How to update ODROID-H2's BIOS firmware

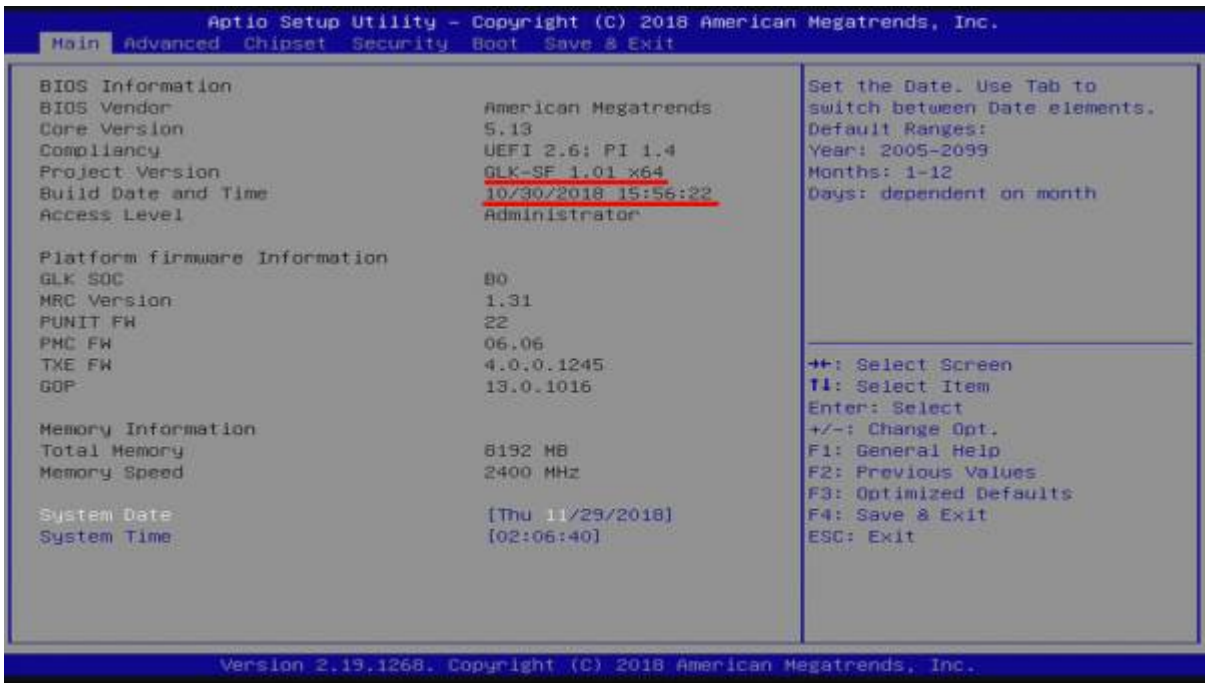
Requirments

- USB memory stick
- BIOS F/w and update Tools

Check your BIOS firmware version

Enter the BIOS

1. Power off your **ODROID-H2**.
2. Press the Power button on your **ODROID-H2**, then Press “DEL” key while booting.
3. Check the Project Version and Build Date.

