



Intel® Firmware Engine Platform Release Notes

MinnowBoard Turbot B21 Platform Release 1.0 – Designed for the Intel® Firmware Engine 5.0

September, 2018

DISCLAIMER

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FILE LIST

1. "[Platform_MinnowBoard_TurbotB21_Release_Note_1.0.pdf](#)"
This File. The release notes for the MinnowBoard Turbot B21 platform install package. Note that Intel® Firmware Engine 5.0 must be installed first.
2. "[MinnowBoardTurbotB21Setup_1_0.exe](#)"
Windows* install package for MinnowBoard Turbot B21 platform.
3. "[MinnowBoardTurbotB21Setup_1_0.bin](#)"
Linux* install package for MinnowBoard Turbot B21 platform.

INSTALLATION INSTRUCTIONS

Note: Previous versions of this Platform installed for Intel® Firmware Engine must be uninstalled prior to installing this release.

Windows*

1. Under 'Control Panel', use the 'Uninstall a program' menu to uninstall any previous versions of MinnowBoard TurbotB21 Reference Platform. Please backup any prior work prior to performing the uninstall operation.
2. Install Intel® Firmware Engine Release Application 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](#)).
3. Right click on the "MinnowBoardTurbotB21Setup_1_0.exe" file and select "Run as Administrator" then follow the dialogues to finish the install.

Linux*

To uninstall:

1. Open a command Terminal in the directory to the directory where the MinnowBoard TurbotB21 Reference Platform was installed (typically `/opt/Intel/MinnowBoard TurbotB21 Reference`

Platform 1.0.0)

2. Execute the command “Change Intel(R) Firmware Engine platform project Installation” from a command Terminal, type:
`'sudo ./Change\ Intel\ (R)\ \ Firmware\ Engine\ Platform\ Project\ Installation'`
3. Follow the uninstall instructions and keep any prior work desired.

To install:

1. Install Intel® Firmware Engine Release Application 5.0 ([Intel® Firmware Engine_R5.0\(Linux\).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. Open a command Terminal in the directory where the downloaded program file (.bin) is located.
3. Change the .bin file properties to include 'execute' using the 'chmod +x' command.
4. Type '`sudo ./ MinnowBoardTurbotB21Setup_1_0.bin`' on the command line.
5. Follow the installer click-through menus to complete installation.

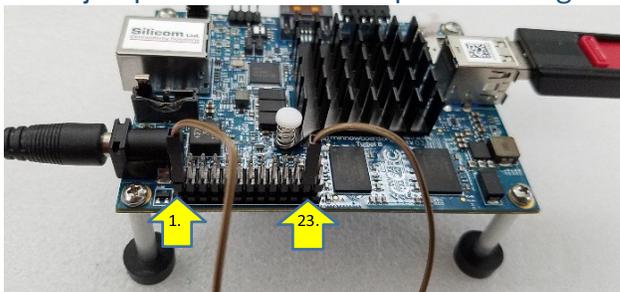
PLATFORM DEPENDENT CONFIGURATION

How to enable a “User Setup” / “BIOS Setup” menu (example using MinnowBoard Turbot B21):

1. Open a new project based on the “MinnowBoardTurbotB21” Source project.
2. Click the “Build” button to generate a new firmware binary image .FD file. (The .FD file will be located in the directory path as shown in the “Log Panel”. Typically the “../ProjectName/OUTPUT” directory)
3. Flash the new image on the MinnowBoard Turbot B21 (See Help “Flashing a Firmware Device” for how to flash the image to your system under test device)
4. To go to “Setup” menu on MinnowBoard Turbot B21:
 - a. Boot up to the UiApp.
 - b. Select “Device Manager”.

How to enable UEFI Secure Boot (example using MinnowBoard Turbot B21):

1. Under Project -> Properties -> Settings, enable the “Enable Variable Authentication Support” and “Enable Image Authentication Support” options.
2. Click the Build button to generate the .FD file.
3. Flash FD image to the MinnowBoard Turbot B21.
4. To Enable Secure Boot on MinnowBoard Turbot B21 using the UiApp:
 - a. In order to enable the “Custom” Secure Boot menu, the low speed expansion connector Pins 1 and 23 need to be shorted.
 - b. Use a jumper wire to connect pins 1-23 together as shown in the figure below



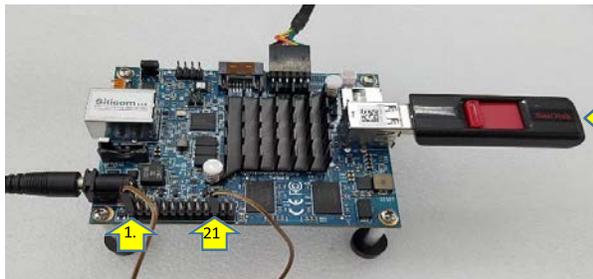
(See Pin layout: <https://minnowboard.org/tutorials/connecting-device-sensor-lse>)

5. Boot up to the UiApp.
6. Enter the UiApp -> Device Manager -> Secure Boot configuration

7. Change "Secure Boot Mode " to "Custom Mode"
8. Enter "Custom Secure Boot Options" menu item and there will be options to modify PK, KEK, DB, DBX and DBT.
9. To enable the UEFI secure boot certificates for PK, KEK, DB, DBX and DBT, download the following document : https://github.com/tianocore-docs/Docs/raw/master/User_Docs/SigningUefiImages%20-v1dot31.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 MinnowBoard Turbot B21):

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) processor E3800 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 MinnowBoard Turbot B21)
3. Click the Build button to generate the FD file and RECOVERY.Cap File. (The RECOVERY.Cap will be located in the same directory path as shown in the "Log Panel" of the .FD file created Typically the ". . . /ProjectName /OUTPUT" directory)
4. In order to enable the 'Recovery Mode', the low speed expansion connector Pins 1 and 21 need to be shorted. Use a jumper wire to connect pins 1-21 together as shown in the figure below



USB Flash disk with RECOVERY.Cap in root directory

1. Copy RECOVERY.Cap file to the root directory of a USB flash disk for Recovery
2. Insert the USB flash disk to the MinnowBoard Turbot B21.
3. Apply power (Note, Do not remove power until the process has finished)

KNOWN LIMITATIONS

Platform specific:

1. On the target MinnowBoard Turbot B21 platform, after a change of the Serial port Line Control Settings to (Stick or Mark) and then Build and flashing the FD image into board the image will not boot to the UEFI Shell.

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

[END OF RELEASE NOTES]