Sea Mammal Research Unit

PROGRAMMING A TAG

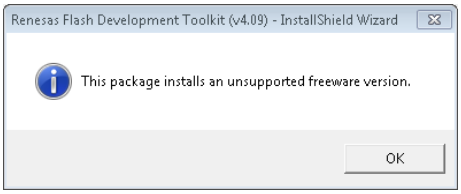
1 Installing Renesas Software v4.09

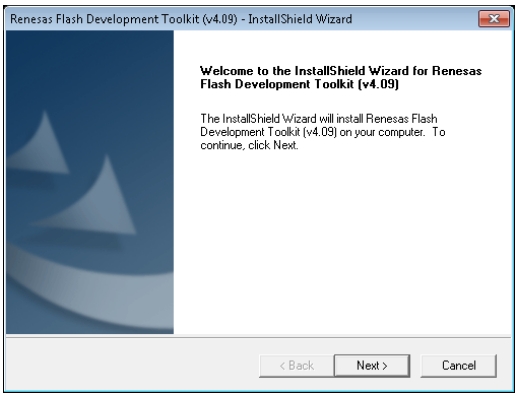
Download the Flash Development Toolkit v4.09 from the download section of the SMRU website:

http://www.smru.st-and.ac.uk/Instrumentation/Downloads/

Copy the installation file on to the PC desktop and run the installer by using the mouse to double click on the icon.

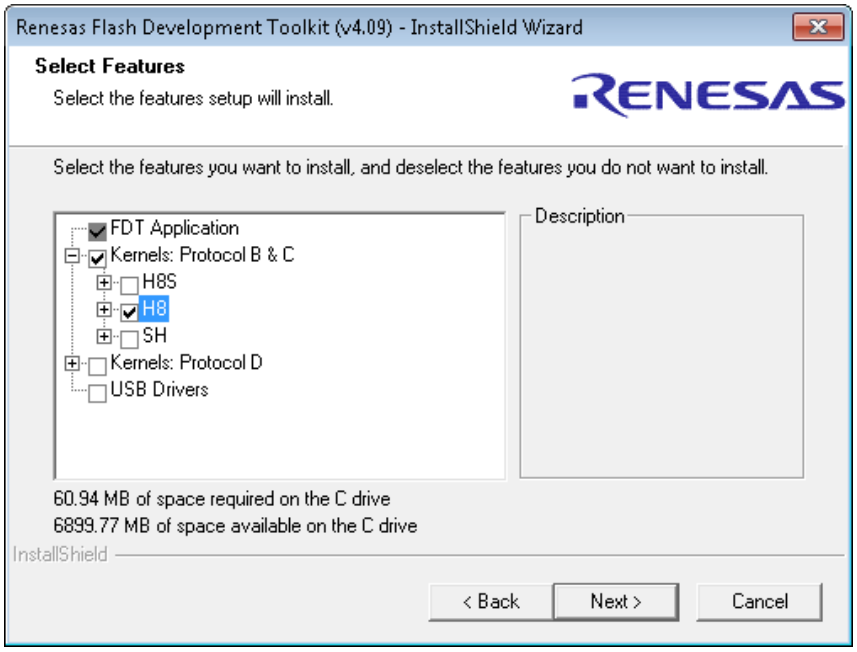
Navigate through the various installation windows, accepting the defaults:

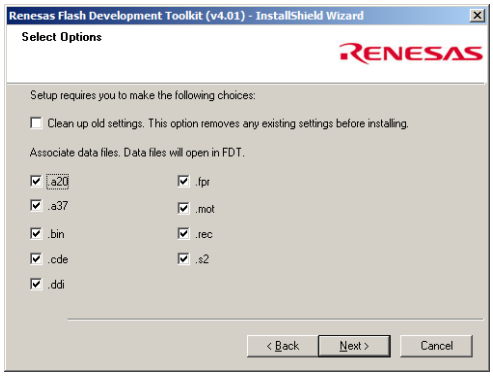




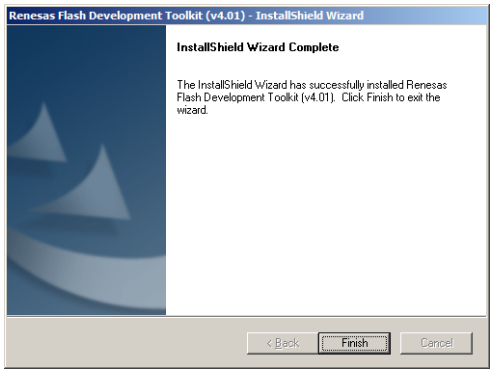
etc.