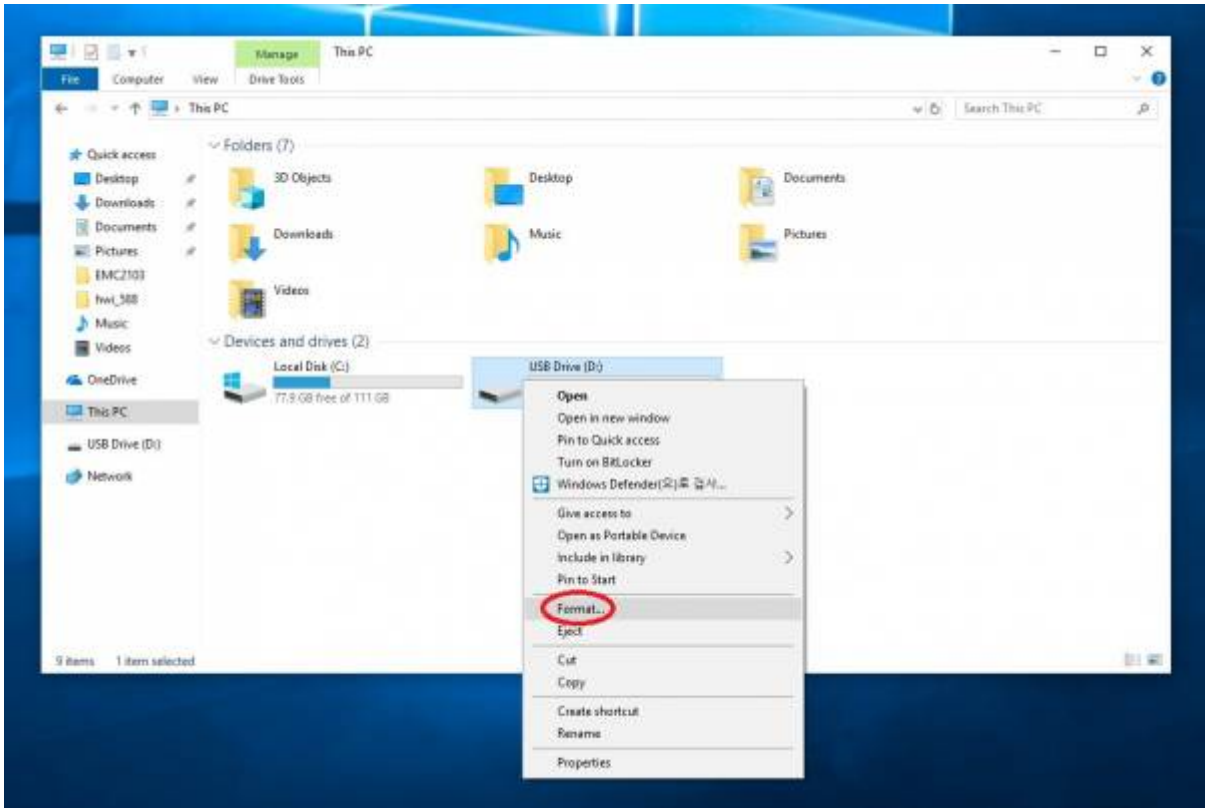


Make your USB stick for updating BIOS

