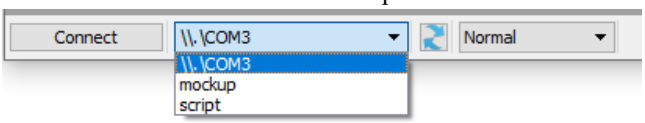
NCV70514R1DAGEVB Evaluation Board Test Procedure

Required Equipment and Instruments:

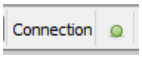
a) NCV70514R1DAGEVB daughter board
b) SPI Stepper Motor Driver Evaluation Kit NCV705XXLITEGEVK including NCV705XX Micro-stepping Motor Driver Evaluation Board User's Manual
c) Bench power supply with current limitation of 1A minimum
    a. As an alternative the power adapter 12V 2A which is usually supplied as part of the NCV705XXLITEGEVK can be used
d) GUI SW for NCV705XXLITEGEVK SPI Stepper Motor Driver installed on PC

Testing procedure

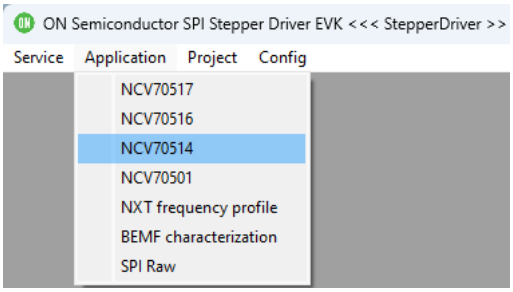
1) Insert NCV70514R1DAGEVB daughter board into NCV705XXLITEGEVK evaluation kit motherboard
2) Connect Stepper Motor to the EVK
3) Connect power supply 12V to the EVK and switch it on
4) Connect usb cable to the EVK
5) Run the SPI Stepper Motor Driver GUI SW – instructions how to use GUI SW are described in NCV705XX Micro-stepping Motor Driver Evaluation Board User's Manual
6) In GUI SW select the virtual COM port to which Evaluation Kit is connected:



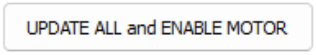
7) If you are asked to update firmware, click “No”
8) After clicking “Connect” button, the successful connection status should be indicated in status bar:



9) In menu “Application” select “NCV70514”



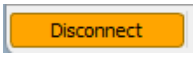
10) In Application window click “Read All” button. In Status Register 0x0A, MSP = 16 should be read out.
    If you did not use “Read All” button, you need also read diagnostic Status Registers 0x08 and 0x09 to clear out potential errors which would prevent enabling the output of motor driver.
11) In SPI Control Register 0x01 set MOTEN = 1 and RHBP = 1, in SPI Control Register 0x02 set IRUN = 400mA, other registers can be left with default values
12) Click button “UPDATE ALL and ENABLE MOTOR” or click button “Write” at Control Registers 0x01 and 0x02



13) In left part of the window in “NXT pulse generator” section check “MCU” checkbox, fill number 1000 [Hz] and click button “Set Freq”
14) Motor should start slowly rotating
15) Check “DIR” checkbox and motor should change direction of rotation
16) By this procedure the daughterboard is now tested (SPI pins, NXT and DIR pins and connection to motor via MOTXP, MOTXN, MOTYP, MOTYN pins)
17) Please note that STEP0, STEP1 and RHB pins are not available at the connector between mother and daughter board and their control from GUI SW will not work by default. There is however a possibility to connect dedicated Test

points TPS0, TPS1 and TPRHB on daughter board with Test points STEP01, STEP1 and RHB on mother board by wires. However, if there is not a visible issue with solder joints on these pins, it is not necessary to test them exclusively.

18) Uncheck “MCU” checkbox and write MOTEN = 0 into Control Register 0x01 to deactivate the driver
19) Click Disconnect button



20) Disconnect usb cable
21) Switch off power supply
22) Remove NCV70514R1DAGEVB daughter board