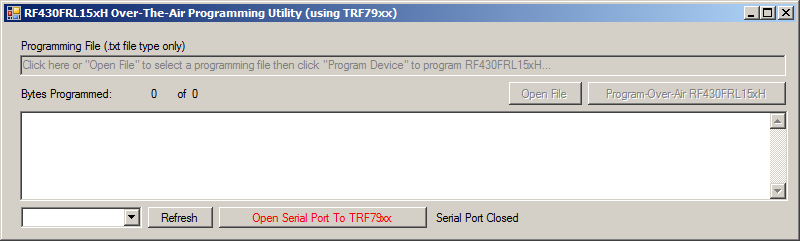
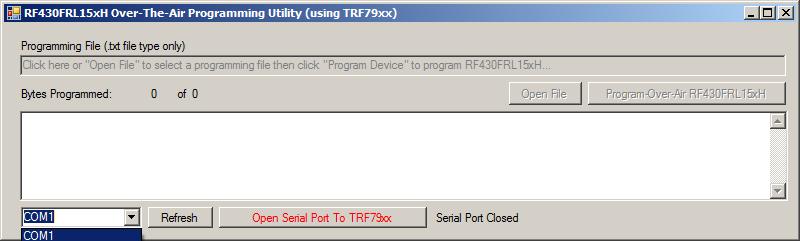
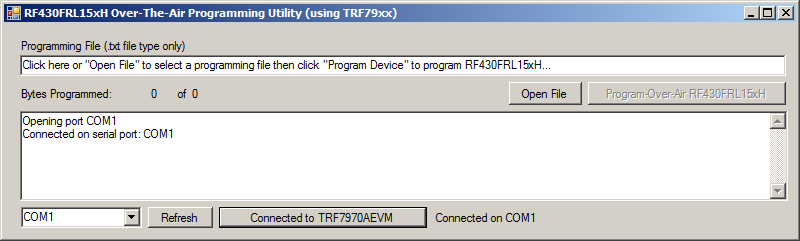
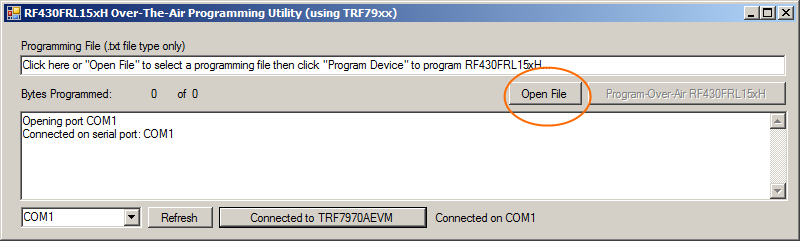
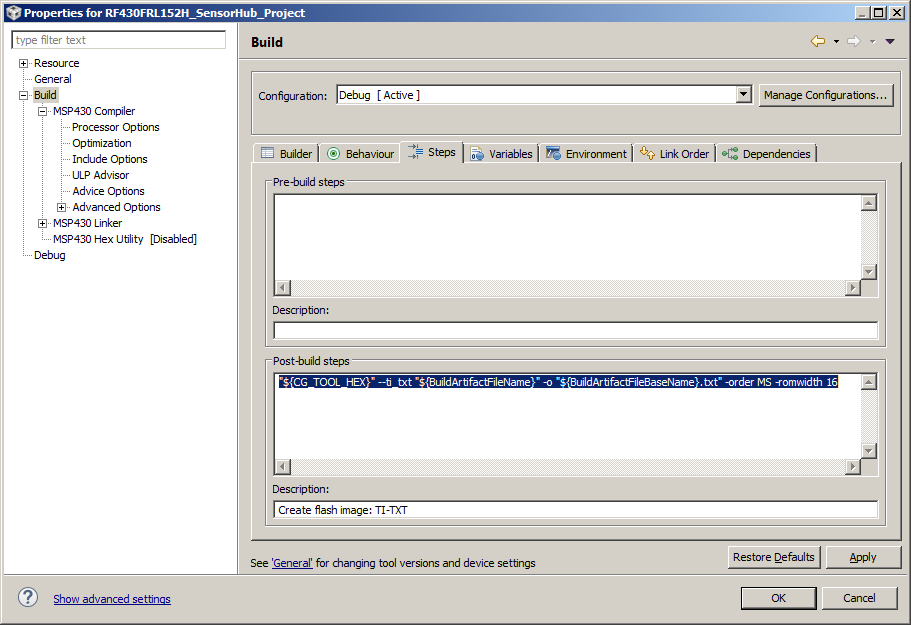
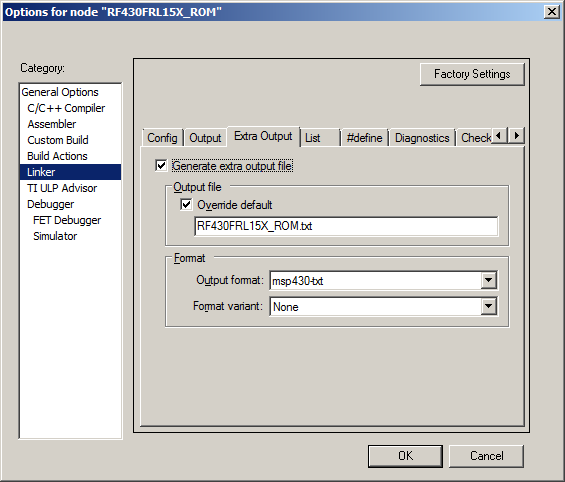
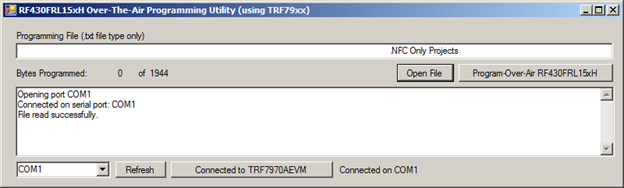
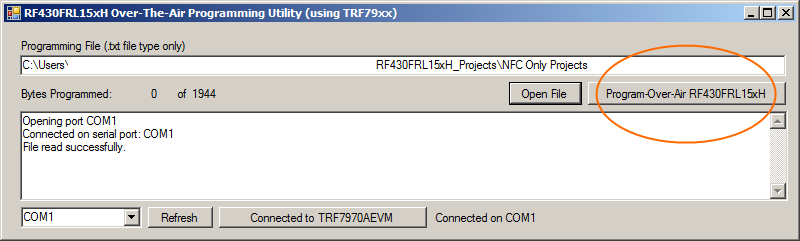
Using RF430FRL15xH Over-The-Air-Programmer