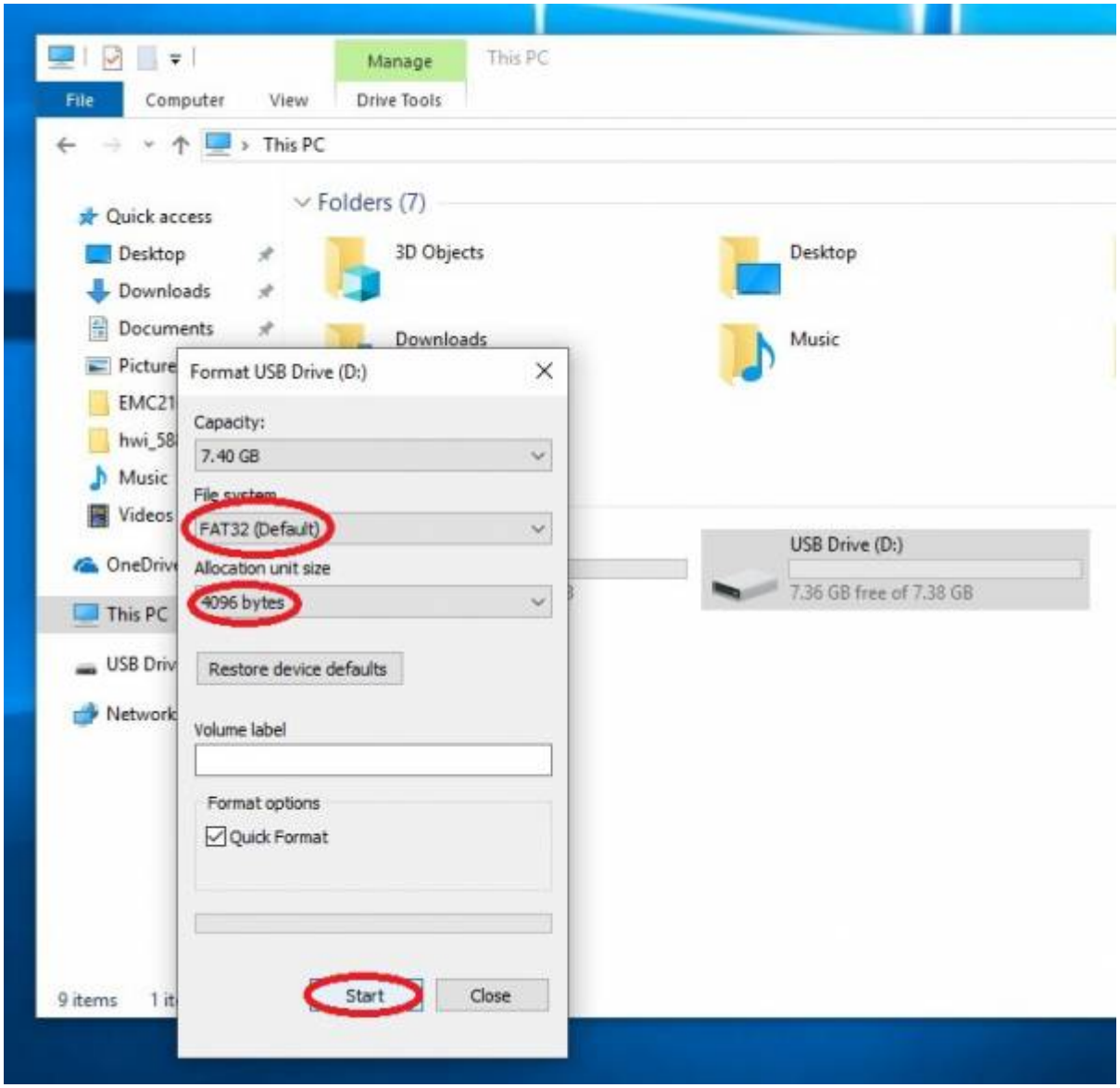
Format your USB stick to FAT32 filesystem

