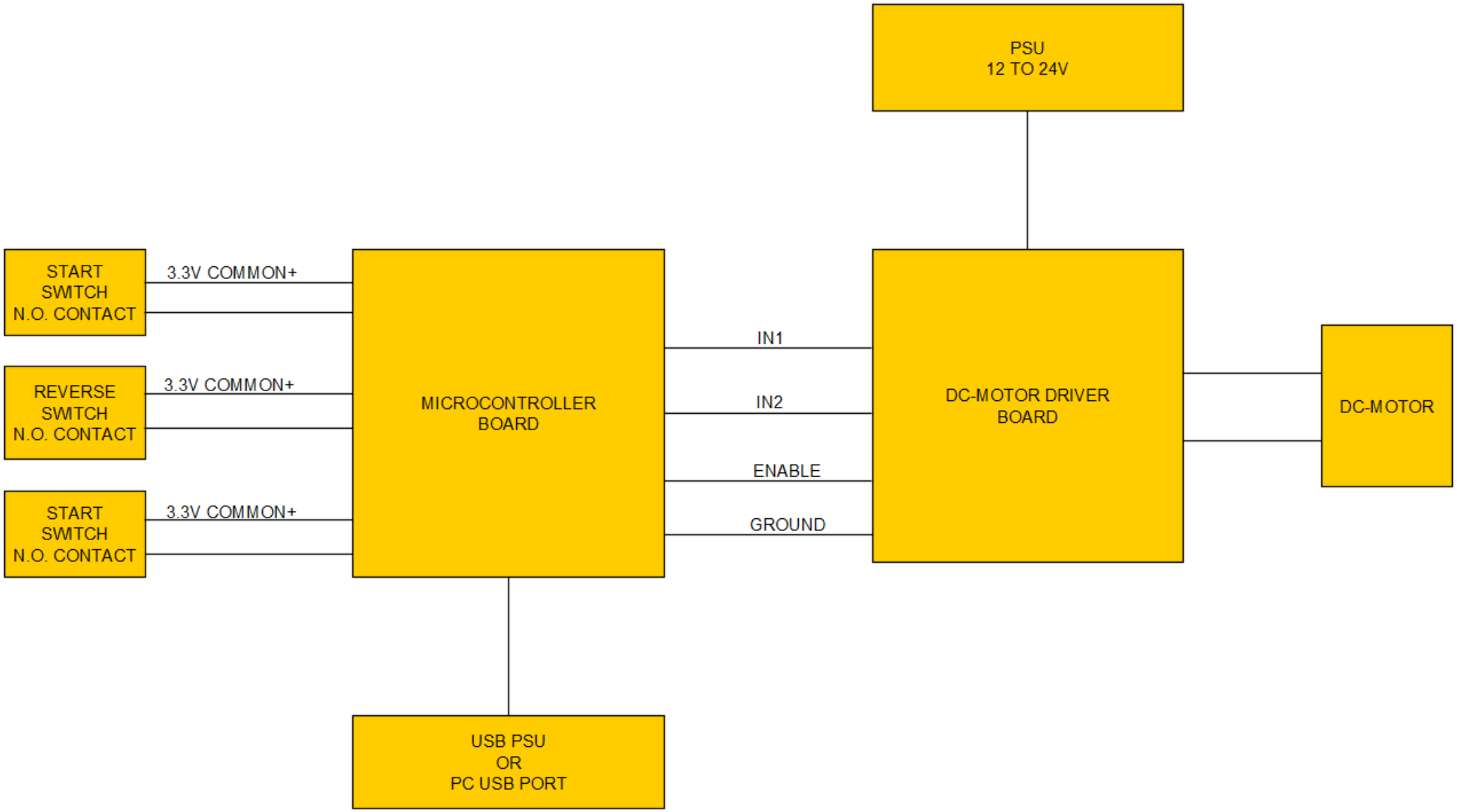
14D_MotorTest

Motion control example

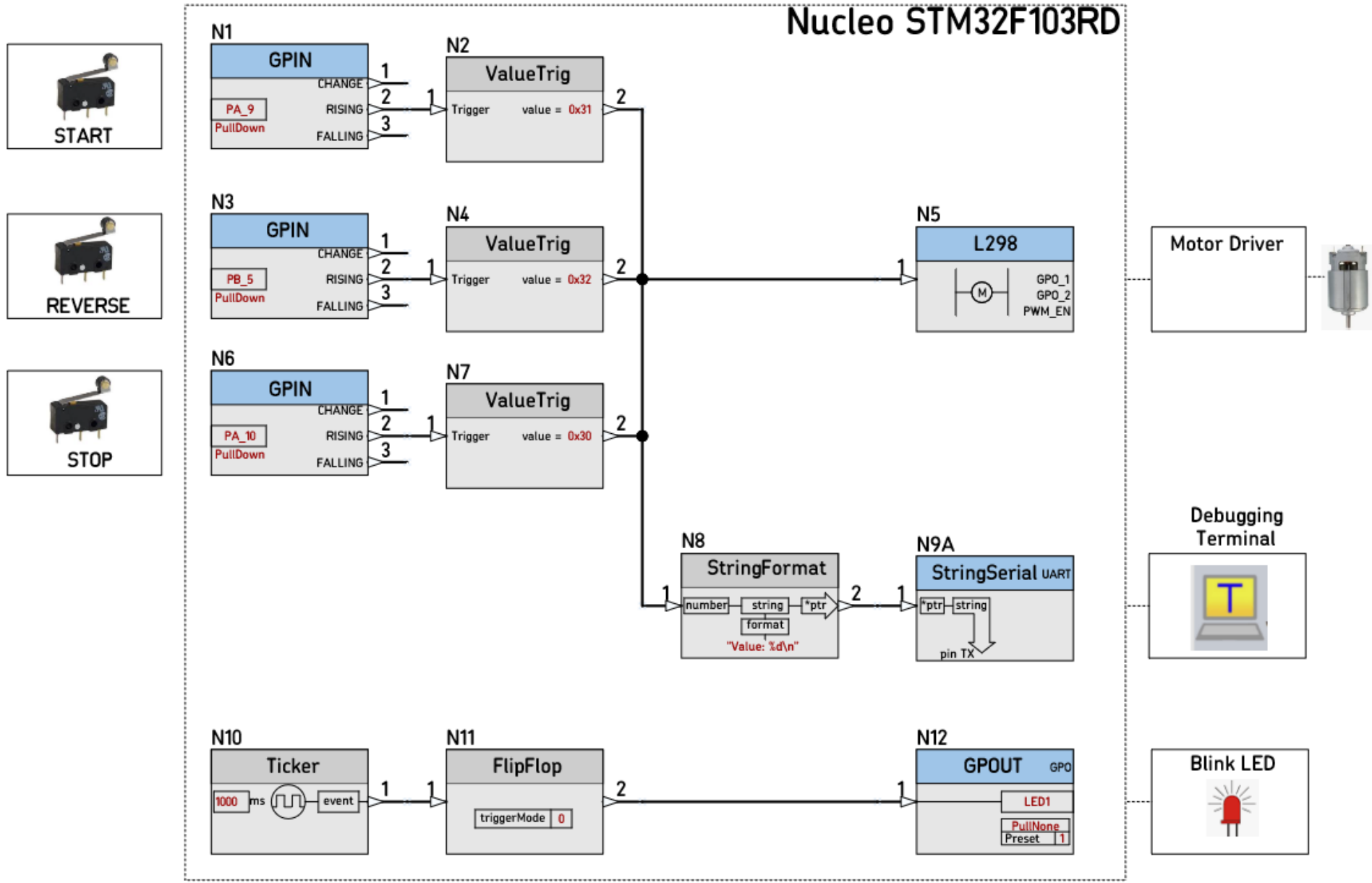
Nucleo_F401 and X-Nucleo_IHM04A1

With nBlocksStudio

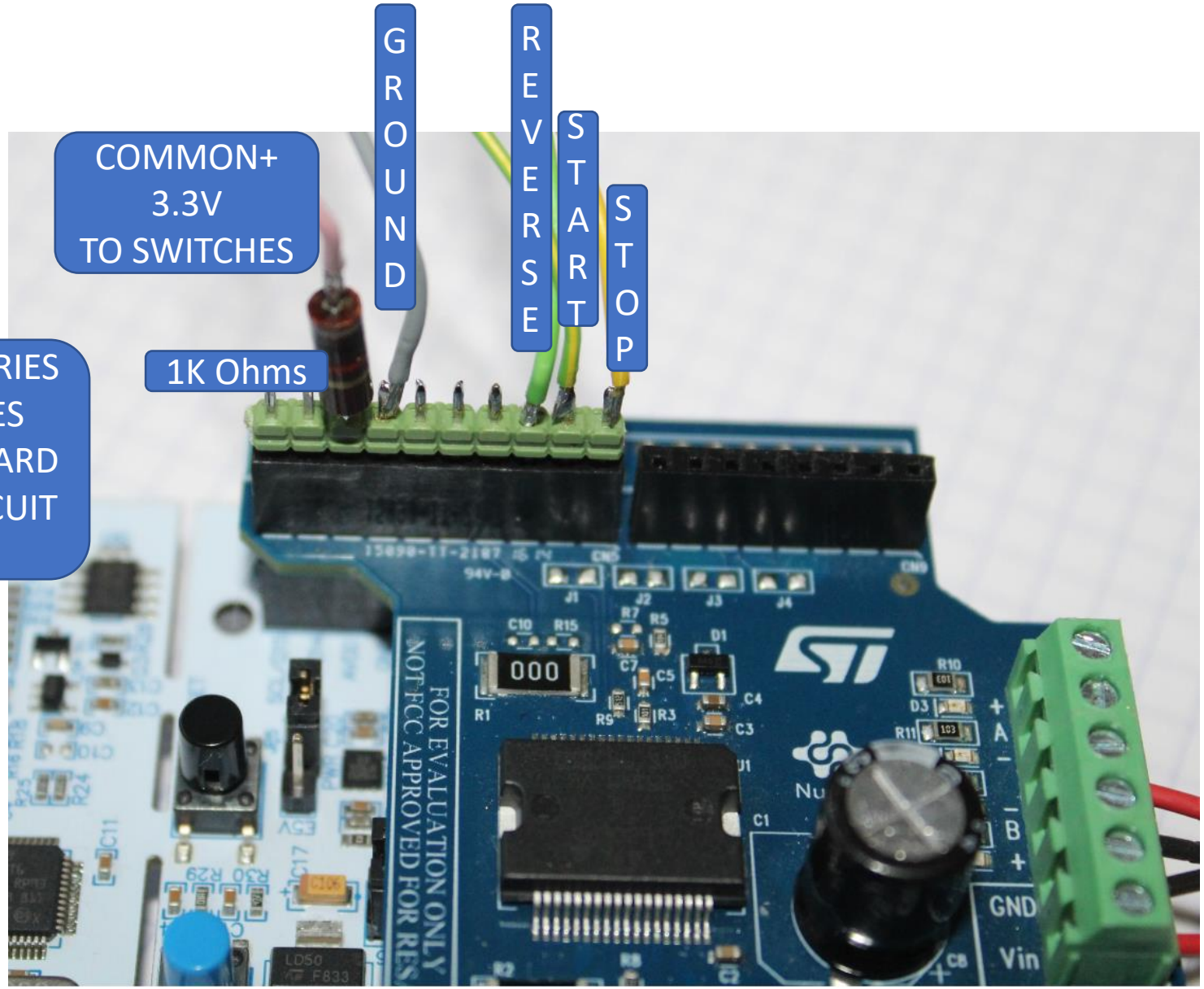
BLOCK DIAGRAM



nBlocksStudio Design

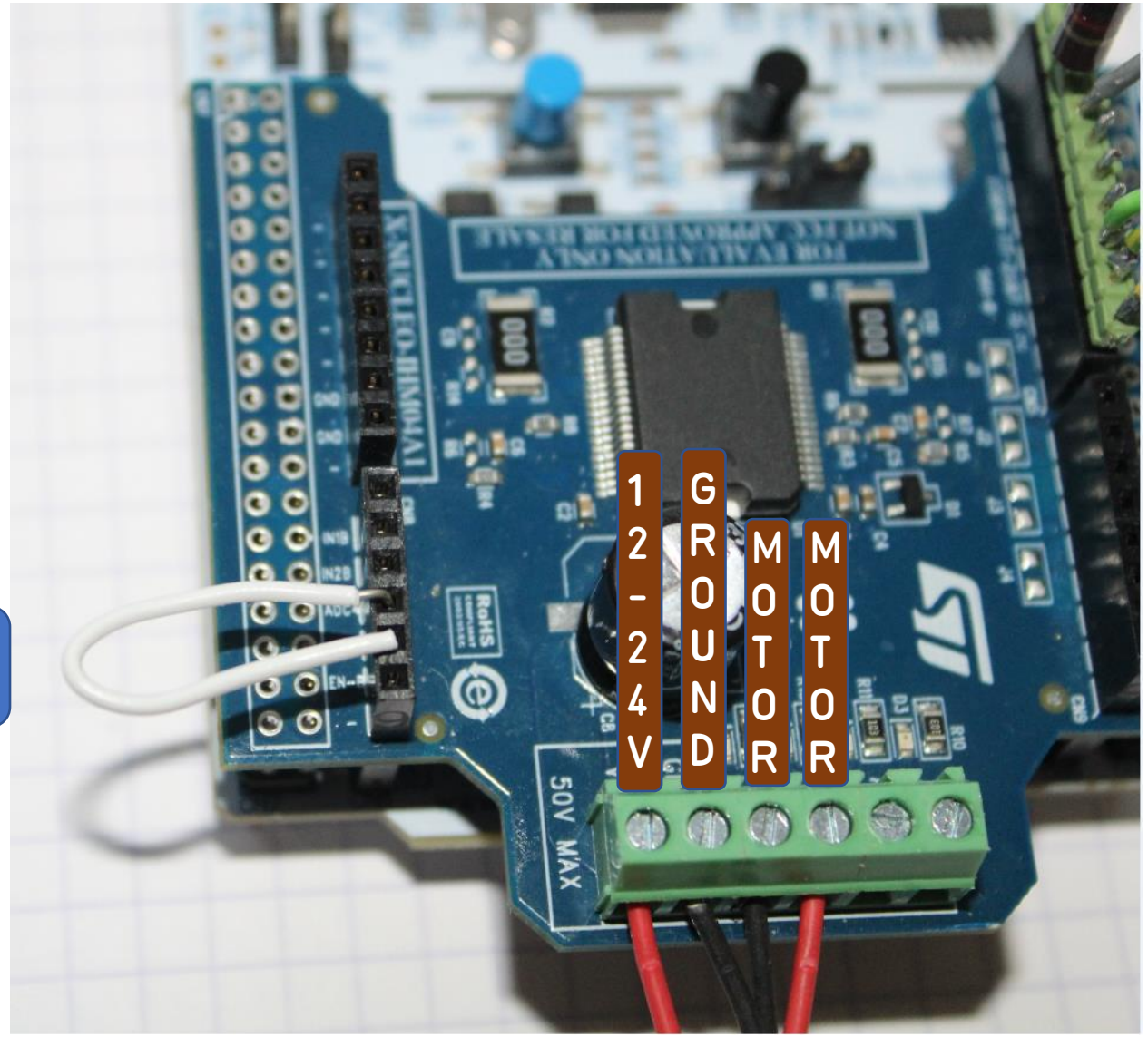


SWITCHES CONNECTION



MOTOR-CONNECTIONS AND BRIDGE

BRIDGE MANDATORY



main.cpp

F: > prj_soft > mbed-studio > 14D_MotorTest > main.cpp

```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\GPIN\gpin.h"
#include "nlib\ValueTrig\valuetrig.h"
#include "nlib\L298\L298.h"
#include "nlib\StringFormat\stringformat.h"
#include "nlib\StringSerial\stringserial.h"
