ON Semiconductor®

Test Procedure for the NCV7683GEVB Evaluation Board

Test Procedure:

1) Connect all jumpers on the board with the **exception** of Jumper 18 (“SEQUENCE REPEAT ON”).
This includes J1−J20. This sets the board up to display sequencing.
2) Configure all toggle switches down (towards the bottom of the board).
3) Connect a 14V power supply to Vbat and GND using the banana connectors on the board.
4) Toggle Switch

a. TAIL – Up. All LEDs should turn on.

b. TAIL– Down. All LEDs should turn off.

c. STOP - Up. All LEDs should turn on at a much higher intensity than TAIL.

d. STOP – Down. All LEDs should turn off.

e. TURN – Up. Each LED string should turn on in a sequence from left to right across the board until all 8 strings are on and
remain on.

f. TURN – Down. All LEDs should turn off.

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g. Move the Jumper from “SEQUENCE REPEAT OFF” to “SEQUENCE REPEAT ON”.

h. TURN – Up. A sequence event should display should occur [as in (e)], but should now repeat itself indefinitely.

i. SEQ1 (both switches) – Up. There should be no change to the display.

j. SEQ1 (both switches) – Down. There should be no change to the display.

k. SEQ2 (both switches) – Up. The display should change from a single string sequence to a dual string sequence.

l. SEQ1, SEQ2 (4 switches) – Up. The display should change from a dual string sequence to a quad string sequence.

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m. Return TURN switch and SEQx switches all to Down position.

n. STOP – Up

i. Remove OUT1,2 jumper (IC1). The string above it should go out and the DIAG LED (D30) should illuminate.
ii. Place OUT1,2 jumper back (IC1). The string should re-illuminate.
iii. Remove OUT3,4 jumper (IC1). The string above it should go out and the DIAG LED (D30) should illuminate.
iv. Place OUT3,4 jumper back (IC1). The string should re-illuminate.
v. Remove OUT5,6 jumper (IC1). The string above it should go out and the DIAG LED (D30) should illuminate.
vi. Place OUT5,6 jumper back (IC1). The string should re-illuminate.

vii. Remove OUT7,8 jumper (IC1). The string above it should go out and the DIAG LED (D30) should illuminate.

viii. Place OUT7,8 jumper back (IC1). The string should re-illuminate and DIAG LED (D30) should turn back on.

ix. Measure OUT1,2, OUT3,4, OUT5,6, OUT7,8 of IC2. The voltage should be <5V.

o. STOP, LATCH OFF – Up (enabled).

i. Remove OUT1,2 jumper (IC1). All LEDs should turn off.

ii. Replace OUT1,2 jumper (IC1). LEDs should remain off.

iii. Toggle STOP low → high. LEDs should turn back on.

iv. Repeat STOP, LATCH OFF – High (enabled).

v. Remove OUT1,2 jumper (IC1). All LEDs should turn off.

vi. Replace OUT1,2 jumper (IC1). LEDs should remain off.

vii. Temporarily ground the DIAG pin test point access on the DIAG jumper (J19). The LEDs should illuminate.

p. STOP - Up, LATCH OFF – Down (disabled).

i. Remove jumper Vstring (IC1). 1st 4 strings of LEDs should go out.

ii. Replace jumper Vstring (IC1). 1st 4 strings of LEDs should illuminate.

iii. Remove jumper Vstring (IC2). 2nd 4 strings of LEDs should go out.

iv. Replace jumper Vstring (IC2). 2nd 4 strings of LEDs should illuminate.

End of Test.