Windows

1. Insert your memory stick to your PC
2. Click right mouse button on your memory drive, then click the **Format...** menu.

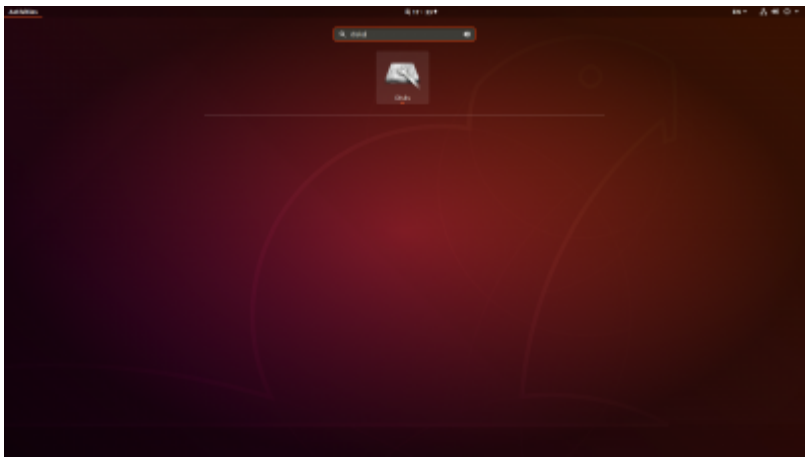


3. Set the parameters like the following screenshot, and then click **Start** button.

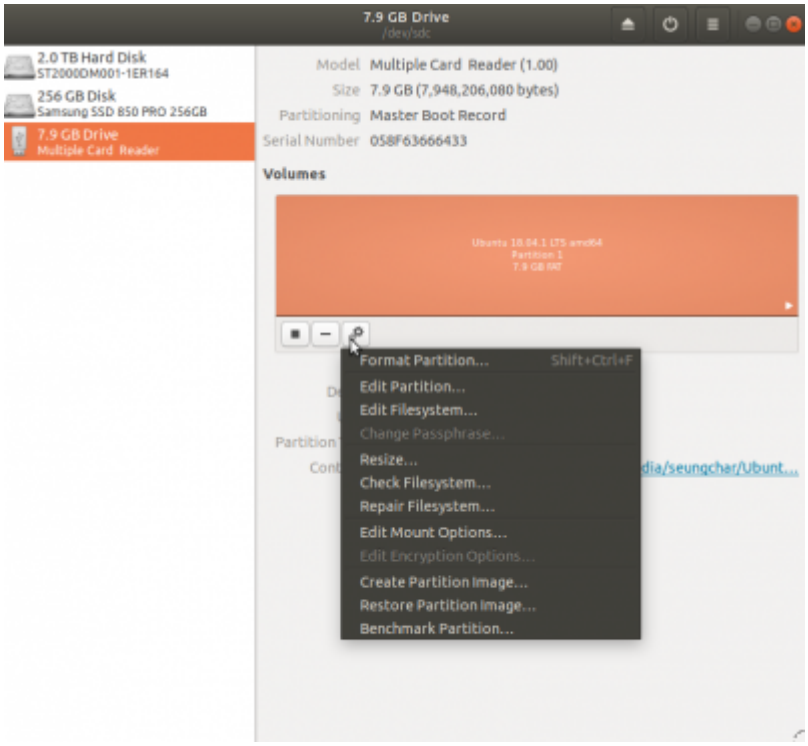


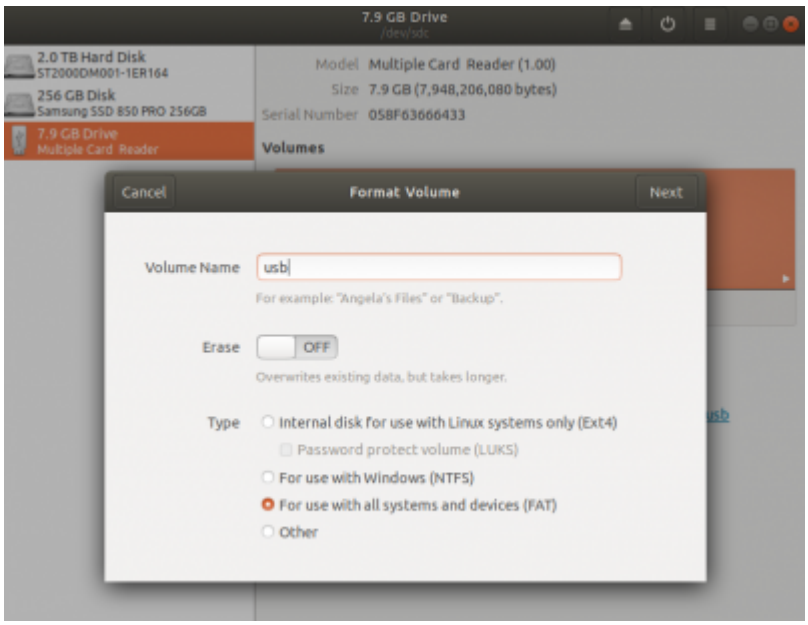
Ubuntu

1. Insert your memory stick to your PC
2. Run Disks util.



3. Format partition to FAT

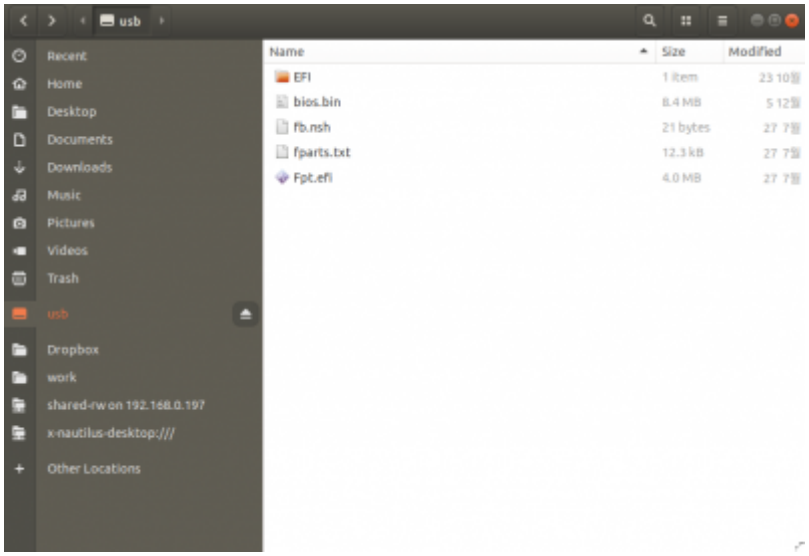




Copy the BIOS update tool and the latest BIOS firmware to your USB stick

You can find the BIOS firmware to this link. https://dn.odroid.com/ODROID-H2/bios/

Download & unzip the latest firmware. And Copy the files then make sure the USB stick has the files as the following screenshot.