#include "nlib\Ticker\ticker.h"
#include "nlib\FlipFlop\flipflop.h"
#include "nlib\GPOUT\gpout.h"

// -*-*- List of node objects -*-*-
nBlock_GPIN             nb_nBlockNode0_GPIN       (PA_9, PullDown);                  // X-NUCLEO-IHM04A1 OK
nBlock_ValueTrig        nb_nBlockNode1_ValueTrig  (0x31);
nBlock_GPIN             nb_nBlockNode2_GPIN       (PB_6, PullDown);                  // X-NUCLEO-IHM04A1 OK
nBlock_ValueTrig        nb_nBlockNode3_ValueTrig  (0x32);
nBlock_L298             nb_nBlockNode4_L298       (PA_0, PA_1, PB_0);                // X-NUCLEO-IHM04A1 = PA_0, PA_1, PB_0, PC_1 can't work with PWM, short PB_0 & PC_1
nBlock_GPIN             nb_nBlockNode5_GPIN       (PC_7, PullDown);                  // X-NUCLEO-IHM04A1 OK
nBlock_ValueTrig        nb_nBlockNode6_ValueTrig  (0x30);
nBlock_StringFormat     nb_nBlockNode7_StringFormat ("Value: %d\n");
nBlock_StringSerial     nb_nBlockNode8_StringSerial (USBTX, USBRX);
nBlock_Ticker           nb_nBlockNode9_Ticker     (1000);
nBlock_FlipFlop         nb_nBlockNode10_FlipFlop  (0);
nBlock_GPOUT            nb_nBlockNode11_GPOUT     (LED1, PullNone, 1);

// -*-*- List of connection objects -*-*-
nBlockConnection    n_conn0( &nb_nBlockNode10_FlipFlop,  0,  &nb_nBlockNode11_GPOUT,     0);