It reduces clutter later to select only the option shown here on this screen:





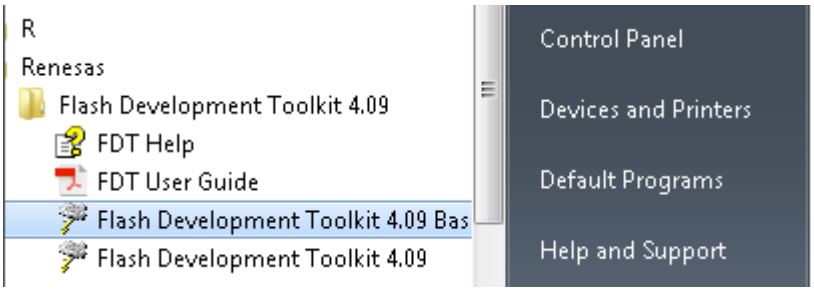
…



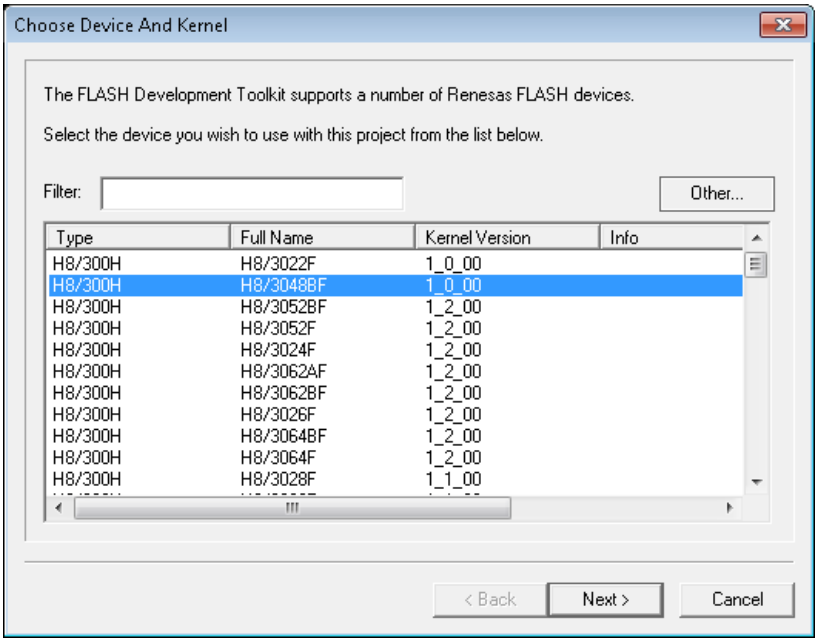
2 Configuring the Renesas FDT v4.09 Software

This process only needs to be complete once for a given software installation on a PC. The configuration values are preserved for next time the software is run.

There are basic and complex versions of the FDT program. Start the 'Flash Development Toolkit **Basic**' application from the start menu on the PC.

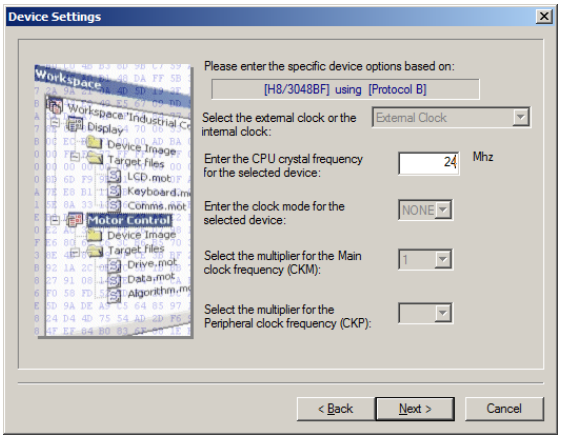


Scroll down the list and select the processor 'H8/3048BF'