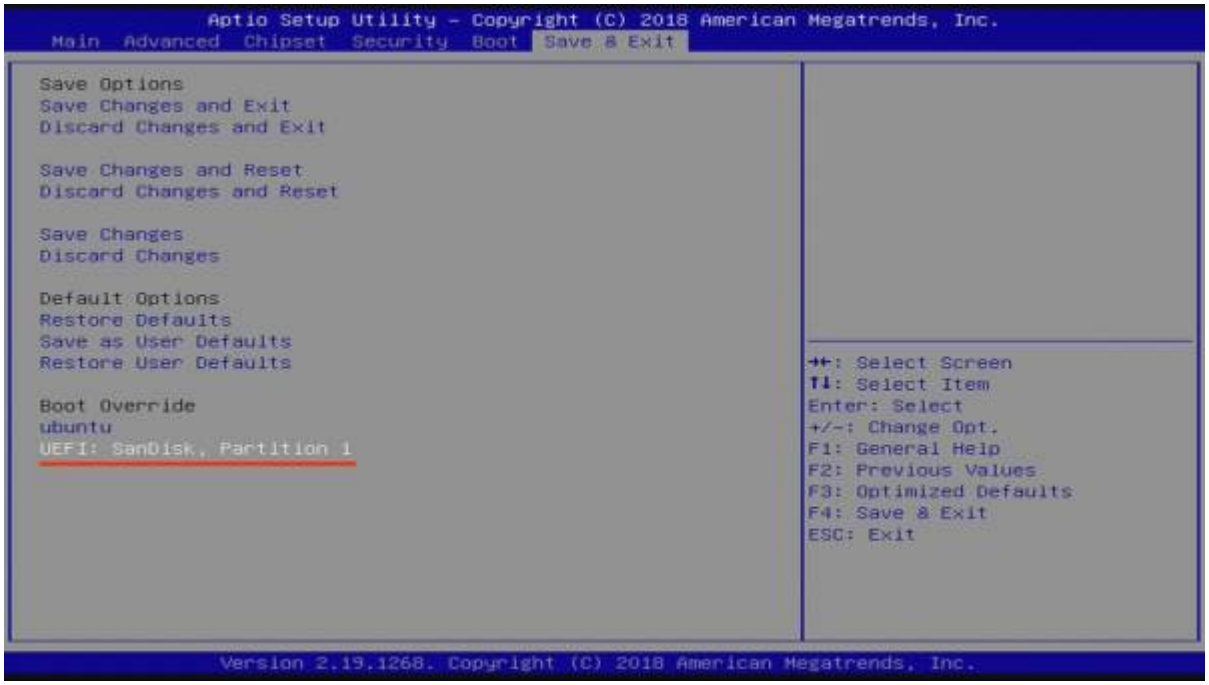
Update to the latest BIOS

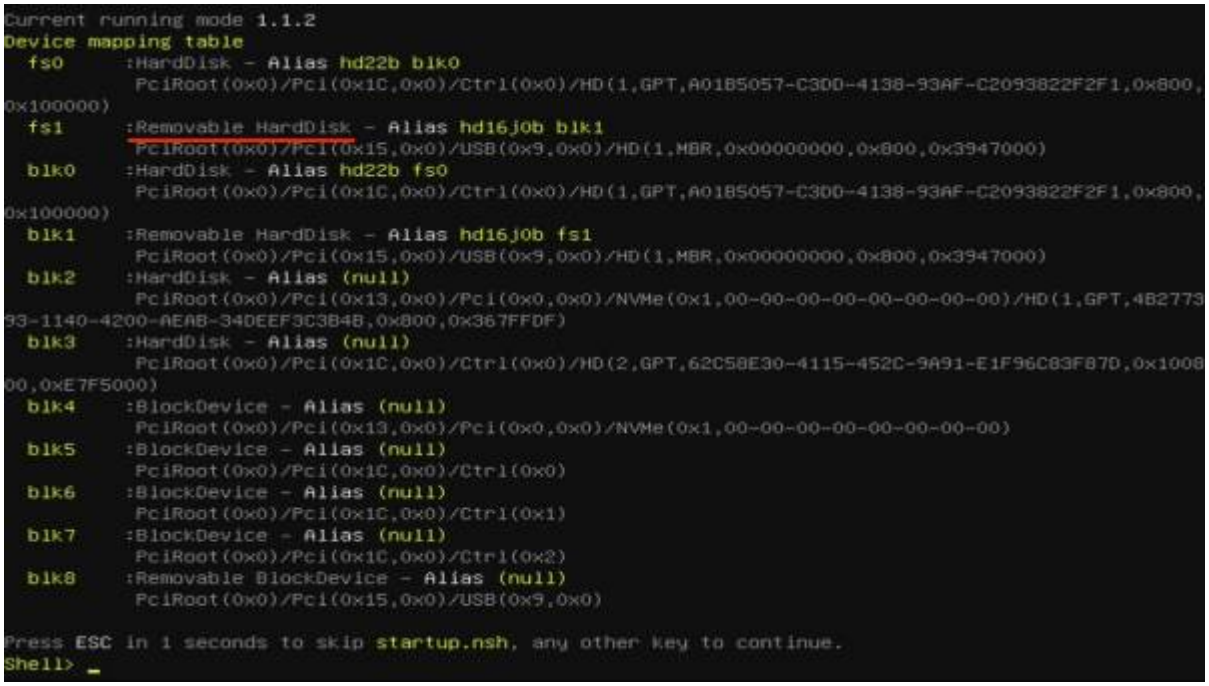
Enter the BIOS

1. Power off your **ODROID-H2**.
2. Press the Power button on your **ODROID-H2**, then Press “DEL” key while booting.
