HelloBluetooth nRF8001 application

Requirements

To compile the hello_bluetooth project, you will need nRFgo Studio and a full version Keil C51, with its µVision IDE. nRFgo Studio can be used to open and edit the xml configuration file used for nRF8001 setup. If you don't have a full version of Keil, an evaluation version can be freely downloaded. This will however not be enough to compile the project, but will make it looking at the source code and project setup more convenient.

nRFgo Studio can be downloaded here https://www.nordicsemi.com/eng/Products/2.4GHz-RF/nRFgo-Studio/(language)/eng-GB, while the Keil C51 evaluation version is available by filling out the form here https://www.keil.com/demo/eval/c51.htm.

The necessary files from the nRF8001 SDK are included with this project, so the project can be opened up directly from within the folder structure. There is also a prebuilt hex-file available in the root folder.

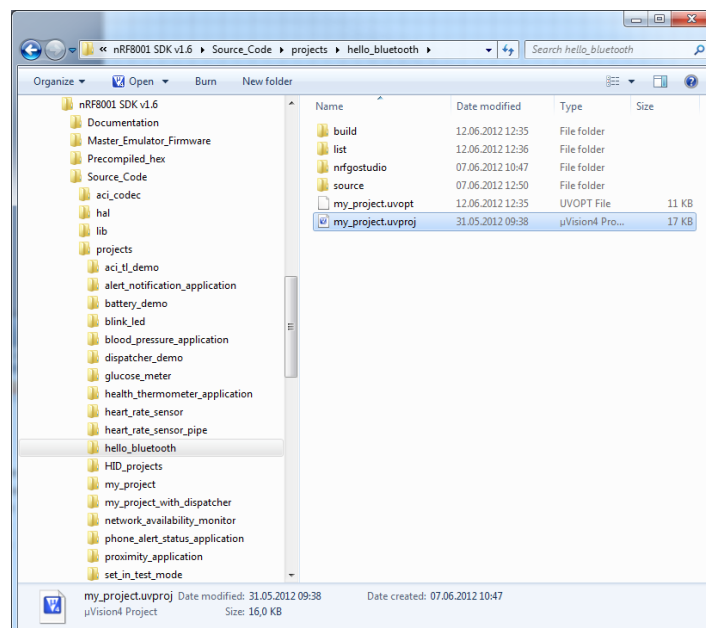Please note that this project only works with nRF8001 revision D or later.

Figure 1: Placement of the hello_bluetooth_folder.

Structure

When the application starts, the application controller will load the needed setup into the nRF8001. Having done this, the application will enter the standby state. From this state, the application controller will set the name of the device, using the lib_aci_set_local_data function. This will give a callback, with a command response event. In the handler for this, lib_aci_cmd_response_hook, we try to initiate a connection, by using the lib_aci_connect method. When getting connected, this will give a callback,

lib_aci_connected_hook, in which we request a timing parameters change, to the ones set up in the nRFgo Studio. This again, will give a callback, the lib_aci_timing_hook, in which we can go to the run state.

On a disconnect, things will start over again, by returning to the standby state and go from there.

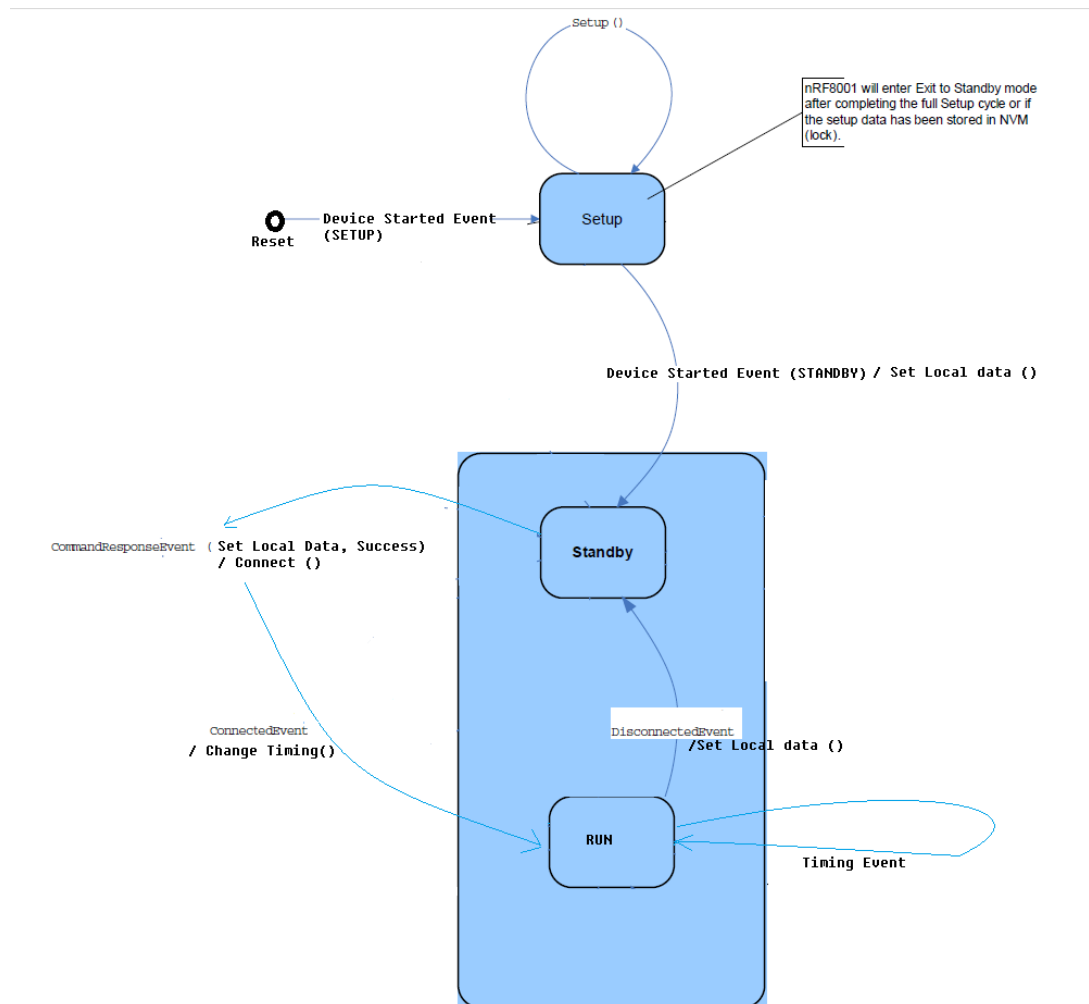The above section is also tried explained in the quite coarse state diagram in figure 2.

Figure 2: Simplified state machine for the application. Modified from figure 43 in the nRF8001 Product Specification.

Resources

There is support available on the nRF8001 through the MyPage system at www.nordicsemi.no. There are also forums available on developer.bluetooth.org, that might be able to help.

Additionally, quite extensive documentation comes with the nRF8001 SDK, in its "Documentation" subfolder, both from a firmware and hardware point of view. The Product specification on the nRF8001, freely available on www.nordicsemi.no might also be useful.