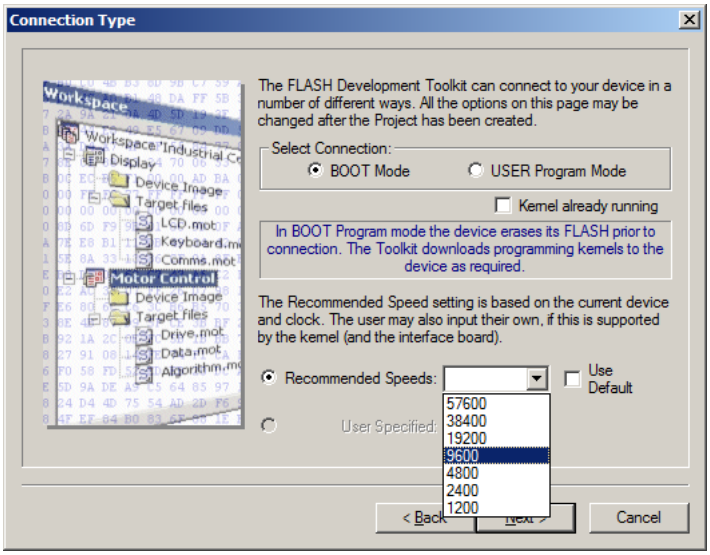
Using the drop-down menu, select the COM port used by the Bluetooth device, then press 'next'.

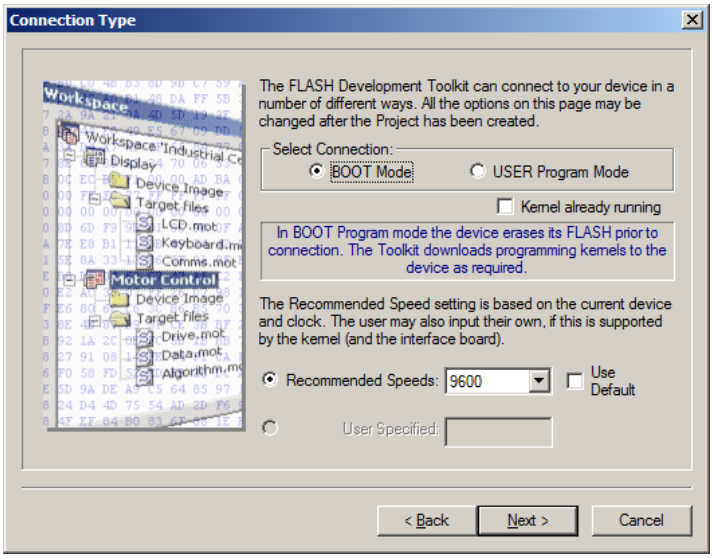
Set the clock frequency to 24MHz, then press ‘next’



Set the connection type to ‘Boot Mode’. Deselect the ‘Use Default’ and set the recommended speed to 9600 (for programming with Bluetooth from the drop-down list. Press ‘next’

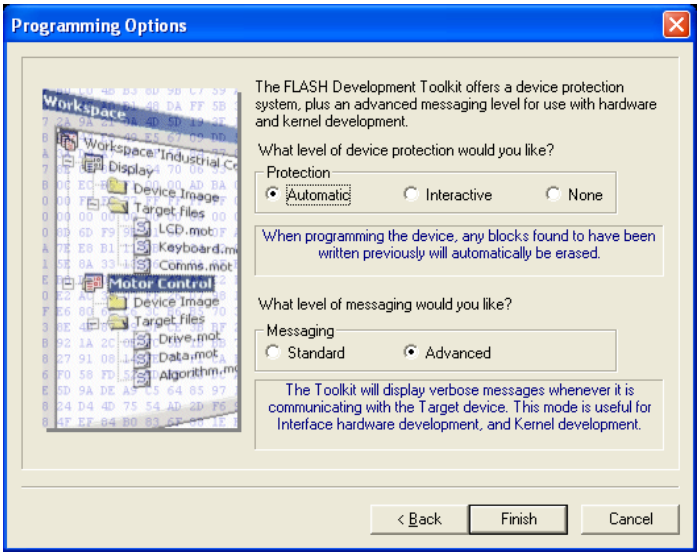
***Note**: For Bluetooth the rate must be set to 9600.*