3. Move to **“Save & Exit”** tab.

Enter an EFI shell and Run a fb.nsh

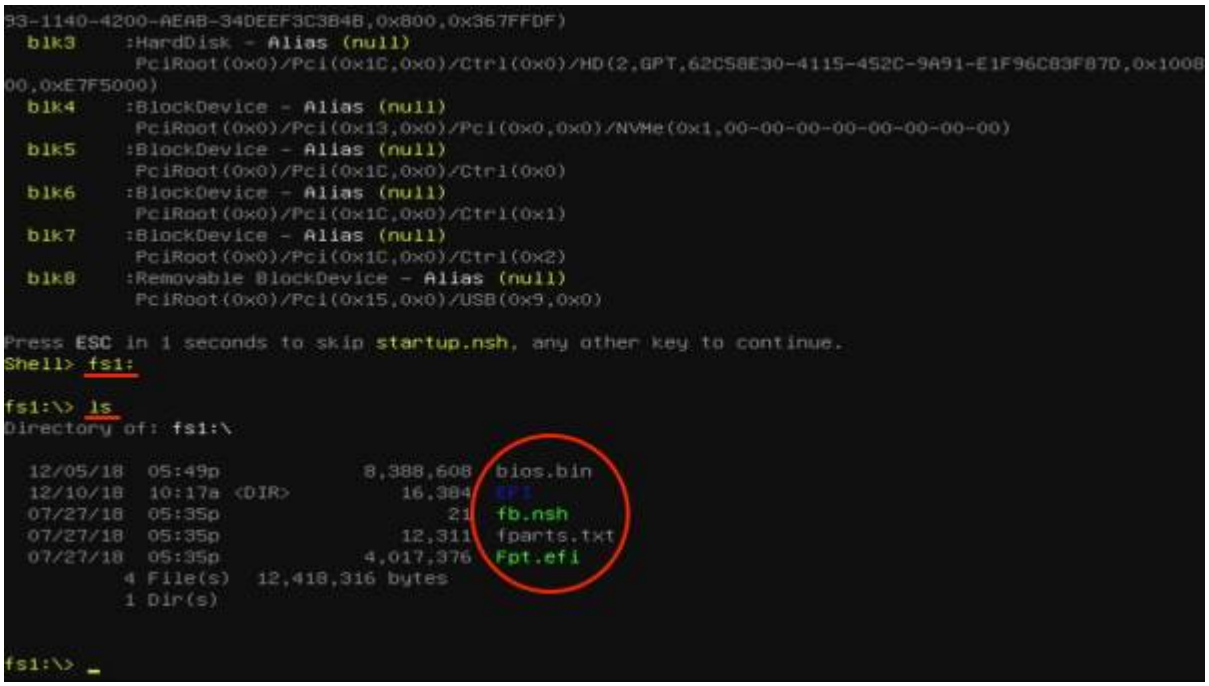
Select **“Boot Override”** → **“UEFI: {USB Disk}“** to boot from the USB stick.





