illustration 13: EFI BIOS Main Menu

