



Intel® Firmware Engine Platform Release Notes

Leaf Hill Platform Release 1.1 – Designed for Intel® Firmware Engine 5.0
September 18, 2018

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FILE LIST

`"Leaf_Hill_Platform_Release_Note_1.1.pdf"`

This File. The release notes for the Leaf Hill Platform install package. Note that Intel® Firmware Engine 5.0 must be installed first.

`"LeafHill_PlatformSetup_1_1.exe"`

Windows install package for Leaf Hill platform.

INSTALL INSTRUCTIONS

Windows*

1. Install Intel® Firmware Engine Release 5.0 ([Intel® Firmware Engine R5.0.zip](#)) if it is not already installed. Follow the getting started steps in the Intel® Firmware Engine quick start guide ([Quick start guide eng.pdf](#)).
2. Right click on the "LeafHill_PlatformSetup_1_1.exe" file and select "Run as Administrator" then follow the dialogues to finish the install.
3. After installation, open Intel® Firmware Engine 5.0 and select 'New Project ...' from the File dialogue. Under 'Source project', verify 'LeafHill_Platform' appears as option in the drop-down box.

NEW FEATURES AND CHANGES

1. Installer Repository updated for Intel® Firmware Engine Release 5.0
2. Support Oxbow Hill Rev-E board.

PLATFORM DEPENDENT CONFIGURATION

How to enable a “User Setup” (“BIOS Setup”) menu (example using Leaf Hill Rev-D):

1. Open ‘Components->Firmware applications’.
2. *Drag and Drop* the “UiApp module” Into the box labeled “Added applications list”.
3. Click the “Build” button to generate a new firmware binary image (.FD file).
4. Flash the new image on the Leaf Hill Rev-D.
5. To go to “Setup” menu on Leaf Hill Rev-D.
 - a. Boot up to the UiApp.
 - b. Select “Device Manager”.

How to enable UEFI Secure Boot (example using Leaf Hill Rev-D):

1. Under Project -> Properties -> Settings, enable the “Enable Variable Authentication Support” and “Enable Image Authentication Support” options.
2. Open ‘Components->Firmware applications’.
3. *Drag and Drop* the “UiApp Module” Into the box for “Added applications list”.
4. Click the Build button to generate the FD file.
5. Flash FD image to the Leaf Hill Rev-D.
6. To Enable Secure Boot on Leaf Hill Rev-D using the UiApp:
 - a. Boot up to the UiApp.
 - b. In order to enable the “Custom” Secure Boot menu, the low speed expansion connector J6B2 Pins 4 and 18 need to be shorted. Use a jumper wire to connect pins 4-18 together as shown in the figure below



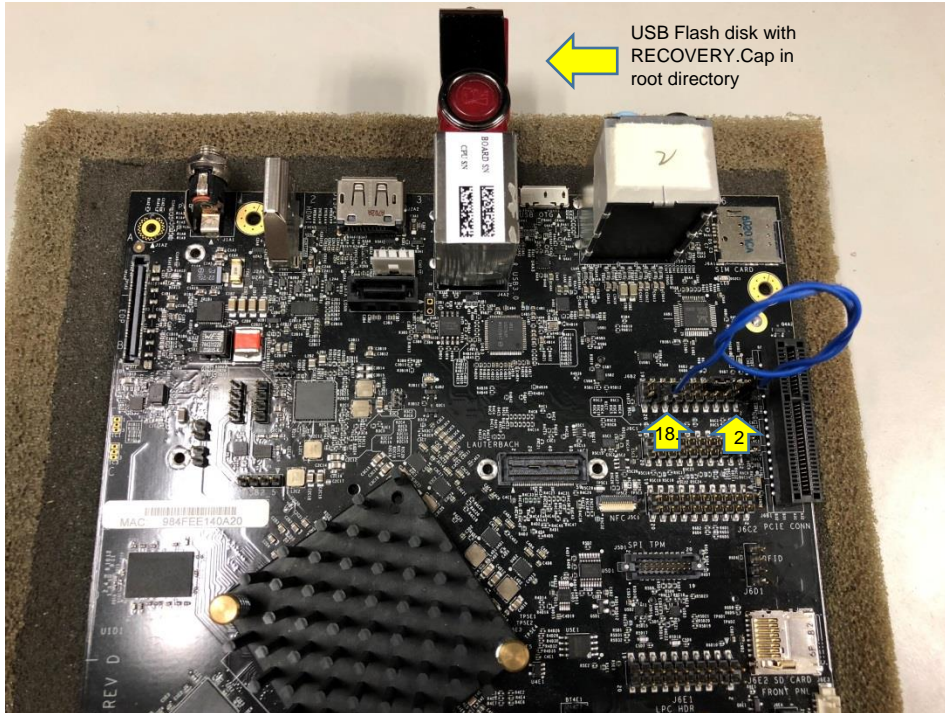
7. Boot up to the UiApp.
8. Enter the UiApp -> Device Manager -> Secure Boot configuration page 3
9. Change “Secure Boot Mode “ to “Custom Mode”
10. Enter “Custom Secure Boot Options” menu item and there will be options to modify PK, KEK, DB, DBX and DBT.
11. To enable the UEFI secure boot certificates for PK, KEK, DB, DBX and DBT, download the following document :

https://github.com/tianocore-docs/Docs/blob/master/User_Docs/SigningUefiImages%20v1dot31.pdf

Follow the instructions in section 1.9.4 of the downloaded user document for how to enable UEFI Secure Boot.

How to enable Secure Recovery (example using Leaf Hill Rev-D):

1. Under Project -> Properties -> Settings, enable the "Enable Recovery File Generation". Choose setting "RSA 2048 SHA 256 based authentication using a test signing key" in "Firmware Recovery and Firmware Update Authentication Support" option.
2. Connect 'USB Flash Drive' component to 'Intel Atom(R) x5-E3900 processor series', right click 'USB Flash Drive' properties, under 'Enable OS Boot and/or Recovery Support', choose 'OS Boot and Firmware Recovery' item. Apply the configuration and exit. (Note this must already be selected on current flash image of the Leaf Hill Rev-D)
3. Click the Build button to generate the FD file and RECOVERY.Cap File.
4. In order to enable the 'Recovery Mode', the low speed expansion connector Pins 2 and 18 need to be shorted. Use a jumper wire to connect pins 2-18 together as shown in the figure below



5. Copy RECOVERY.Cap file to the root directory of a USB flash disk for Recovery
6. Insert the USB flash disk to the Leaf Hill Rev-D.
7. Apply power (Note, Do not remove power until the process has finished)

KNOWN LIMITATIONS

1. Images with certain combinations of Debug|Log|Release will fail to boot after flashing. The issue can be worked around by creating a new project with expected debug and logging setting
2. Only single Microcode update from the GUI allowed. Multiple microcode update is not supported and CPU MSR will not change accordingly in this case.
3. Setting FvMain to uncompressed may cause overflow issues
4. Verb Table Binary update doesn't work
5. Stress tests may not be reliably completed
6. Thermal Sensor feature including Thermal Trip points may not function normally if set

7. The flash size calculation of “total/used size” is not correct, and flash descriptor is not functional.
8. GFX Aperture size 128MB configuration could cause some peripheral devices stop working in OS. 256MB & 512MB configurations are good.
9. Flash range lock protection is not available. Firmware uses BIOS writing protection technology to protect flash image.
10. On Oxbow Hill Rev-E board, SD card is not available in pre-boot. We only verified SD card in Windows 10 OS with GPIO driver installed. And due to hardware differences, these issues may occur on other ApolloLake board derivations.

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

[END OF RELEASE NOTES]