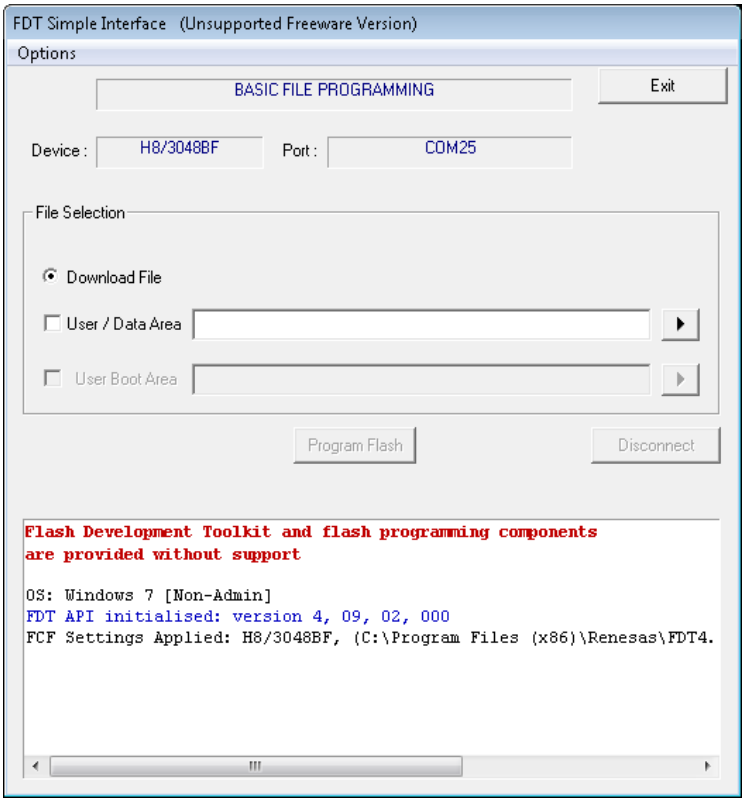


Leave the Programming Options as ‘Protection – Automatic’ and ‘Messaging – Advanced’.

Press ‘Finish’.



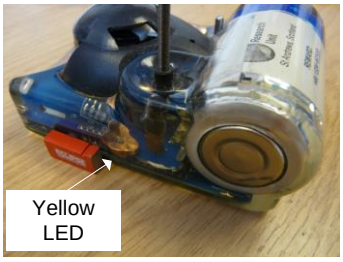
When the ‘Finish’ button is pressed, the main window used for programming a tag opens automatically.



3 Tag Programming with Renesas FDT v4.09 Basic Software

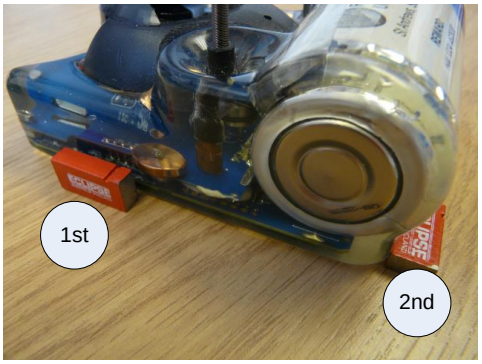
If the Renesas software is being used for the first time then follow the configuration instructions in the preceding section, else proceed as follows:

Place a magnet against the glass reed-switch located on the side of the tag, as shown – although tag configurations differ somewhat, the relative position of the reed-switch in relation to the battery and the front of the tag remains the same.



