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## AMI BIOS PROGRAMMING WITH BGT

### Revision History

Revision	Date	Author	Changes
1.0	26 <sup>th</sup> November 2019	M.B.	First Release

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## 1 Introduction

It is possible to access to the Setup Utility by pressing **ESC** key after System power Up, during the POST phase. The System BIOS version is shown on “Main” page, in “BIOS Version” item.

In case of new releases, the last one is always present on SECO website. The BIOS update package will always contain the latest BIOS image file and the programming tools BGT (AMI BIOS Guard Firmware Update Tool); this program is distributed in the following versions:

- BgtEfi.efi      *EFI Shell 32-bit programming utility*
- BgtEfix64.efi    *EFI Shell 64-bit programming utility*
- BgtWin.exe    *Windows 32-bit BIOS programmer*
- BgtWinx64.exe      *Windows 64-bit BIOS programmer*

**NOTE:** Please be aware that using Windows BIOS programmer, they must be run with admin privileges.

**WARNING:** Reprogramming the board's BIOS is a critical operation.

**DO NOT reset or turn off the system or remove AC power while BIOS update operation is in progress,** otherwise this may lead to a not working board!

It is also worth noting that the first reboot after reprogramming may be slower due to some other operation as flash re-initialization or embedded controller reprogramming, so it is necessary to wait for the complete boot with this new BIOS (Boot to setup menu or to a OS image) before considering the operation as completed!

**WARNING:** BGT is a very powerful tool which allows a wide range of operations in addition to BIOS reprogramming and most of them could not be supported by the platform. **SECO cannot be responsible for any change made to the original BIOS with an improper and undocumented use of this tool.**

Please, be aware that any operation rather than reprogramming BIOS as documented in this manual may lead to a not working board.

**WARNING:** Only official SECO BIOS are supported for a BIOS update operation; custom homemade images obtained as example with a dump of the content of a BIOS flash from another system are not supported and must not be used! **Any attempt to program a different image rather than the ones available on the SECO website or provided by SECO itself may lead to a not working board!**

**WARNING:** **Downgrade operation is not supported by AMI BGT tools.**

A downgrade operation occurs when the programming tools are used to switch from the current BIOS version to a previous and older one.

A new BIOS version may contain updates to critical parts, as the TXE or the microcode and there could be some critical issues when BGT tries to revert these components to a previous version, issues that may lead to a not working board!

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## 2 System BIOS update using EFI Shell

This procedure requires a USB drive formatted to FAT32. Please see [HowToCreateEFIUSB.pdf](#)

1. Copy the updater tool and the BIOS binary file inside the USB drive
2. Turn on the system for entering in the Aptio Setup Utility by pressing the ESC key
3. Under *Advanced>PCH-FW Configuration>Firmware Update Configuration* menu enable *Me FW Image Re-Flash* option. Save this configuration pressing F4.



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**REMARK:** This is a one shot setting, so boot priority should be changed in order not to repeat step 3. Under Boot menu select as *Boot Option #1* the USB key where BGT utility is.

- From the Device mapping table identify the filesystem of the USB drive fs\* (it will be marked as a "Removable HardDisk")

```
EFI Shell version 2.50 [5.12]
Current running mode 1.1.2
Device mapping table
fs0 :HardDisk - Alias hd25d blk0
      PciRoot(0x0)/Pci(0x1C,0x0)/SD(0x0)/HD(3,GPT,FECD6C41-9C21-4066-95A8-DCA486648EE4,0x121800,0x32000)
fs1 :Removable HardDisk - Alias hd18d0b0a0b blk1
      PciRoot(0x0)/Pci(0x15,0x0)/USB(0x3,0x0)/USB(0x1,0x0)/USB(0x0,0x0)/HD(1,MBR,0x58E5FC01,0x800,0x1D4B800)
blk0 :HardDisk - Alias hd25d fs0
      PciRoot(0x0)/Pci(0x1C,0x0)/SD(0x0)/HD(3,GPT,FECD6C41-9C21-4066-95A8-DCA486648EE4,0x121800,0x32000)
blk1 :Removable HardDisk - Alias hd18d0b0a0b fs1
      PciRoot(0x0)/Pci(0x15,0x0)/USB(0x3,0x0)/USB(0x1,0x0)/USB(0x0,0x0)/HD(1,MBR,0x58E5FC01,0x800,0x1D4B800)
blk2 :HardDisk - Alias (null)
      PciRoot(0x0)/Pci(0x1C,0x0)/SD(0x0)/HD(1,GPT,D72B4D49-1723-4187-952D-5D377ABB01B7,0x22,0x40000)
blk3 :HardDisk - Alias (null)
      PciRoot(0x0)/Pci(0x1C,0x0)/SD(0x0)/HD(2,GPT,7BC74D0E-EDFB-4850-AEC3-DAA69E296AD5,0x40800,0xE1000)
blk4 :HardDisk - Alias (null)
      PciRoot(0x0)/Pci(0x1C,0x0)/SD(0x0)/HD(4,GPT,5B6F0DEF-658C-4AC2-AC92-D9D5DC6C49F0,0x153800,0x35AC000)
blk5 :BlockDevice - Alias (null)
      PciRoot(0x0)/Pci(0x1C,0x0)/SD(0x0)
blk6 :Removable BlockDevice - Alias (null)
      PciRoot(0x0)/Pci(0x15,0x0)/USB(0x3,0x0)/USB(0x1,0x0)/USB(0x0,0x0)

Press ESC in 1 seconds to skip startup.nsh, any other key to continue.

Shell>
```

Example of device mapping table. The USB drive file system is identified as "fs1"

- Enter in the USB drive file system fs\*:
- Move to the folder where BGT utility and the BIOS binary are placed and launch the command:  
`update.nsh biosName.xxx`  
Where `biosName.xxx` is the name of the new BIOS that must be loaded inside the flash.
- After the program advises the correctness of operation, the board can be rebooted

### 3 System BIOS update using Windows

1. Turn on the system for entering in the Aptio Setup Utility by pressing the ESC key
2. Under *Advanced>PCH-FW Configuration menu>Firmware Update Configuration* enable MeFW Image Re-Flash option. Save this configuration pressing F4.



**REMARK:** This is a one shot setting, so boot priority should be changed in order not to repeat step 3. Under Boot menu select as *Boot Option #1* the device where Windows is.

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3. Copy the updater tool and the BIOS binary file in a folder of the Windows Disk.
4. Run the "cmd" shell with Administrator privileges
5. Move to the folder where BGT utility and the firmware file are placed and launch the command:  
`update.bat biosName.xxx`

Where `biosName.xxx` is the name of the new BIOS that must be loaded inside the flash.

6. After the program advises the correctness of operation, the board can be rebooted

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