Find the fs node of your memory stick

Enter **fs0:** or **fs1:** etc... which is marked as **Removable HardDisk**.
To ensure that you select a proper disk, enter **ls** and see the files on the root directory of the disk.



Run the "fb.nsh" command

> Do not turn off your **ODROID-H2** while the BIOS is updating.

```
          PciRoot(0x0)/Pci(0x1C,0x0)/Ctrl(0x2)
  blk8    :Removable BlockDevice - Alias (null)
          PciRoot(0x0)/Pci(0x15,0x0)/USB(0x9,0x0)

Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell> fs1:

fs1:\> ls
Directory of: fs1:\

  12/05/18  05:49p           8,388,608  bios.bin
  12/10/18  10:17a <DIR>        16,384  EFI
  07/27/18  05:35p                21  fb.nsh
  07/27/18  05:35p            12,311  fparts.txt
  07/27/18  05:35p         4,017,376  Fpt.efi
         4 File(s)  12,418,316 bytes
         1 Dir(s)


fs1:\> fb.nsh
fb.nsh> fpt.efi -f bios.bin

Intel (R) Flash Programming Tool. Version:  4.0.0.1247
Copyright (c) 2007 - 2018, Intel Corporation. All rights reserved.
Reading HSFSTS register... Flash Descriptor: Valid

        --- Flash Devices Found ---
        GD25LQ64C       ID:0xC86017     Size: 8192KB (65536Kb)


- Reading Flash [0x015C2C0]  1392KB of  8192KB -  17 percent complete.
```

You can see the results like the screenshot below when the update is finished.

