

# NCV8855EVB

## TEST PROCEDURE

### Equipment Needed

- Power Supplies (1 High Power, 1-3 Logic Level)
- Digital Volt Meter
- Digital Ampere Meter
- Function Generator (optional)

### Set-up

1. Remove jumpers from Vout 1, Vout 2, Vout 3, and Vout 4 voltage select jumpers.
2. Set the ISNS1+ and ISNS2+ jumpers to the middle positions (VBATT)
3. Set the high power supply to 13.2 V and a current limit of at least 1.5 A.
4. Connect VBATT to the positive end of the power supply and the adjacent GND to the negative end of the power supply.
5. The DC current on VBATT should be around 6  $\mu$ A

### Switcher Test

6. Set one of the logic level power supplies to a voltage between 2.0 V and 5.5 V.
7. Connect SYS\_EN to the positive end of the power supply and a GND pin to the negative end of the power supply.
8. Switcher 1 and 2 will turn on. Switcher 2 includes a minimum load of 340  $\Omega$  to ensure continuous conduction mode switching. The DC current on VBATT should be around 37 mA.
9. The Vout1 and Vout2 should be around 3.3 V.

### Synchronize the Switchers

10. Set the function generator to a square wave with logic low 0.0-0.8 V and logic high 2.0-5.5 V with frequency 190-255 kHz.
10. Connect the positive end of the function generator to the SYNC and the negative end to GND.
11. VSW1 will synchronize to the rising edge and VSW2 will synchronize to the negative edge of the square wave.

### Changing the Switcher Output Voltage

12. Remove the SYS\_EN voltage
13. Connect a jumper in the Vout1 (to change the Vout1 voltage) or Vout2 (to change the Vout2 voltage) areas between the middle pin labeled 3.3 V and the pin labeled 5 V (to change the output 5 V) or the pin labeled 8 V (to change the output voltage).
14. Reapply the SYS\_EN voltage
15. The output should now be around the set voltage. The current consumption from VBATT will increase if the output voltage is increased.

### LDO Test

16. With the SYS\_EN connected to a power supply, connect the LDO\_EN pin to a power supply in the same voltage range in a similar fashion.
17. Vout3 should be around 1.2 V and Vout 4 should be around 5 V.

### Changing the LDO Output Voltage

18. Remove the LDO\_EN Voltage (optionally the SYS\_EN voltage as well)
19. Add a jumper between the middle pin and the desired output voltage in the area around the respective outputs to change the voltage. (Note: Vout4 has a pin that may appear to be labeled 3.5 V due to overlapping a via. Actually this sets the output voltage to 8.5 V)

### High Side Switch Test

20. With a SYS\_EN powered as above, measure the voltage on HS\_E with respect to GND. This should be around 0 V.
21. Connect the HS\_S pin to a power supply in the same voltage range and in a similar fashion to the SYS\_EN voltage.
22. Measure the voltage on HS\_S with respect to GND. This should be around VBATT.

# NCV8855EVB

## JUMPER EXPLANATION

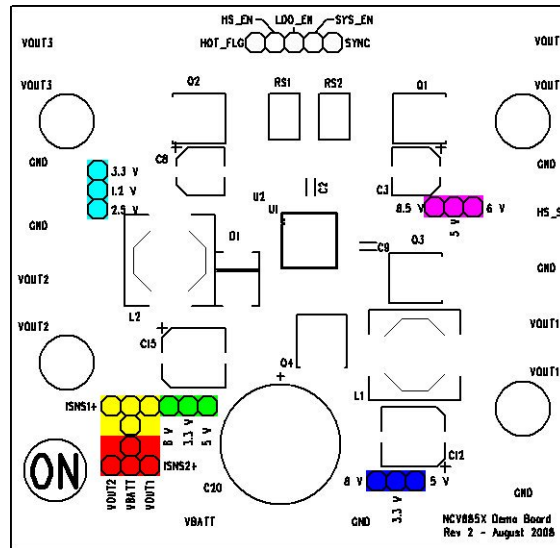


Figure 2. Jumper Groups

**Cyan:** VOUT3 (LDO1) output voltage selection. With no jumper VOUT3 is 1.2 V. With a jumper between the middle pin and the pin labeled 3.3 V, VOUT3 is 3.3 V. With a jumper between the middle pin and the pin labeled 2.5 V, VOUT3 is 2.5 V.

**Magenta:** VOUT4 (LDO2) output voltage selection. With no jumper VOUT4 is 5 V. With a jumper between the middle pin and the pin labeled 6 V, VOUT4 is 6 V. With a jumper between the middle pin and the pin labeled 8.5 V, VOUT4 is 8.5 V.

**Yellow:** VOUT3 (LDO1) input source selection. With a jumper between the middle two pins, the input to VOUT3 is VBATT. With a jumper between the middle pin and the pin inline with the other pin labeled VOUT2, the input to VOUT3 is VOUT2. With a jumper between the middle pin and the pin inline with the other pin labeled VOUT1, the input to VOUT3 is VOUT1 (The selected voltage must be at least 5 V to ensure proper function).

**Green:** VOUT2 (SMPS2) output voltage selection. With no jumper VOUT2 is 3.3 V. With a jumper between the middle pin and the pin labeled 5 V, VOUT2 is 5 V. With a jumper between the middle pin and the pin labeled 8 V, VOUT2 is 8 V.

**Red:** VOUT4 (LDO2) input source selection. With a jumper between the middle two pins, the input to VOUT4 is VBATT. With a jumper between the middle pin and the pin labeled VOUT2, the input to VOUT4 is VOUT2. With a jumper between the middle pin and the pin labeled VOUT1, the input to VOUT4 is VOUT1 (The selected voltage must be at least 5 V to ensure proper function).

**Blue:** VOUT1 (SMPS1) output voltage selection. With no jumper VOUT1 is 3.3 V. With a jumper between the middle pin and the pin labeled 5 V, VOUT1 is 5 V. With a jumper between the middle pin and the pin labeled 8 V, VOUT1 is 8 V.