

AMI BIOS PROGRAMMING USING AFU

Revision History

Revision	Date	Author	Changes
1.0	22 th January 2018	G.G.	First Release
1.1	3 rd May 2018	G.G.	Updated document template

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1 Introduction

Some SECO boards and modules are supplied with an AMI UEFI BIOS.

It is possible to access to the Setup Utility by pressing <ESC> key after System power Up, during the POST phase.

The “Aptio Setup Utility” Menu will appear.

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 websites.

The BIOS update package will always contain the latest BIOS image file and the programming tools AFU (AMI Firmware Update); this program is distributed in the following versions:

- **AfuEfix64.efi** EFI Shell programming utility
- **AFUWIN.EXE** Windows 32-bit BIOS programmer
- **AFUWINx64.EXE** Windows 64-bit BIOS programmer

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

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

DO NOT turn off the system or remove AC power while the BIOS update operation is in progress, otherwise this 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.

- 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) From the “Save & Exit” page select the Boot Override option “UEFI: Built-in EFI Shell”
- 4) 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”

- 5) Enter in the USB drive file system fs*:
For the example above where USB drive is fs1 the command will be fs1:
- 6) Move to the folder where AFU utility and the firmware file are placed and launch the command:
bios_update <biosName.xxx>
Where <biosName.xxx> is the name of the new BIOS that must be loaded inside the flash.
- 7) After the program advises the correctness of operation, the board can be rebooted

```
-----
      AMI Firmware Update Utility v5.09.04.1503
      APL Normal Mode
      Copyright (C)2017 American Megatrends Inc. All Rights Reserved.
-----
Reading flash ..... done
Secure Flash enabled, recalculate ROM size with signature... Enable.
- FFS checksums ..... ok
Loading capsule to secure memory buffer ... done
Erasing Main Block ..... done
Updating Main Block ..... done
Verifying Main Block ..... done
Erasing NVRAM Block ..... done
Updating NVRAM Block ..... done
Verifying NVRAM Block ..... done
Erasing RomHole Block ..... done
Updating RomHole Block ..... done
Verifying RomHole Block ..... done
Please reboot the system
```

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3 System BIOS update using Windows

- 1) Copy the updater tool and the BIOS binary file in a folder of the Windows Disk.
- 2) Run the “cmd” shell with Administrator privileges
- 3) Move to the folder where AFU utility and the firmware file are placed and launch the command:
`bios_updater_x32 <biosName.xxx>` for 32-bit versions of Windows
`bios_updater_x64 <biosName.xxx>` for 64-bit versions of Windows
Where <biosName.xxx> is the name of the new BIOS that must be loaded inside the flash.
- 4) After the program advises the correctness of operation, the board can be rebooted

```
+-----+
|               AMI Firmware Update Utility  v5.09.04.1503               |
|               APL Normal Mode                                         |
|       Copyright (C)2017 American Megatrends Inc. All Rights Reserved. |
+-----+
Reading flash ..... done
Secure Flash enabled, recalculate ROM size with signature... Enable.
- FFS checksums ..... ok
Loading capsule to secure memory buffer ... done
Erasing Main Block ..... done
Updating Main Block ..... done
Verifying Main Block ..... done
Erasing NVRAM Block ..... done
Updating NVRAM Block ..... done
Verifying NVRAM Block ..... done
Erasing RomHole Block ..... done
Updating RomHole Block ..... done
Verifying RomHole Block ..... done
Please reboot the system
```

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