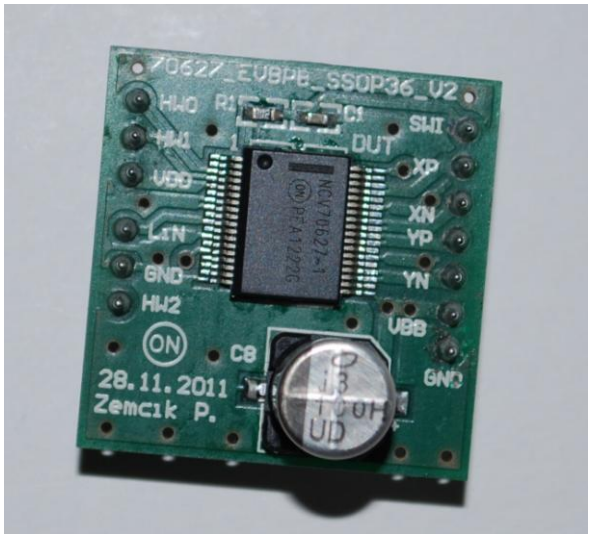
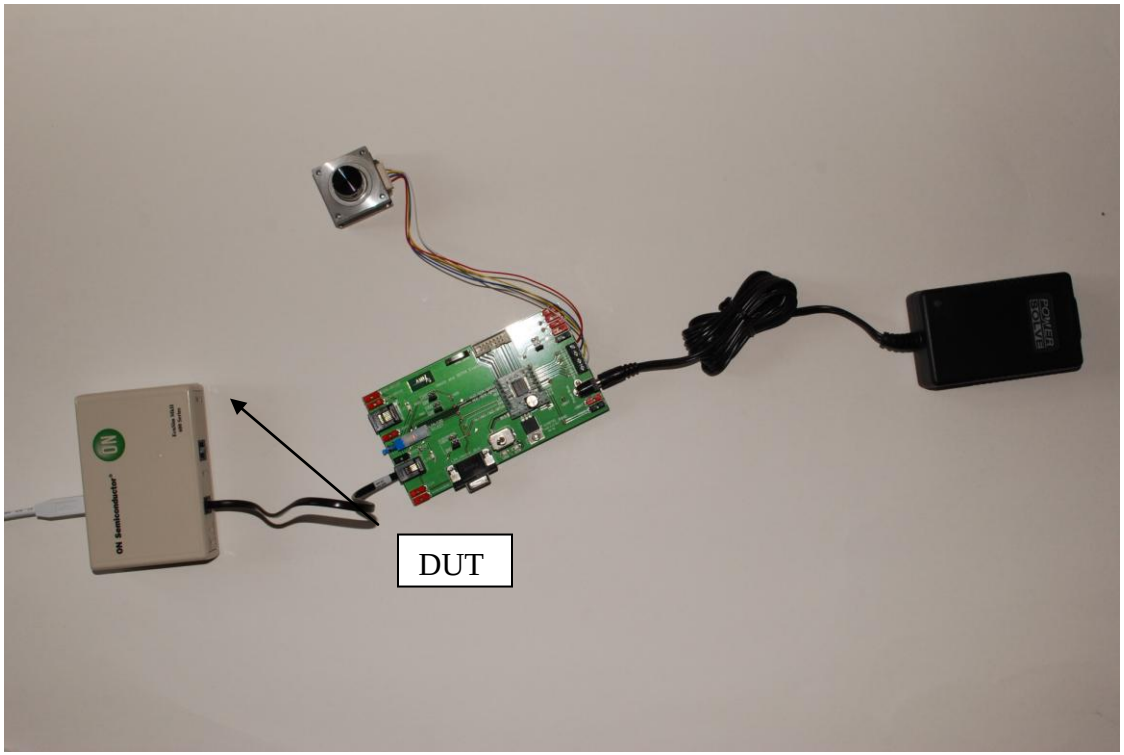
Test Procedure for the NV706271R2DBGEVB Evaluation Board



For the test of this DUT, the ON semiconductor evaluation kit for the AMIS_306xx and ON Semi_30627 has to be used. The procedure assumes that the test engineer is familiar with the use of the evaluation board and the GUI software.

Wire up the Evaluation kit and install the DUT.