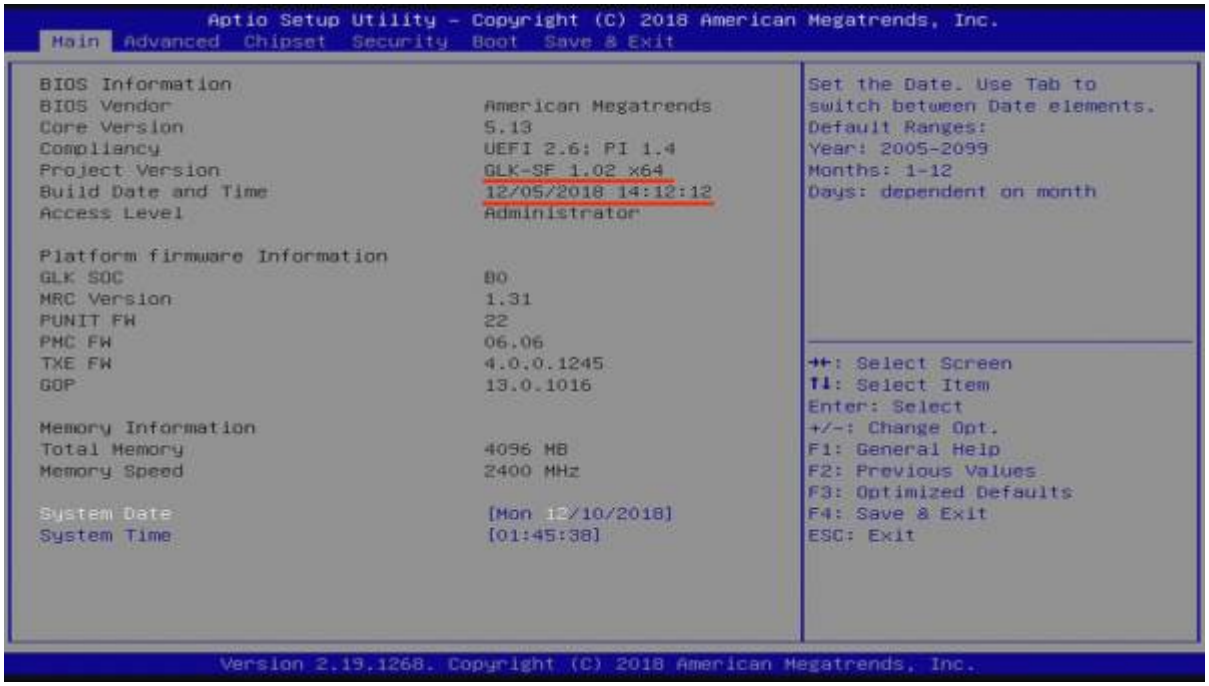
```
- Programming Flash [0x07CA000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7CC000] - 100 percent complete.
- Programming Flash [0x07CC000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7CE000] - 100 percent complete.
- Programming Flash [0x07CE000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7D0000] - 100 percent complete.
- Programming Flash [0x07D0000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7D2000] - 100 percent complete.
- Programming Flash [0x07D2000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7D4000] - 100 percent complete.
- Programming Flash [0x07D4000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7D6000] - 100 percent complete.
- Programming Flash [0x07D6000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7D8000] - 100 percent complete.
- Programming Flash [0x07D8000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7DA000] - 100 percent complete.
- Programming Flash [0x07DA000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7DC000] - 100 percent complete.
- Programming Flash [0x07DC000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7DE000] - 100 percent complete.
- Programming Flash [0x07DE000]     4KB of     4KB - 100 percent complete.
- Erasing Flash Block [0x7E8000] - 100 percent complete.
- Programming Flash [0x07E8000]    36KB of    36KB - 100 percent complete.
- Erasing Flash Block [0x7F9000] - 100 percent complete.
- Programming Flash [0x07F9000]    64KB of    64KB - 100 percent complete.
- Verifying Flash [0x0800000]  8192KB of  8192KB - 100 percent complete.
RESULT: The data is identical.

FPT Operation Successful.

fs1:\> _
```

Reboot and Check the updated BIOS version

Then reboot ODROID-H2. You can just turn off that by pressing the power button.



BIOS Release

- BIOS files and update Tools

GLK-SF 1.07

- Project Version: GLK-SF 1.07
- Build Date and Time: 08/09/2019 10:25:45

Changes

- Enable the system fan as default.
- Disable the Serial Port Console Redirection as default because of decrease the resolution on BIOS.

GLK-SF 1.06

- Project Version: GLK-SF 1.06
- Build Date and Time: 08/01/2019 11:32:11

Changes

- Add Serial Port Console Redirection. And the feature enabled as default.

GLK-SF 1.05

- Project Version: GLK-SF 1.05
- Build Date and Time: 05/10/2019 15:04:37

Changes

- Hide inaccessible I2C ports in the Gemini-Lake SoC. Two I2C ports on the 20pin header are still accessible. This BIOS update is a sort of cosmetic improvement.

GLK-SF 1.04

- Project Version: GLK-SF 1.04
- Build Date and Time: 04/26/2019 17:41:38

Changes

- Add a menu for checking the installed eMMC card information (Chipset → South cluster configuration → SCC configuration)
- Add a menu of PCIe clock gating option to support the PCIe-SATA bridge board (SETUP → Chipset → South Cluster Configuration → PCI Express Configuration → PCI Express Clock Gating) The default value is “Enable” to activate the NVMe storage. If you want to use a PCIe-SATA bridge board, you need to select “Disable”.

GLK-SF 1.03

- Project Version: GLK-SF 1.03
- Build Date and Time:12/19/2018 17:41:38

Changes

- Add a feature to override out-of-spec timing of the DDR4 interface to improve the memory module compatibility.

GLK-SF 1.02

- Project Version: GLK-SF 1.02
- Build Date and Time: 12/05/2018 14:12:12

Changes

- Add PWM Fan control

GLK-SF 1.01

- Project Version: GLK-SF 1.01
- Build Date and Time: 12/05/2018 14:12:12

Changes

- The first production BIOS