FIRMWARE_14D_MotorTest

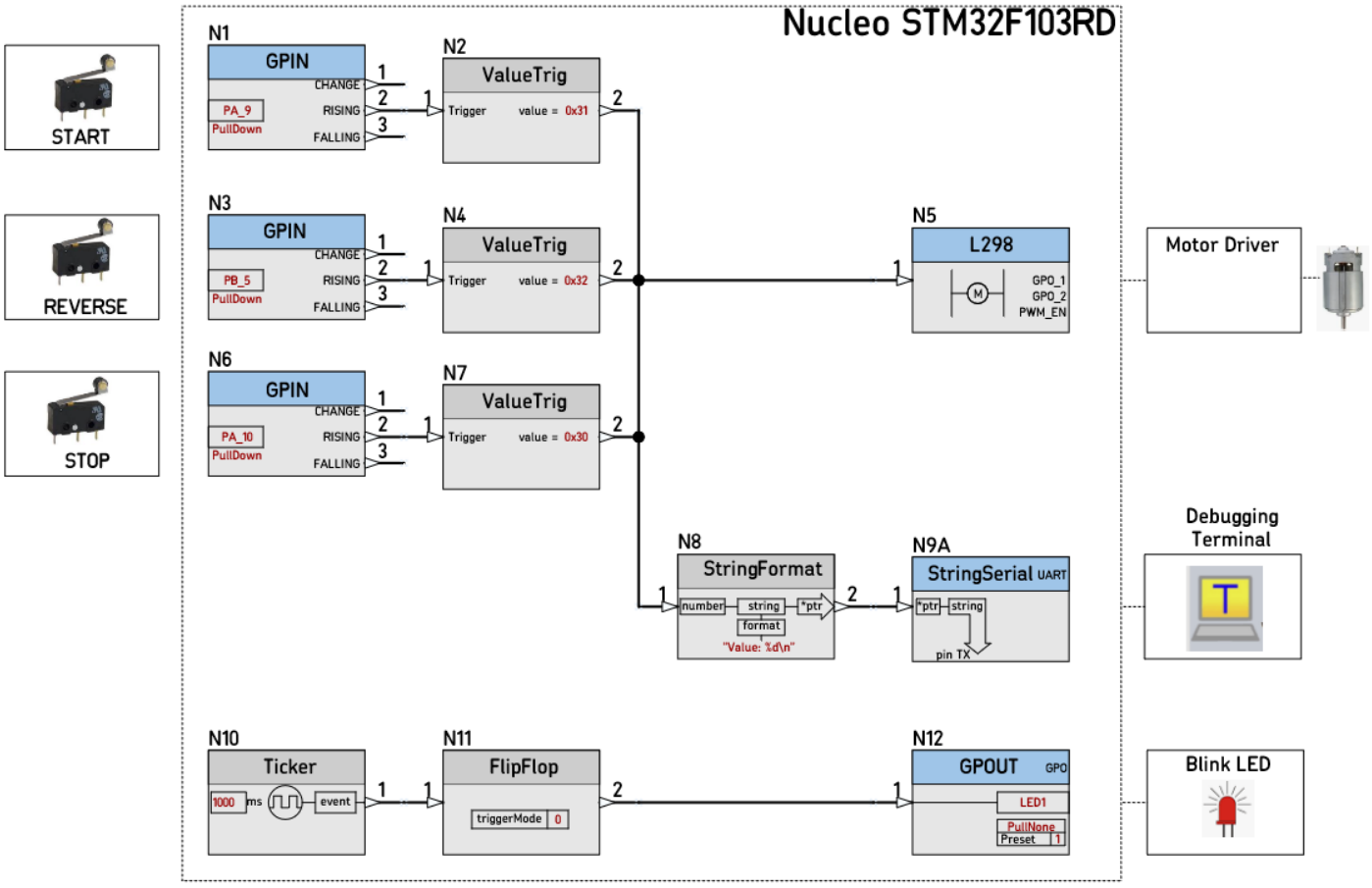
Nucleo F401 + X-NUCLEO-IHM04A1 version of 12D_MotorTest

This is a more compact H/W version due to smaller (Nucleo + X-Nucleo) PCBs.