At initial start-up place the jumpers at the evaluation board as follows:

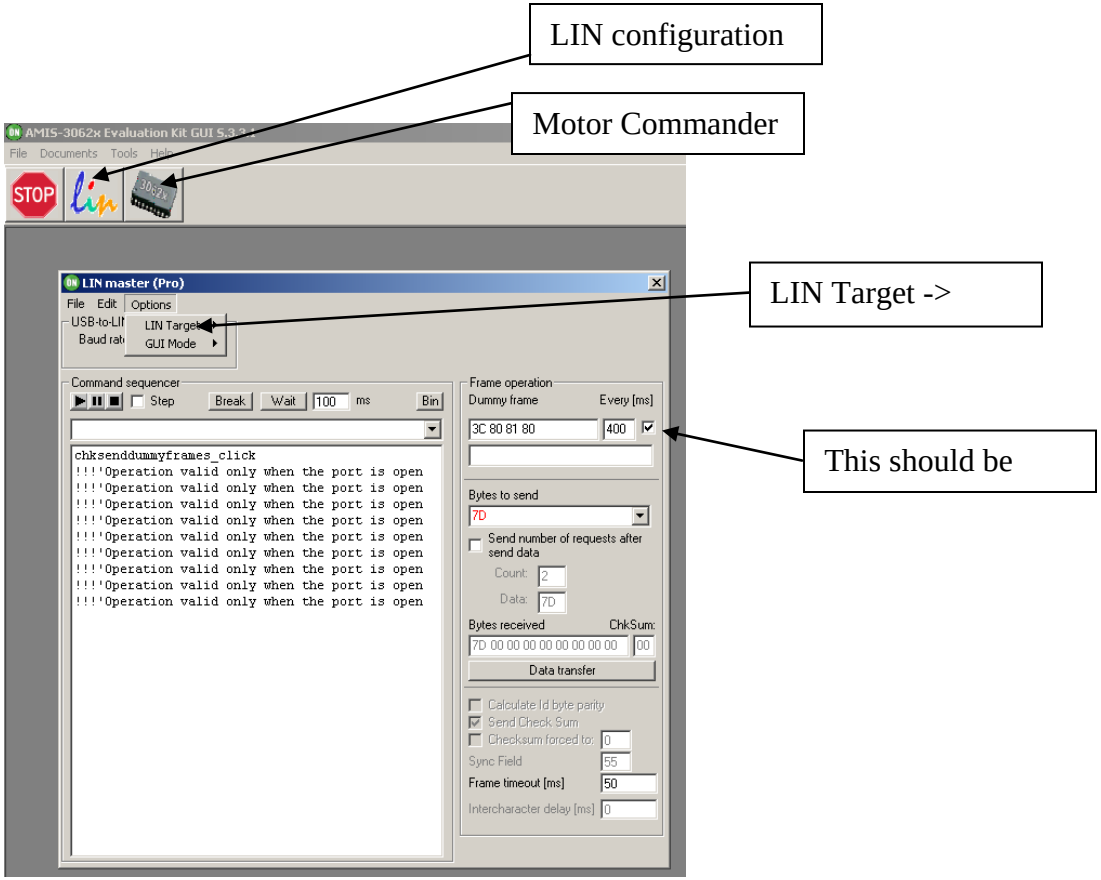
HW0 at GND position
HW1 at GND position
HW2 at GND position
SWI at GND position