1. To use the programmer a TRF7970AEVM needs to be connected to a USB port. The RF430FRL15xH target needs to be within the RF range and be able to accept RF commands.
2. When first opened the programmer will look like this: 
3. Select the dropdown box. If nothing is available or a TRF7970AEVM was just recently inserted, click on the “Refresh” box. 
4. Click on the “Open Serial Port to TRF79xx” 
5. If the connection succeeds, the button text will change to “Connected to TRF7970AEVM”. Click on the “Open File” button. 
6. Select a .txt file. This file needs to be the compiled output of the programmed that is needed to be programmed to the FRAM. Keep in mind that only the range of RF accessible FRAM space will be able to be programmed: 0xF868 to 0xFFFF. This does not include the lock bits for ISO15693 or the system control register. However both these settings can be programmed over RF after running this program using ISO15693 commands.
7. Producing a .txt file depends on the compiler used. For CCS here are the steps:
   1. Right click on the project to use.
   2. Select the “Build” option.
   3. In the”Post-build steps” in the “Steps” tab enter this tex  
      "${CG\_TOOL\_HEX}" --ti\_txt "${BuildArtifactFileName}" -o "${BuildArtifactFileBaseName}.txt" -order MS -romwidth 16  
      
   4. Then compile the project and the .txt binary output will be in the “Debug” folder.
8. In IAR to generate the .txt output, right click on the project and select the “Options” setting:



1. In the “Linker” category, select the “Extra Output” tab and select “Generate extra output”.
2. Then select in the “Output format” the “msp430-txt” setting. Leave “Format variant” set to “None”.
3. Find and choose the “.txt” programming file in the “Over-The-Air-Programmer” If the RF430FRL152HEVM is being used set switch S6 to “Battery” if the USB power is not supplied.
4. Then click on “Program-Over-Air RF430FRL15xH” 
5. If the RF communication can be established, the “Bytes Programmed” will run from 0 to the number on the left. Once all the FRAM has been programmed, this will be the GUI result: 