20D_radio_simulator_firmware

Firmware repo for Design 20D_radio_simulator

Simulated Design

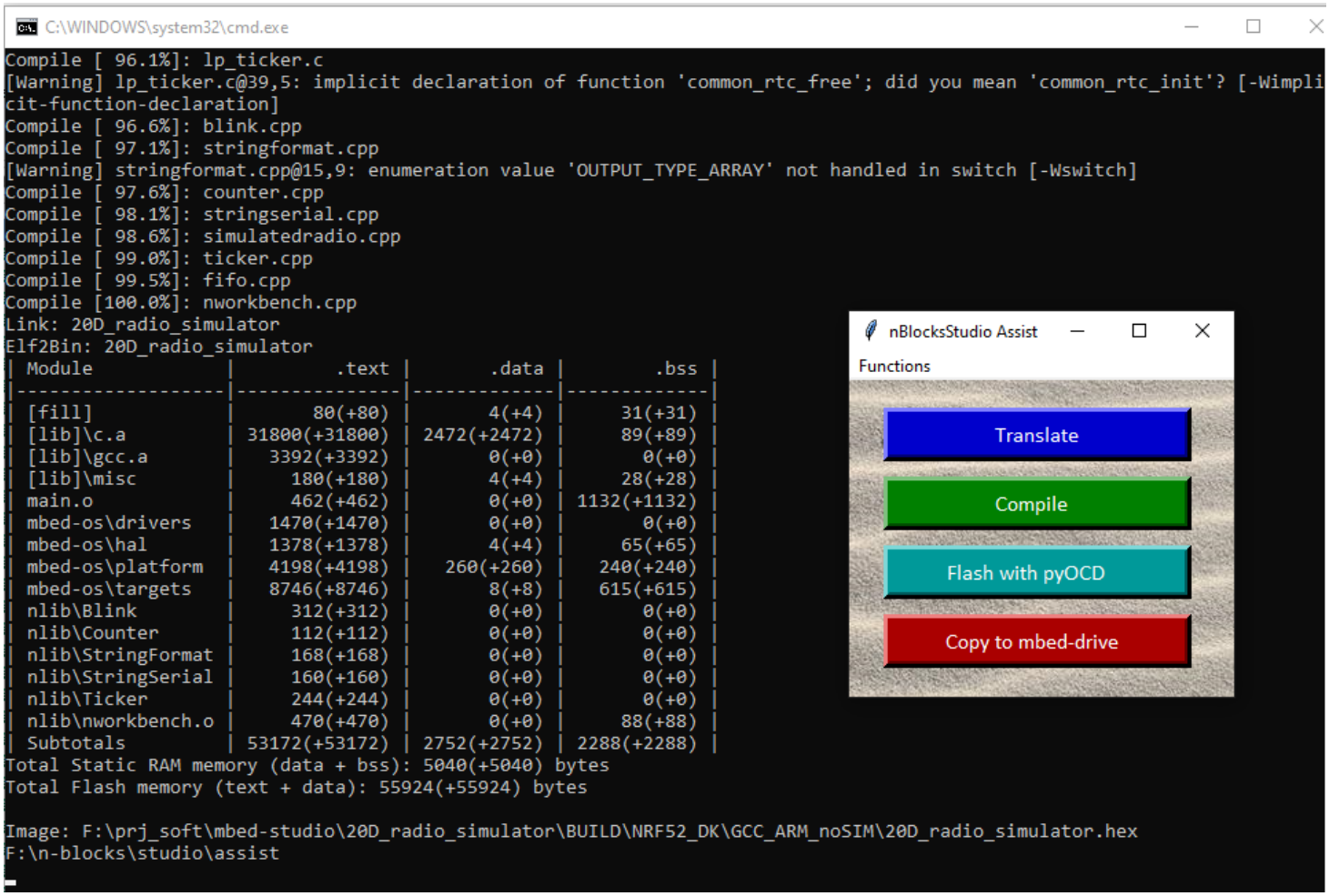
- Compilation with `assist` GCC_ARM Pass ✔
- Compilation with `assist` ARMC6 Pass ✔
- Compilation with `mbed-studio` GCC_ARM Pass ✔

Non Simulated Design

- Compilation with `assist` GCC_ARM Pass ✔
- Compilation with `assist` ARMC6 Pass ✔
- Compilation with `mbed-studio` GCC_ARM Pass ✔

