Test Procedure for the CAT4106AGEVB Evaluation Board

Test Procedure:

1. Initial Setup and Jumper Configuration

1.1. Verify that jumpers J1 to J4 are shunted.
1.2. Verify that jumper J5 has two shunts installed. One in the upper position (pin 1 and 2) and another in the lower position (pin 3 and 4).
1.3. Verify that jumper J6 is shunted in the middle position (pin 2 and 3).
1.4. Connect an LED string consisting of 4 LEDs in series to the CAT4106. Connect the anode end of the LED string to test point VOUT. Connect the cathode end of the LED string to pin 1 (LED1) of jumper J6. The LEDs should have a 350mA or greater current rating.
1.5. Set the cursor of potentiometer RSET to the mid-scale position.

2. Power Supply

2.1. Connect an external 12V DC power supply between the test points 'VL' and 'GND'. Connect the positive terminal of the supply to pin VL and the negative terminal to pin GND. There is no protection against reverse voltage on the VL and GND terminals.

3. Test Procedure

3.1. Connect the 'EN/PWM' test point to GND. In this mode, the CAT4106 will be disabled.

3.2. Turn on the external power supply.

3.3. Connect the 'EN/PWM' test point to the 'VIN' test point. The CAT4106 will be enabled and the LED string will light up.

3.3. Rotate the cursor on potentiometer RSET. The LEDs' brightness will change.

3.4. Measure the voltage at test point 'VOUT'. It should measure between approximately 11 and 14 volts. This voltage is directly proportional to the brightness of the LED's.

3.5. Verify the internal switching frequency (F_{SW} ~ 1.0MHz - typically) using an oscilloscope probe connected between test points SW and GND.

3.6. Disconnect the LED string. The "Fault Detection" red LED should light up.

3.7. Connect the 'EN/PWM test point to GND. The CAT4106 will be disabled and the LEDs should turn off.

3.8. Turn off the external power supply.