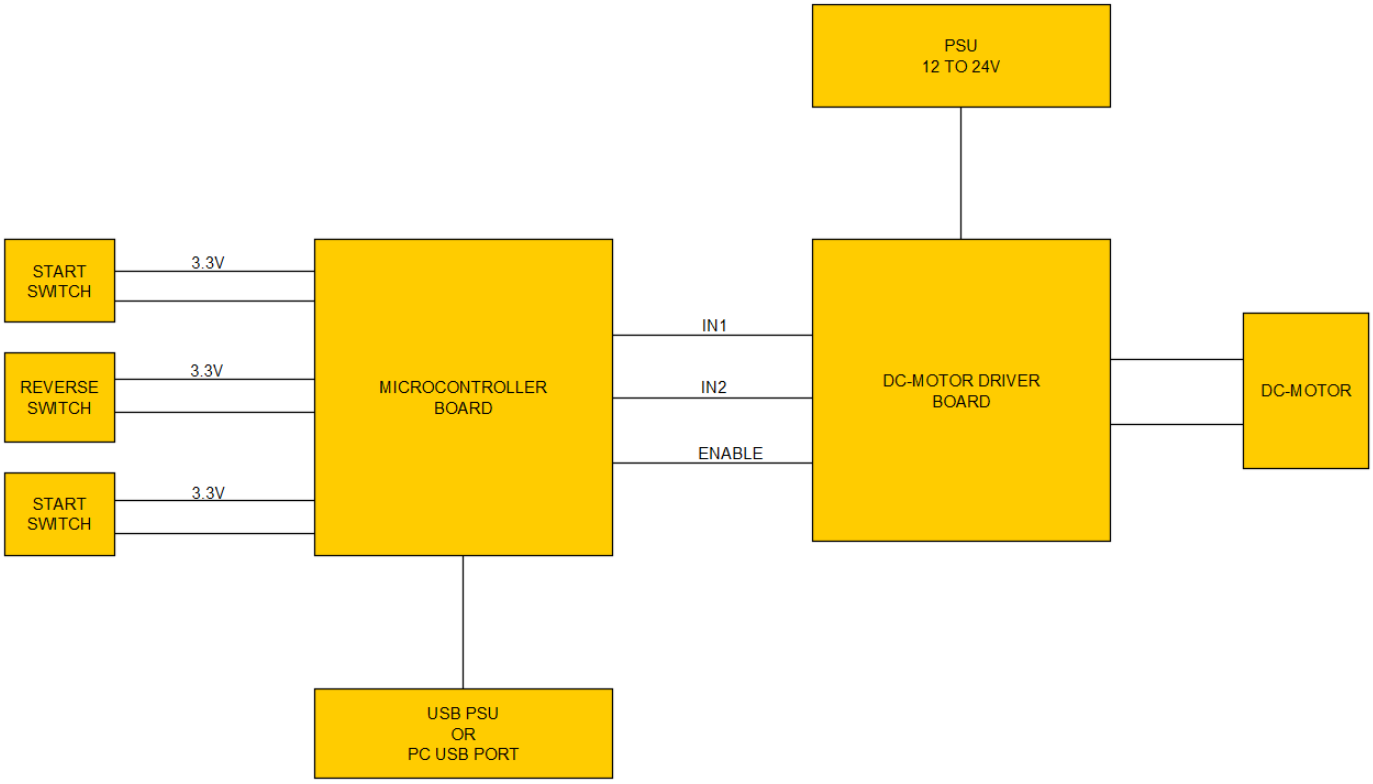
The nBlocksStudio Design is the same with 10D_MotorTest for mbed-LPC1768 + L298 and 12D_MotorTest for Nucleo-F401 + L298, only the paramaters that define the Pins to be used are different.

