14D_MotorTest
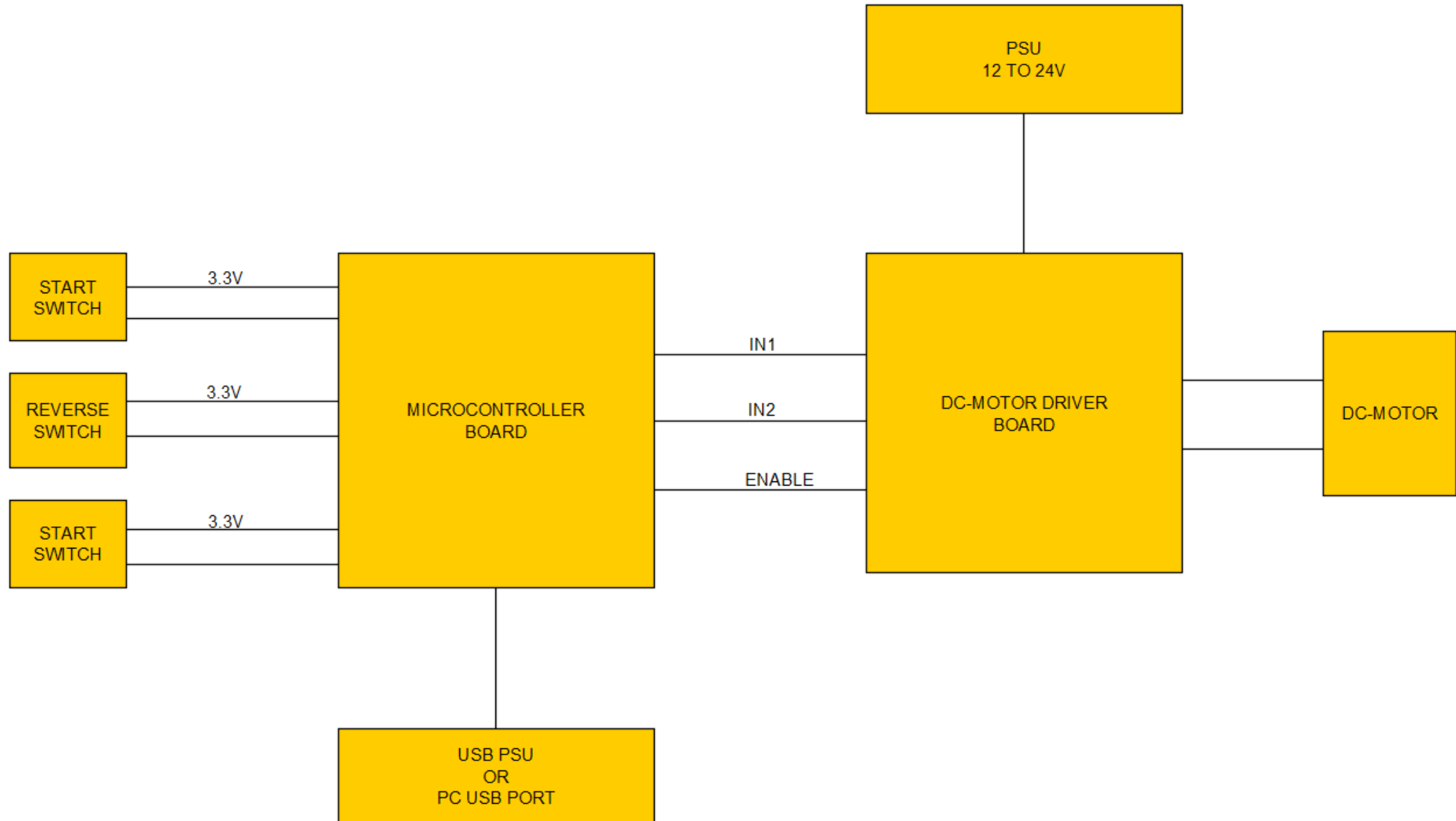
Motion control example