Compilation of the simulated Design using mBedStudio

`assist`



main.cpp for the simulated Design, reviewed with mbed-studio IDE

main.cpp

```
/* ============================================================ *
 *          Automatically generated by n-Blocks Studio 2.0      *
 *                                                              *
 *                        www.n-blocks.net                      *
 * ============================================================ */
#include "nlib\nblocks.h"
#include "nlib\BSP\bsp.h"
// Custom nodes:
#include "nlib\Ticker\ticker.h"
#include "nlib\Counter\counter.h"
#include "nlib\StringFormat\stringformat.h"
#include "nlib\StringSerial\stringserial.h"
#include "nlib\SimulatedRadio\simulatedradio.h"

// -*-*- List of node objects -*-*-
nBlock_Ticker              nb_nBlockNode0_Ticker          (1000);
nBlock_Counter             nb_nBlockNode1_Counter         (10);
nBlock_StringFormat        nb_nBlockNode2_StringFormat    ("%d");
nBlock_StringSerial        nb_nBlockNode3_StringSerial    (P0_31, P0_2);
nBlock_SimulatedRadio      nb_nBlockNode4_SimulatedRadio  (RADIO_MODE_TX_ONLY, 20);
nBlock_SimulatedRadio      nb_nBlockNode5_SimulatedRadio  (RADIO_MODE_RX_ONLY, 20);

// -*-*- List of connection objects -*-*-
nBlockConnection    n_conn0( &nb_nBlockNode4_SimulatedRadio, 0,    &nb_nBlockNode5_SimulatedRadio, 0);
nBlockConnection    n_conn1( &nb_nBlockNode2_StringFormat,   0,    &nb_nBlockNode3_StringSerial,   0);
nBlockConnection    n_conn2( &nb_nBlockNode5_SimulatedRadio, 0,    &nb_nBlockNode2_StringFormat,   0);
nBlockConnection    n_conn3( &nb_nBlockNode1_Counter,        0,    &nb_nBlockNode4_SimulatedRadio, 0);


// -*-*- Main function -*-*-
int main(void) {
    SetupWorkbench();
    while(1) {
        ProgressNodes();

        // Your custom code here!
    }
}

```

Compilation for the simulated Design, with mbed-studio

```
 7  #include "nlib\nblocks.h"
 8  #include "nlib\BSP\bsp.h"
 9  // Custom nodes:
10  #include "nlib\Ticker\ticker.h"
11  #include "nlib\Counter\counter.h"
12  #include "nlib\StringFormat\stringformat.h"
13  #include "nlib\StringSerial\stringserial.h"
14  #include "nlib\SimulatedRadio\simulatedradio.h"
15
```

Problems × Output × Libraries ×

```
Building project 20D_radio_simulator (NRF52_DK, GCC_ARM)
Scan: 20D_radio_simulator
Compile [ 99.5%]: main.cpp
Compile [100.0%]: simulatedradio.cpp
Link: 20D_radio_simulator
Elf2Bin: 20D_radio_simulator
| Module              |       .text |    .data |       .bss |
|---------------------|-------------|----------|------------|
| [fill]              |     82(-38) |   12(+0) |     31(+0) |
| [lib]\c.a           | 31988(+188) | 2472(+0) |     89(+0) |
| [lib]\gcc.a         |    3392(+0) |    0(+0) |      0(+0) |
| [lib]\misc          |     180(+0) |    4(+0) |     28(+0) |
| main.o              |    446(+76) |    0(+0) | 1396(+368) |
| mbed-os\drivers     |    2122(+0) |    0(+0) |      0(+0) |
| mbed-os\hal         |    1602(+0) |    4(+0) |     65(+0) |
| mbed-os\platform    |    5380(+0) |  260(+0) |    368(+0) |
| mbed-os\targets     |   11108(+0) |    8(+0) |    615(+0) |
| nlib\Counter        |     150(+0) |    0(+0) |      0(+0) |
| nlib\SimulatedRadio |   222(+222) |    0(+0) |      0(+0) |
| nlib\StringFormat   |     216(+0) |    0(+0) |      0(+0) |
| nlib\StringSerial   |     186(+0) |    0(+0) |      0(+0) |
| nlib\Ticker         |     334(+0) |    0(+0) |      0(+0) |
| nlib\nworkbench.o   |     564(+0) |    0(+0) |     88(+0) |
| Subtotals           | 57972(+448) | 2760(+0) | 2680(+368) |
Total Static RAM memory (data + bss): 5440(+368) bytes
Total Flash memory (text + data): 60732(+448) bytes
Image: BUILD/NRF52_DK/GCC_ARM\20D_radio_simulator.hex
```

Compilation using nBlocksStudio `assist`

Four (4) BUILD directories are created compiling two (2) Designs (Simulated and nonSimulated) with 2 different compilers.
While mbed-studio is a nice IDE, with `assist` is easier to switch between different compilers and "BUILD directory" names.