

Test Procedure for the NCV7703GEVB Evaluation Board



This document should be used in conjunction with the NCV7703EVB/D document to confirm board functionality after assembly. Tests are performed using a computer with a parallel port interface and its associated custom operational program.

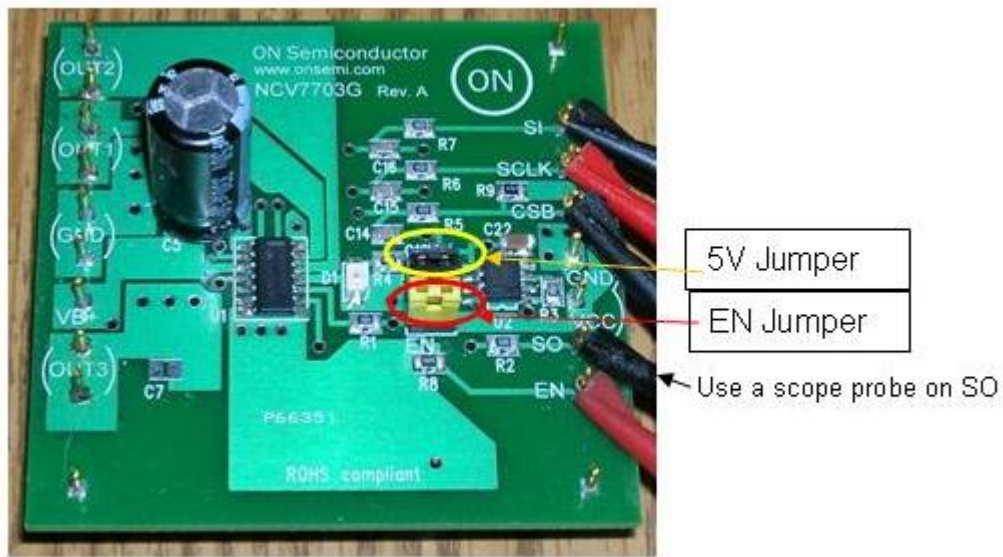


Figure 1. NCV7703 Evaluation Board



Figure 2. NCV7703 SPI Interface Buffer Board

NCV7703 Evaluation Board Test Procedure

Electrical Hardware	Software Interface
13.2 V Power Supply, 1 A min.	NCV7708 Driver.exe VB program
5V Power Supply, 1A min.	
2 Channel Oscilloscope	Computer with parallel port programmed to execute a VB.net program.
Parallel port Ribbon Connector	
Power leads for power supply	
4 clip-clip leads for logic pin connections	
1/4W 10K Resistor Load	
NCV7703 Evaluation Board	
NCV7703 SPI Interface Buffer Board	