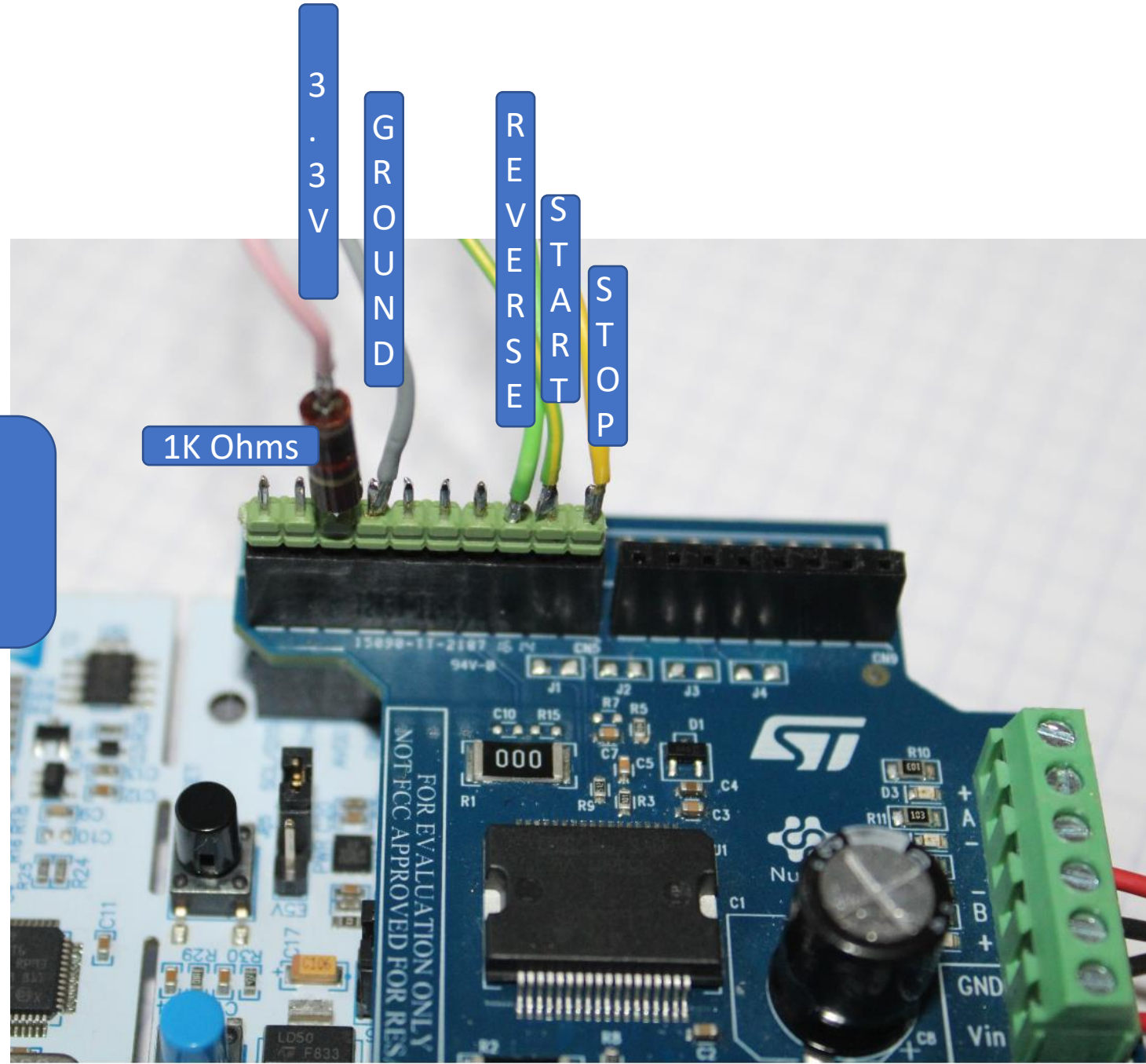
Nucleo_F401 and X-Nucleo_IHM04A1