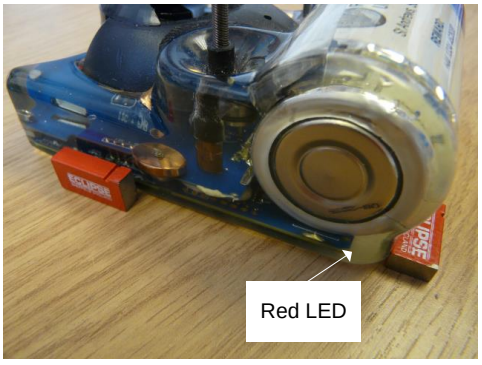
A rather faint yellow LED mounted along the edge of the PCB will flash approximately once every 4 seconds. If it doesn't flash, remove magnet and try again.

Once the yellow LED is flashing, place a second magnet to the rear of the tag, behind the battery but close to the corner where the first magnet was positioned.



Note: The order in which the two magnets is positioned against the tag is important for programming. The magnet on the side of the tag **must** be positioned first, **then** the magnet to the rear of the tag.

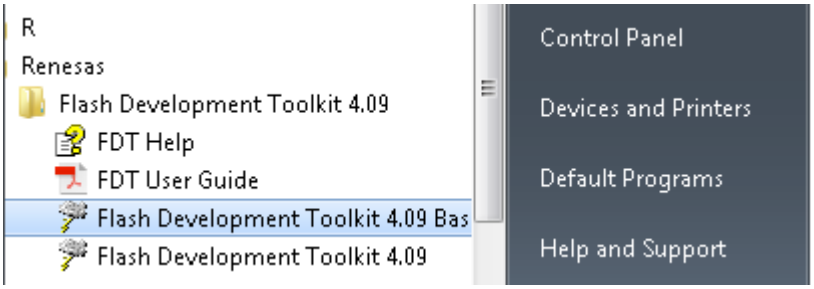
When the second magnet is correctly then a flashing red LED should be visible through the epoxy near this magnet:



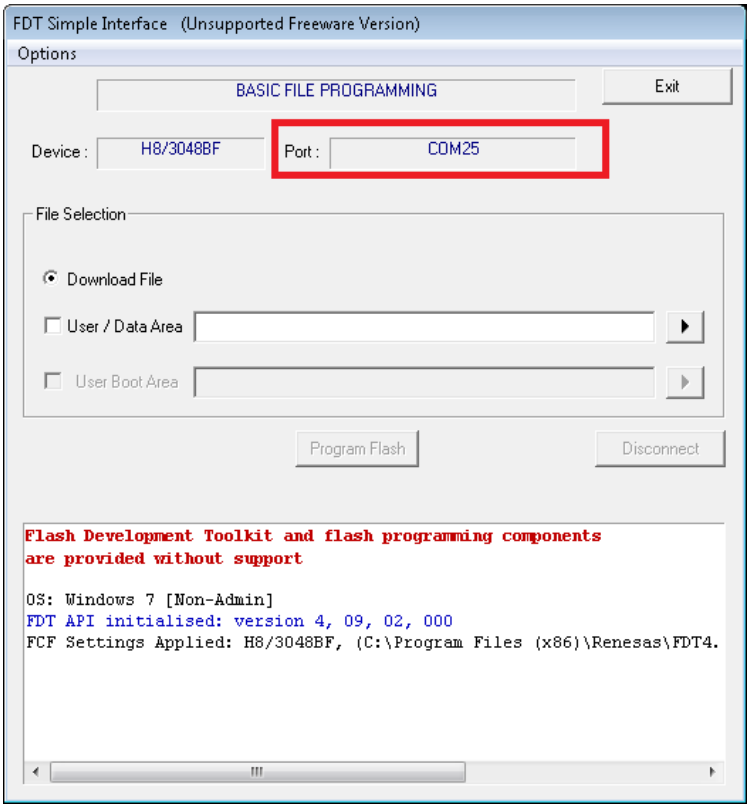
Establish a Bluetooth connection with the PC (but don't try to run TagConfig).

Make a note of the COM port established with the PC.

