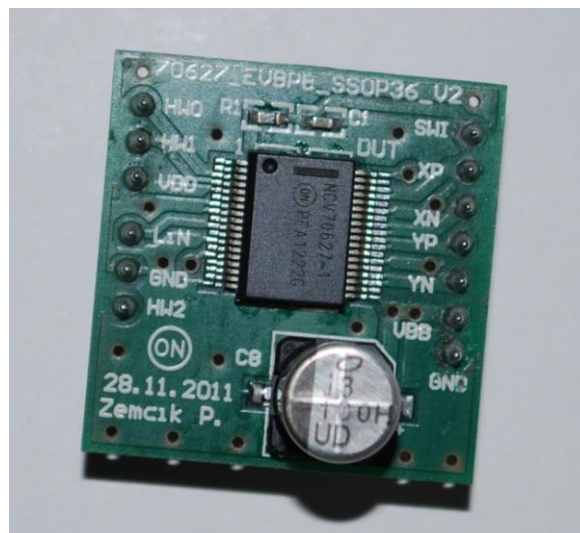


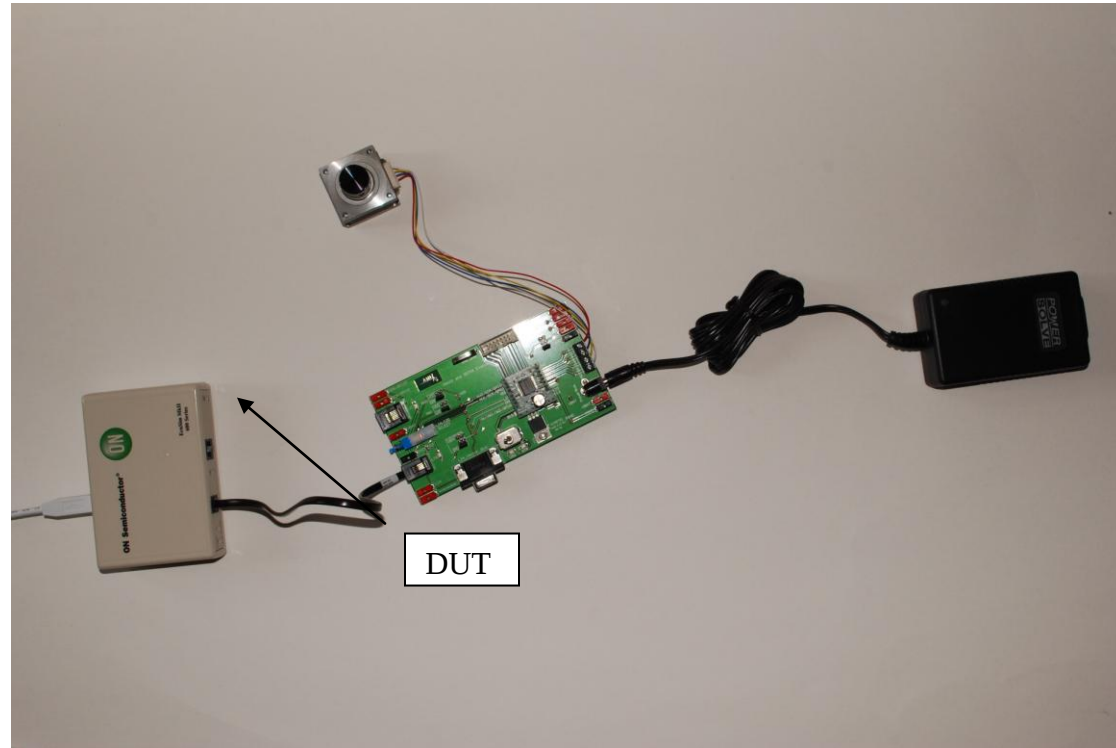


Test Procedure for the NV706271R2DBGEVB Evaluation Board



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:

