



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.

 - 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.

 - 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.