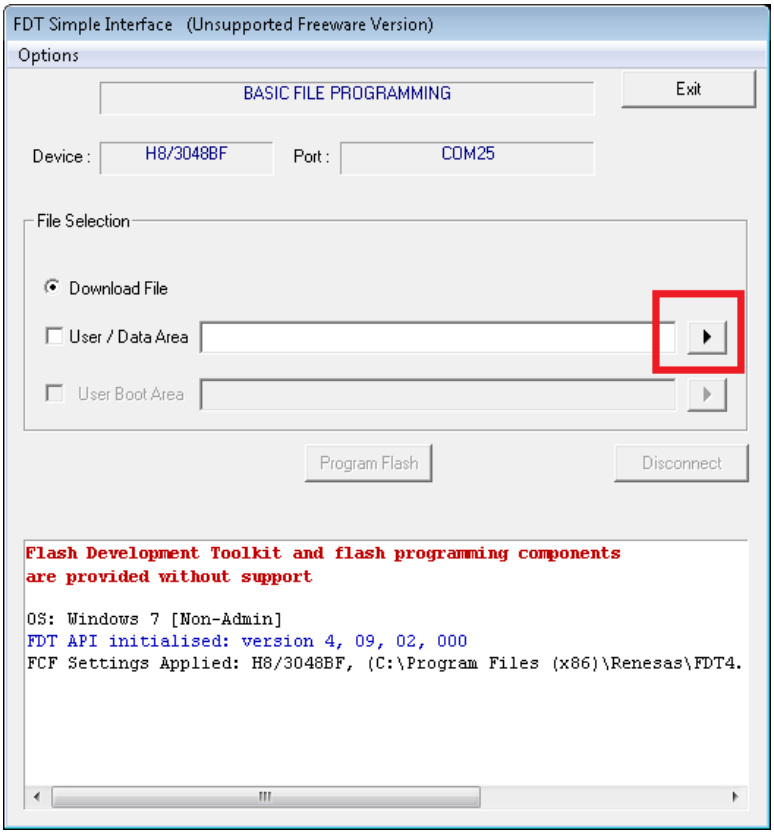
Run the 'Flash Development Toolkit v 4.09 Basic' from the 'Start menu:



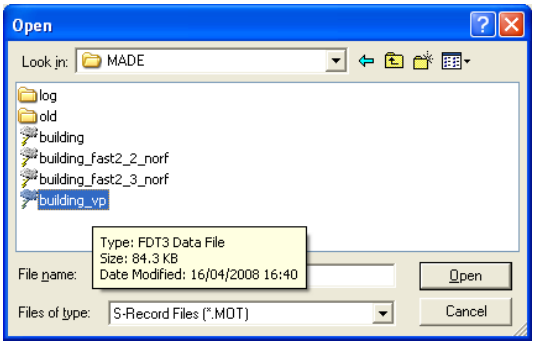
In the FDT Simple Interface window, confirm that the COM port setting identified in the window is the same as that for the established Bluetooth connection. If not then follow the procedure in Section 2 to set the COM port to the Bluetooth port.



