# RFID Reader/Writer – Software installation and compiling instructions

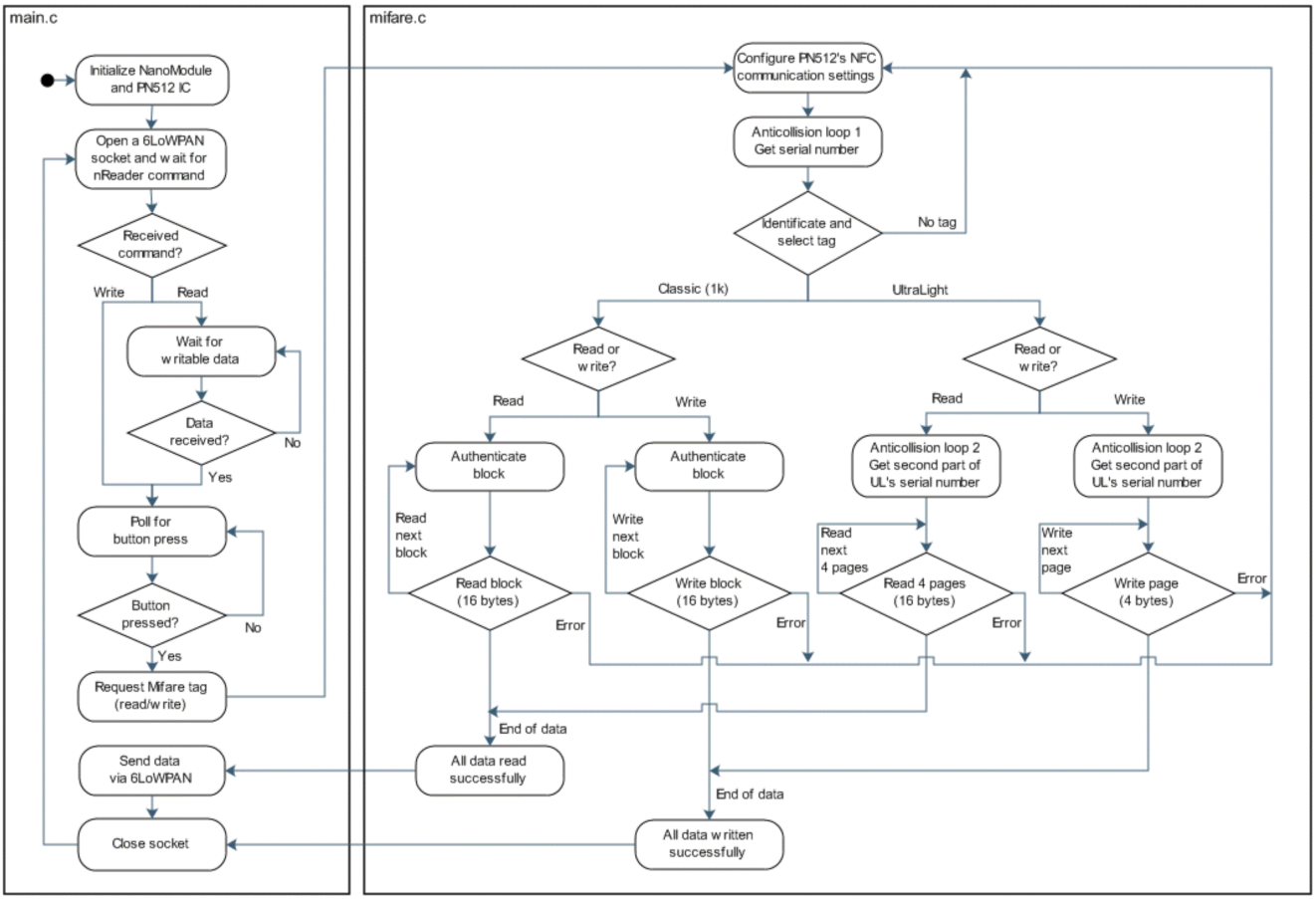
To compile the RFID reader/writer's software and upload the program to NanoModule, see the following instructions.

The `rfidrw` directory includes the software files for the wireless RFID reader/writer. The software was developed in Linux operating system with NanoStacks v1.0.0 and FreeRTOS v4.1.3.

Descriptions of the files:

- main.c – main tasks including NanoStack and FreeRTOS functions
- mifare.c – PN512 module's configurations and functions for RFID tag operations
- mifare.h – header file
- app.rules – NanoStack options
- FreeRTOSConfig.h – FreeRTOS configurations
- Makefile – compiler instructions
- rfidrw.hex – compiled program in binary format
- nano_programmer – loader program to upload the software to the NanoModule

Description of the program structure:



To install the NanoStack development environment and upload the program software to NanoModule:

1. Download the NanoStack GPL Source package from http://sourceforge.net/projects/nanostack/ and the FreeRTOS package from http://sourceforge.net/projects/freertos/.

2. Install SDCC compiler from Sensinode's download page (http://www.sensinode.com/top/information.php?info_id=10).

3. Download and extract *sdcc-large-stack-auto.tgz* from http://www.sensinode.com/downloads/toolchain/ to SDCC's `lib` directory.

4. Place the `rfidrw` directory to NanoStack's `/Examples` directory.

5. Compile the software with `make` command in `rfidrw` directory.

6. Place the NanoModule on the Devboard D200 and connect it to the PC's USB port.

7. Upload the compiled program to NanoModule with command:
   `./nano_programmer -d /dev/ttyUSB<port#> -P rfidrw.hex`.

See Sensinode's NanoStack v1.0.x manuals and http://nanostack.wiki.sourceforge.net/ for more detailed instructions.