With nBlocksStudio

BLOCK DIAGRAM
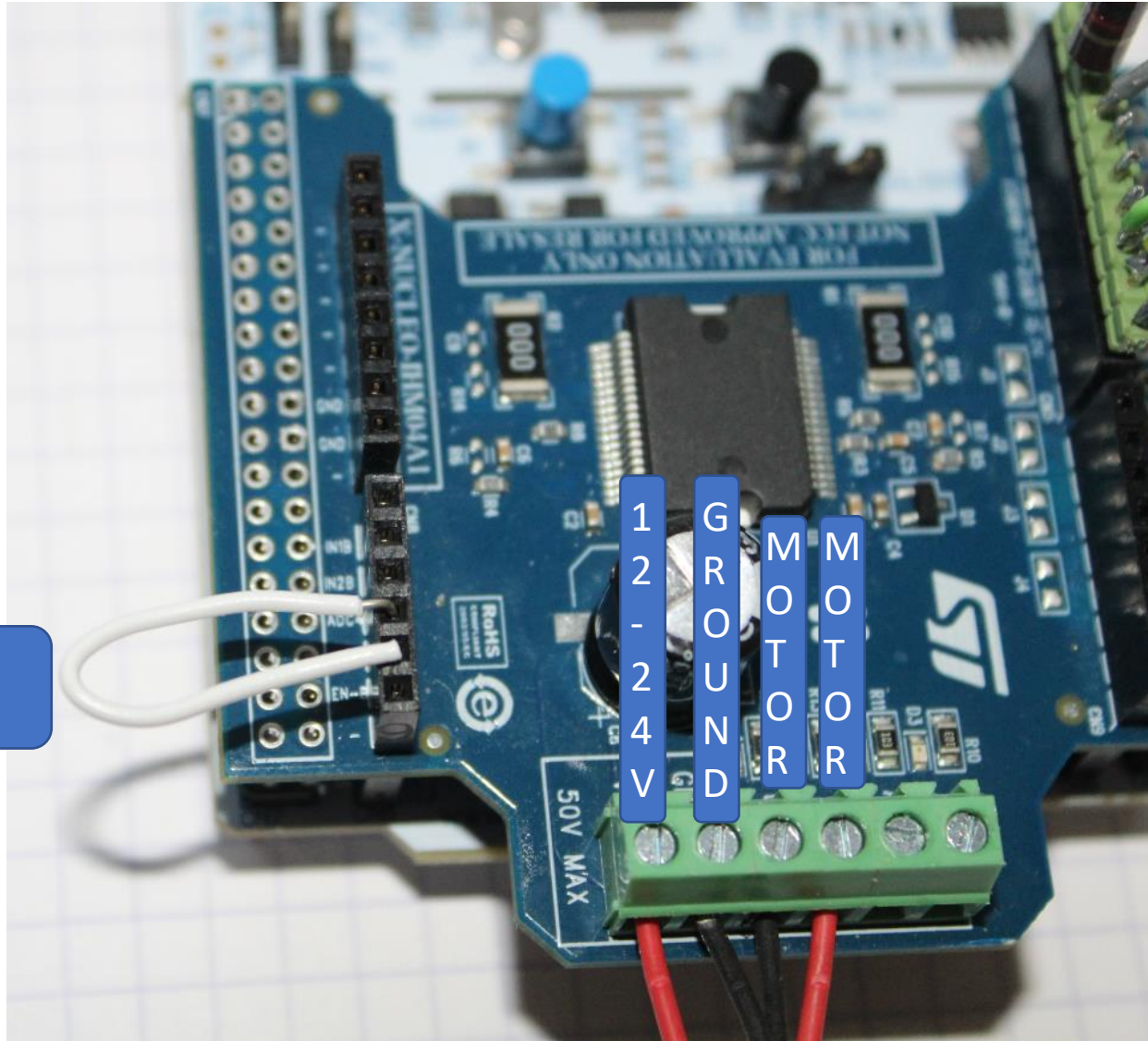
SWITCHES CONNECTION

3.3V

GROUND

REVERSE

START

STOP

1K Ohms

1K RESISTOR IN SERIES TO THE SWITCHES PROTECTS THE BOARD FROM SHORT-CIRCUIT 3.3V TO GND

BRIDGE MANDATORY

12-24V

GROUND

MOTOR

MOTOR

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!
    }
}
```