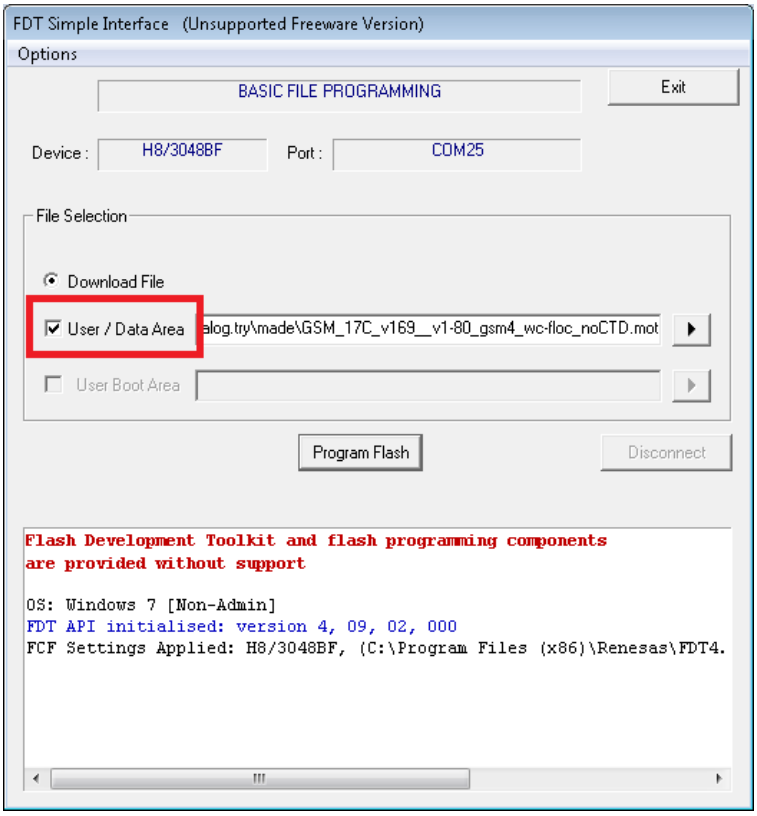
In the FDT Simple Interface window, press on the right-hand arrow button



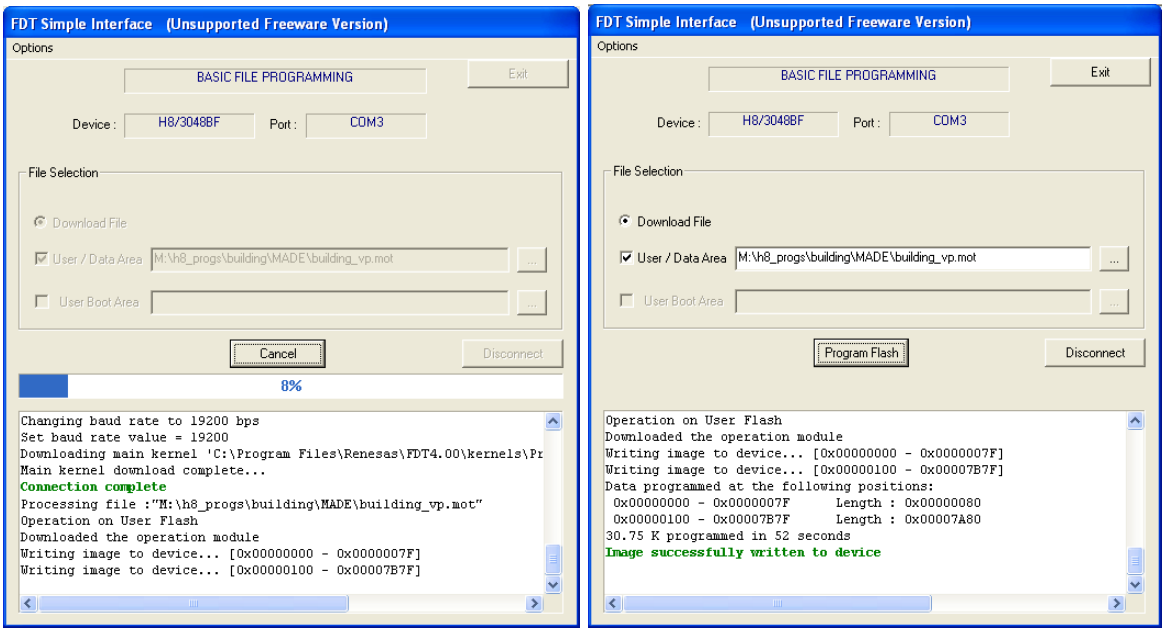
Navigate to the ".mot" file to load on to the tag



When the file has loaded in to the application, ensure the "User Data Area" tick-box is ticked then press the 'Program Flash' button.



Progress is reported in a status window, as follows:



When programming has completed successfully, click “Disconnect” and reove the magnets from the tag. The tag should restart and indicate that it is in standby mode by a double flash of the red LED near the antenna.

If further tags are to be programmed, it is most efficient to delete the Bluetooth connection, establish a connection to the new tag using the same COM port number, then simply press “Program Flash” again.