<u>Switching between MFAM Development Kit Firmware Versions:</u>

There are two versions of firmware that can be loaded into the MFAM Development kit:

TIVA_Ethernet_EK_V1.1.1:

This version of firmware communicates with the MFAM via an Ethernet interface. The file that needs to be loaded into the development kit is "Tiva_Interface_EK_Public.bin" and is located in the "TIVA_Ethernet_EK V1.1.1 Firmware" folder.

Wireless Interface:

This version stores data to a micro SD card in the MFAM Development Kit. The logging / downloading of this data is controlled via a WiFi interface to any internet browser (Smartphone, Tablet, Laptop, etc.). The file that needs to be loaded into the Development Kit is "WiFi Interface Firmware (Edition 1.0.1382-434).bin" and is located in the "WiFi Interface Firmware" folder.

Loading the Desired Firmware:

If this is a new unit shipped after November 12, 2018 then there is a Bootloader program already stored in the MFAM Development Kit. If the unit is older than November 2018 the bootloader will need to be upgraded. See the "Bootloader Firmware" section below for information on loading the new Bootloader firmware.

Once the Bootloader firmware has been flashed then on each subsequent power up (or Reset) the Bootloader looks for a file on the micro SD card called "btb.bin". If it sees this file it flashes it into the TIVA microprocessor (in the Development Kit) alongside the bootloader and then executes it. Once flashed the new firmware is nonvolatile. The bootloader will also delete the "btb.bin" file after flashing to keep the same code from being loaded again at every power up or reset.

To switch between firmware programs (new Bootloader Installed):

1) The procedure differs slightly for loading the Wireless interface versus the Ethernet Interface firmware. In both procedures the goal is to get the proper "btb.bin" file into the root folder of the micro SD card.

   a. <u>Ethernet Interface Firmware:</u>
      i. Find the "Tiva_Interface_EK_Public.bin" file in the "TIVA_Ethernet_EK V1.1.1 Firmware" folder and use a computer to copy it to the micro SD card root folder.
      ii. Rename this file in the root folder to "btb.bin".
      iii. Eject the micro SD card by right clicking on the SD Card drive letter in Windows explorer and choosing "Eject". You should get a message stating that the card is safe to remove.

   iv. Remove the card and insert it into the Development Kit
       micro SD card slot.

   b. <u>Wireless Interface Firmware:</u>
      i. Find the "SetupMFAMDevKit-1.0.1382-434.exe" program in
         the "WiFi Interface Firmware" folder and run it. Point to
         the micro SD card root folder and click install. This
         will make the "btb.bin" file on the SD card. You can also
         copy the "WiFi Interface Firmware (Edition 1.0.1382-
         434).bin" file to the micro SD card and rename it to
         "btb.bin".
      ii. Eject the micro SD card by right clicking on the SD Card
          drive letter in Windows explorer and choosing "Eject".
          You should get a message stating that the card is safe to
          remove.
      iii. Remove the card and insert it into the Development Kit
           micro SD card slot.

> **Caution:** The micro SD card is inserted upside down. Also note that it is possible to miss the micro SD card holder and have it insert over the top of the holder. If this happens the card will fall inside the development kit, which will have to be opened up to retrieve the SD card.

2) Power up the Development Kit. This will flash the new firmware into
   the Development Kit alongside the Bootloader firmware.
3) After flashing (a couple of seconds) the code will start to run.
   The Bootloader will also erase the "btb.bin" file in order to keep
   the bootloader from reloading the same firmware over and over with
   each power up (or reset).

Bootloader Firmware:

In the folder "Bootloader Firmware" (in the "WiFi Interface Firmware"
folder) there is a copy of the bootloader code in the file "Bootloader-
pactron-sd.1.0.1221-175.out".   If this is a new unit shipped after
November 12, 2018 then it is there for archival purposes only. This
firmware has been preloaded into the Development Kit and should not ever
need to be reloaded.

If you are upgrading to the new Bootloader (units shipped before November
2018 and not returned for service afterwards), follow the instructions in
the Appendix F of the Dev Kit user guide. If the Bootloader code is
successfully loaded, the *btb.bin* file in the SD card will disappear after
the Development Kit is powered up.