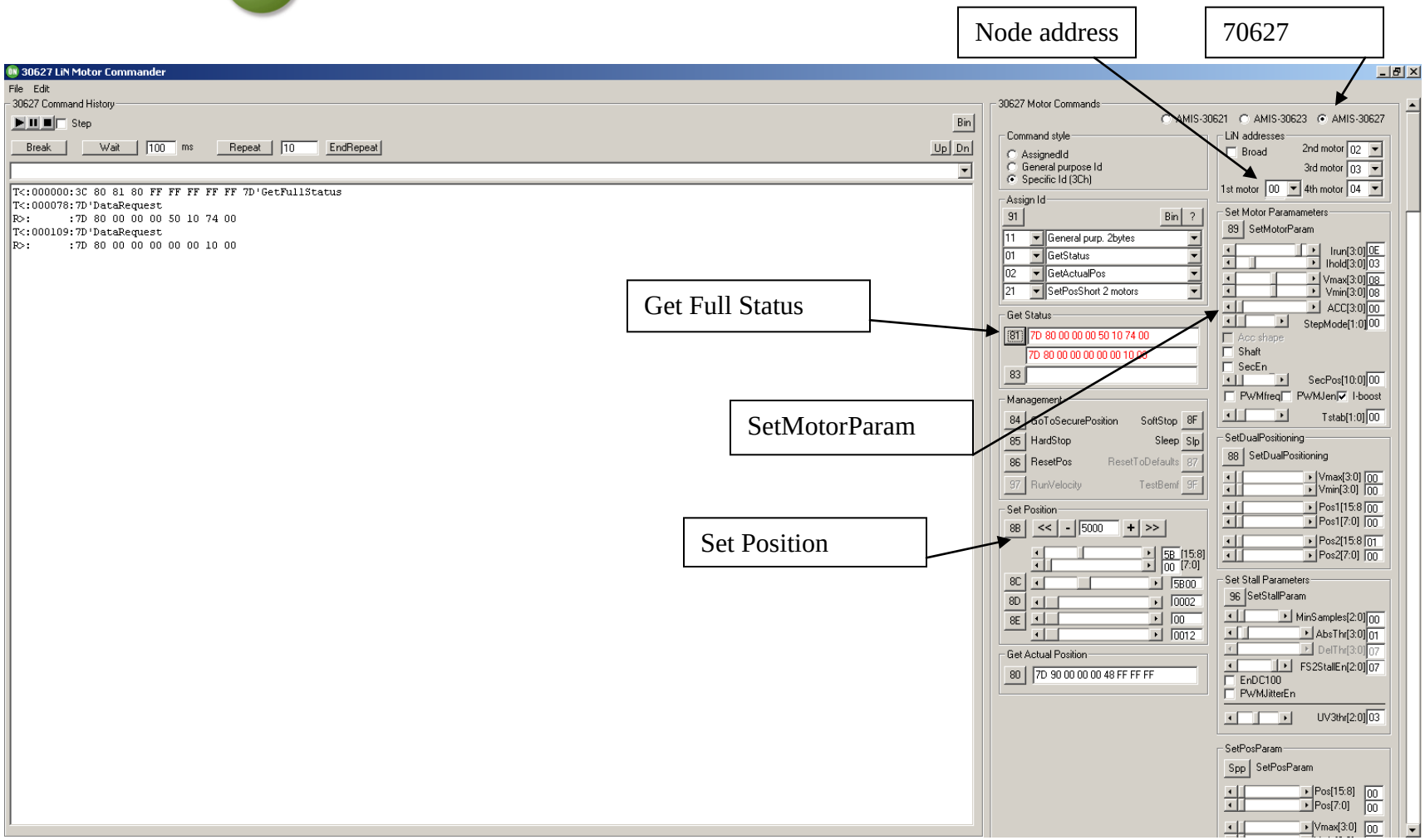
Power up the evaluation board.

Start the GUI software of the kit.

Adjust USB operation in the options menu.
Guarantee that dummy LIN frames are regularly send (400ms).

After LIN set-up start the motor commander.




Node address
70627
30627 LiN Motor Commander
File Edit
30627 Command History
Step
Break
Wait
100
ms
Repeat
10
EndRepeat
Bin
Up
Dn
T<:000000:3C 80 81 80 FF FF FF FF 7D'GetFullStatus
T<:000078:7D'DataRequest
R>: :7D 80 00 00 00 50 10 74 00
T<:000109:7D'DataRequest
R>: :7D 80 00 00 00 00 00 10 00
30627 Motor Commands
AMIS-30621
AMIS-30623
AMIS-30627
Command style
AssignedId
General purpose Id
Specific Id (3Ch)
LiN addresses
Broad
2nd motor
3rd motor
1st motor
4th motor
Assign Id
General purp. 2bytes
GetStatus
GetActualPos
SetPosShort 2 motors
Get Status
7D 80 00 00 00 50 10 74 00
7D 80 00 00 00 00 00 10 00
Set Motor Paramameters
SetMotorParam
Irun[3:0]
Ihold[3:0]
Vmax[3:0]
Vmin[3:0]
ACC[3:0]
StepMode[1:0]
Acc shape
Shaft
SecEn
SecPos[10:0]
PWMfreq
PWMJen
I-boost
Tstab[1:0]
Management
GoToSecurePosition
SoftStop
HardStop
Sleep
ResetPos
ResetToDefaults
RunVelocity
TestBemf
SetDualPositioning
Vmax[3:0]
Vmin[3:0]
Pos1[15:8]
Pos1[7:0]
Pos2[15:8]
Pos2[7:0]
Set Position
5000
Set Stall Parameters
SetStallParam
MinSamples[2:0]
AbsThr[3:0]
DelThr[3:0]
FS2StallEn[2:0]
EnDC100
PWMJitterEn
UV3thr[2:0]
Get Actual Position
7D 90 00 00 00 48 FF FF FF
SetPosParam
SetPosParam
Pos[15:8]
Pos[7:0]
Vmax[3:0]
Get Full Status
SetMotorParam
Set Position