nBlocksStudio Design

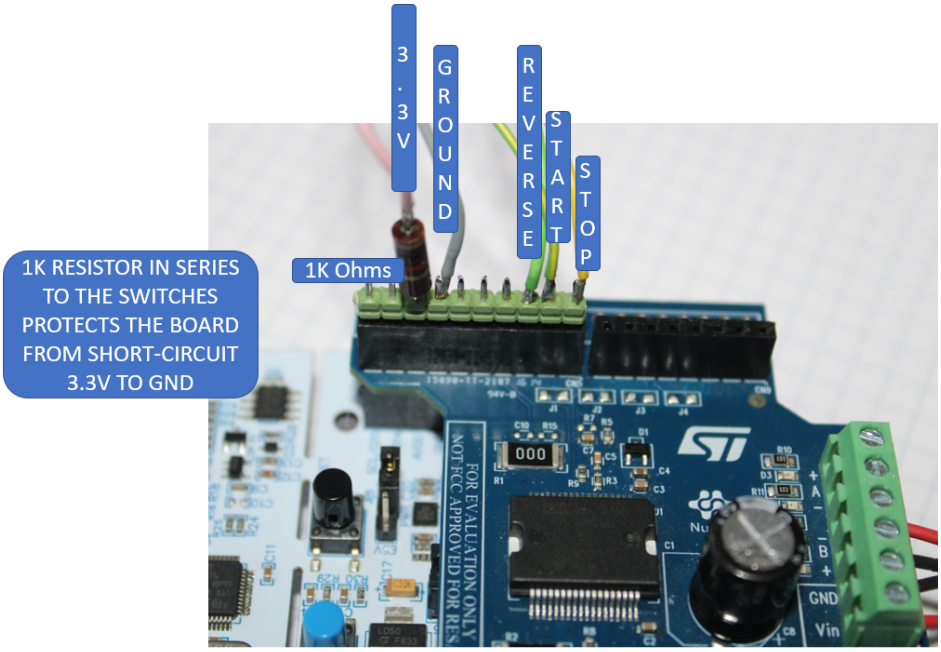
This is the Design of the 12D_MotorTest project. The I/O pins used in this project, are different and are modified in the main.cpp directly without using a Design Schematic.



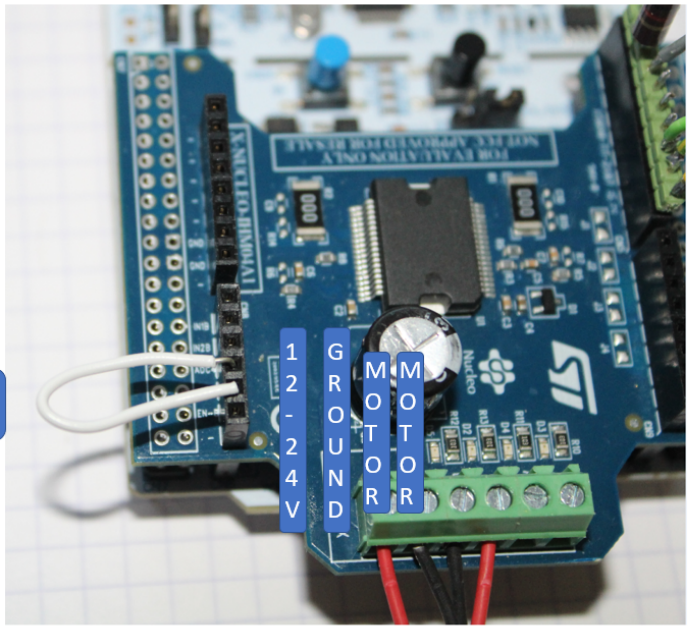
Block Diagram



Switches connection



Motor connection and bridge



main.cpp

The lines with comment "X-NUCLEO" are updated directly in this file manually

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!
    }
}

```