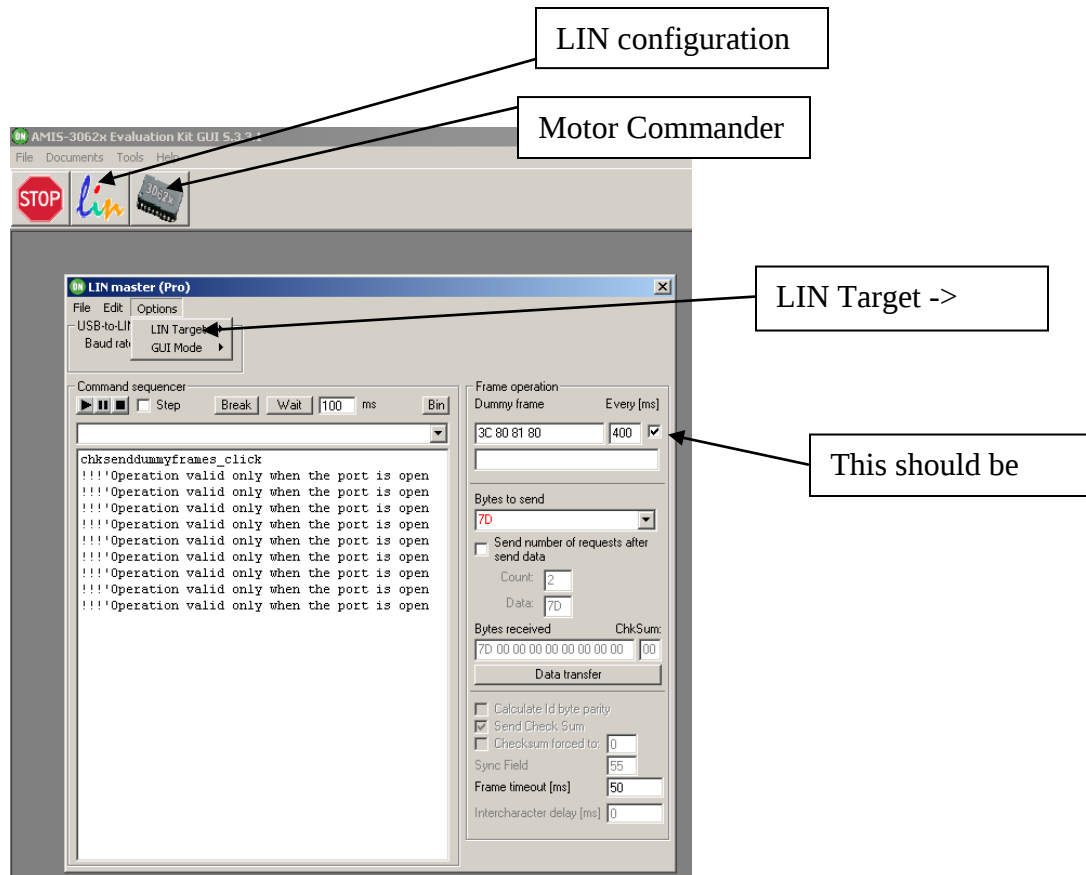
HW0 at GND position
HW1 at GND position
HW2 at GND position
SWI at GND position

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.





30627 LIN Motor Commander

File Edit

30627 Command History

Break Wait 100 ms Repeat 10 EndRepeat

Tx: 000000:3C 80 81 80 FF FF FF FF 7D'GetFullStatus
 Tx: 000078:7D'DataRequest
 Rx: :7D 80 00 00 00 50 10 74 00
 Tx: 000109:7D'DataRequest
 Rx: :7D 80 00 00 00 00 00 10 00

Node address 70627

Get Full Status

SetMotorParam

Set Position

30627 Motor Commands

Command style
☐ AssignedId
☐ General purpose Id
☒ Specific Id (3Ch)

Assign Id
 91 General purp. 2bytes
 01 GetStatus
 02 GetActualPos
 21 SetPosShort 2 motors

Get Status
 81 7D 80 00 00 00 50 10 74 00
 7D 80 00 00 00 00 00 10 00
 83

Management
 84 GoToSecurePosition SoftStop 8F
 85 HardStop Sleep Slp
 86 ResetPos ResetToDefaults 87
 97 RunVelocity TestBemf 9F

Set Position
 88 << - 5000 + >>
 5B [15:8]
 00 [7:0]
 8C 5B00
 8D 0002
 8E 00
 0012

Get Actual Position
 80 7D 90 00 00 00 48 FF FF FF

Set Motor Parameters
 89 SetMotorParam
 Irun[3:0] 0E
 Ihold[3:0] 03
 Vmax[3:0] 08
 Vmin[3:0] 08
 ACC[3:0] 00
 StepMode[1:0] 00
 Acc shape
 Shaft
 SecEn
 SecPos[10:0] 00
 PwMfreq PwMJen I-boost
 Tstab[1:0] 00

Set Dual Positioning
 88 SetDualPositioning
 Vmax[3:0] 00
 Vmin[3:0] 00
 Pos1[15:8] 00
 Pos1[7:0] 00
 Pos2[15:8] 01
 Pos2[7:0] 00

Set Stall Parameters
 96 SetStallParam
 MinSamples[2:0] 00
 AbsTh[3:0] 01
 DelTh[3:0] 07
 FS2StallEn[2:0] 07
 EnDC100
 PwMJitterEn
 UV3th[2:0] 03

Set Pos Param
 Spp SetPosParam
 Pos[15:8] 00
 Pos[7:0] 00
 Vmax[3:0] 00



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 **00** 74 00

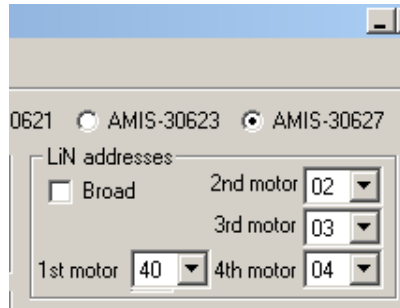
3) Device accessibility via LIN at LIN address 40:

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 GetFullStatus 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	