nBlockConnection    n_conn1( &nb_nBlockNode9_Ticker,     0,  &nb_nBlockNode10_FlipFlop,  0);
nBlockConnection    n_conn2( &nb_nBlockNode7_StringFormat, 0, &nb_nBlockNode8_StringSerial, 0);
nBlockConnection    n_conn3( &nb_nBlockNode5_GPIN,       1,  &nb_nBlockNode6_ValueTrig,  0);
nBlockConnection    n_conn4( &nb_nBlockNode2_GPIN,       1,  &nb_nBlockNode3_ValueTrig,  0);
nBlockConnection    n_conn5( &nb_nBlockNode1_ValueTrig,  0,  &nb_nBlockNode4_L298,       0);
nBlockConnection    n_conn6( &nb_nBlockNode1_ValueTrig,  0,  &nb_nBlockNode7_StringFormat, 0);
nBlockConnection    n_conn7( &nb_nBlockNode3_ValueTrig,  0,  &nb_nBlockNode4_L298,       0);
nBlockConnection    n_conn8( &nb_nBlockNode3_ValueTrig,  0,  &nb_nBlockNode7_StringFormat, 0);
nBlockConnection    n_conn9( &nb_nBlockNode6_ValueTrig,  0,  &nb_nBlockNode4_L298,       0);
nBlockConnection    n_conn10( &nb_nBlockNode6_ValueTrig, 0,  &nb_nBlockNode7_StringFormat, 0);
nBlockConnection    n_conn11( &nb_nBlockNode0_GPIN,      1,  &nb_nBlockNode1_ValueTrig,  0);


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

        // Your custom code here!
    }
}

```

A simple way to flash the Nucleo board

1. Connect the Nucleo board to the PC
2. Wait until it appears as a disk drive (mbed)
3. Copy your .hex or .bin file to the new mbed drive