Table 1: Required Equipment

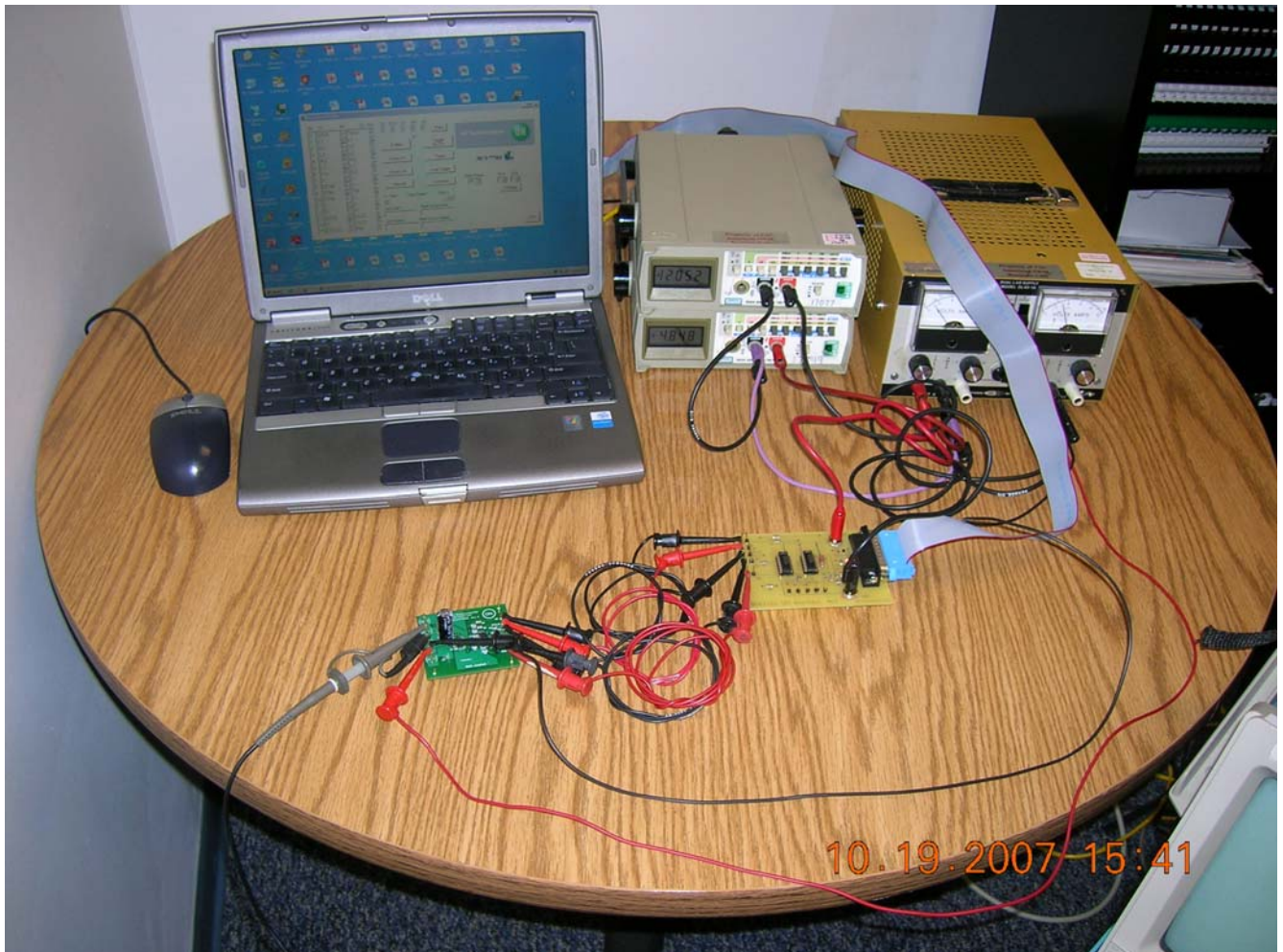


Figure 3. Test Setup

Test Procedure:

NCV7703 Evaluation Board Test Procedure

8. Verify operation of the NCV8501.
 - a. Measure the voltage on VCC.
 - i. Verify it is at 5V.

9. Verify output driver functionality.
 - a. Check the low-side drivers.**
 - i. Put a 10k load from OUT1 to VB+.
 - ii. Click on the Trigger Loop button.
 - iii. Click on the Enable button of the parallel port software interface.
 1. Verify OUT1 is high (13.2V).
 - iv. Click on the L1 button (it will become highlighted in yellow).
 1. Verify OUT1 is low.
 - v. Click on the L1 button (the yellow highlight will be removed).
 1. Verify OUT1 is high. **NOTE – This puts the device back in a state where L1 is off. This is critical before attempting to turn H1 on in the next step.**
 - vi. Click on the Enable button to turn the device off.
 - b. Check the high-side drivers.**
 - i. Move the 10k load to a position of OUT1 to GND.
 - ii. Click on the Enable button of the parallel port software interface.
 1. Verify OUT1 is low.
 - iii. Click on the H1 button (it will become highlighted in yellow).
 1. Verify OUT1 is high (13.2V).
 - iv. Click on the H1 button (the yellow highlight will be removed).
 1. Verify OUT1 is low. **NOTE – This puts the device back in a state where H1 is off. This is critical before attempting to turn L1 on.**
 - v. Click on the Enable button to turn the device off.
 - c. Repeat 9a & 9b for OUT2 and OUT3.

- 10. Verify SO connection.**
 - a. Put a scope probe on SO.
 - b. Re-enable the part by clicking on the Enable pin after checking OUT3 (H3) from test #9.
 - i. Verify the SO signal exists (look for a square wave signal).
 - c. Click on the Enable button to turn the device off.
 - i. Verify the SO signal is gone.

11. Verify EN connection
 - a. Remove the wire connecting the EN of the SPI Interface Buffer Board to the EN of the Evaluation board. **This must be done BEFORE the next step, or damage to the SPI Interface Buffer Board may occur.**
 - b. Connect the EN jumper.
 - i. Verify the SO signal reappears.

Revision Summary

Rev 0 – October 19, 2007

Rev 1 – November 16, 2007

- 1) Added text to Figure 1.
- 2) Added to the Electrical Hardware Table.
- 3) Added required software files and note for USB solution.
- 4) Modified setup to remove SO connection.
- 5) Corrected ribbon cable description.
- 6) Minor text modifications.
- 7) Modified SO testing without SCLK signal.