Tests:

1) **Device accessibility via LIN at LIN address 00:**

   Perform a GetFullStatus command 2 times by clicking the GetFullStatus button twice.

   The DUT should respond with an in frame status respond: 7D 80 00 00 xx xx 10 74 00

2) **SWI input check:**

   Remove jumper SWI and perform again a GetFullStatus command:
   Check if the status bit is presenting that the SWI input is changed.

   The DUT should respond with an in frame status respond: 7D 80 00 00 xx xx **0**0 74 00

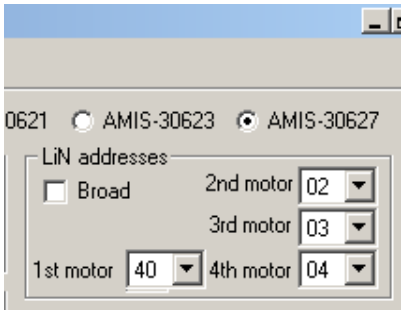
3) **Device accessibility via LIN at LIN address 40:**

   Switch off the Evaluation board and place jumper HW0 to position VDD
   Switch on the Evaluation board.

   First perform a GetFullStatus command 2 times at LIN address 00 by clicking the GetFullStatus button twice.

   The DUT should **not** respond. The GetFullSatus is presented as: 7D 00 00 00 00 00 00 00 00

   Change the LIN address in the GUI to 40:



Again perform a GetFullStatus command.

Now, the DUT should respond with its status: 7D C0 00 00 00 00 00 74 00

4) Device accessibility via LIN at LIN address 20:

Switch off the Evaluation board and place jumper HW0 back to position GND and place jumper HW1 to VDD
Switch on the Evaluation board.

Repeat the command as mentioned in the previous test with the LIN address set to 20.
Check again the DUT status response: 7D C0 00 00 00 00 00 74 00

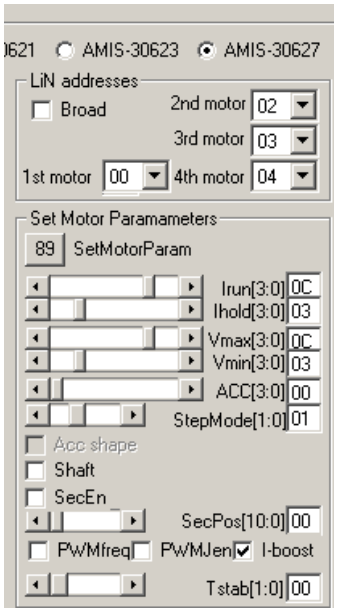
5) Device accessibility via LIN at LIN address 10:

Switch off the Evaluation board and place jumper HW1 back to position GND and place jumper HW2 to VBAT
Switch on the Evaluation board.

Repeat the command as mentioned in the previous test with the LIN address set to 10.
Check again the DUT status response: 7D C0 00 00 00 00 00 74 00

6) Motor Operation in Forward and Backward directions:

Set the motor parameters as presented in following picture:



Give a position with the position slider and click the Set Position Command button. The motor should perform a positioning to the given position.
Slide back the position slider and click the Set Position Command button again. The motor should now perform a motion in opposite direction.

The test is positively finished when above responses and reactions are given. Switch off the Evaluation kit and remove the DUT.

When removing the DUT, prevent for bending the connector pins!

DUT: …….. Date: …….. Operator: …….

Test:	Description:	Passed:
1	Device accessibility via LIN at LIN address 00	
2	SWI input check	
3	Device accessibility via LIN at LIN address 40	
4	Device accessibility via LIN at LIN address 40	
5	Device accessibility via LIN at LIN address 40	
6	Motor Operation in Forward and Backward directions	

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Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru

www.lifeelectronics.ru