



## Test Procedure for the NCV7694GEVB Evaluation Board

### Initial setup:

1. Connect jumper J1 for DC/DC operation
2. Connect jumper JOPEN
3. Make sure that straps S\_DG, S\_W, S\_D2w (S\_D2ir) are connected
4. The trimmers PETL should be set to 2k5 and PFRL to 1kΩ as default, but the values may be tuned by the customer.

### Required Equipment:

- Bench power supply with current limitation of 3A minimum or with huge output capacitor
- Multimeter
- NCV7694GEVB board

### Test procedure (DC/DC converter)

1. Connect setup as shown above
2. The current limitation should be set to the maximum.
3. Connect 14V to the CON1 connector with short cable connection from power source.
4. The VBAT indication LED should be active while FAULT indication LED should be turned off.
5. The voltage on the VSTR test point should be stable 11.8V
6. The total current consumption in standby mode should be around 8 mA.

### Test procedure (Flash pulse)

1. Apply 14V on the supply connector.
2. Apply flash pattern to the FLASH\_in or FLASH testpoint. (Respect maximum 3.3V on this pin)
3. The LEDs should respond based on the FLASH input signal. If the Flash signal will exceed 1 ms (the default setting) the LED current is turned off and FAULT is reported to the LED. Also if the flash pulses are send frequently than what is set on the PFRL, then the safety function is taken into account.
4. Check the current by any of LED Strings using A-meter connected instead of OLx jumper.

### Test procedure (Open Load detection)

1. Apply 14V on the supply connector.
2. Apply flash pattern to the FLASH\_in or FLASH testpoint. (Respect maximum 3.3V on this pin)
3. Open the J\_OPEN jumper during the normal operation
4. The LEDs should be turned off, and the FAULT indication diode should follow the flash input signal.
5. If the J\_OPEN jumper is recovered, the board will return to the normal behavior.

### Test procedure (Short to the GND)

1. Apply 14V on the supply connector.
2. Connect the J\_SH-GND jumper for short period of time and release.
3. The FAULT should be latched and reported
4. The fault can be recovered by first flash pulse which can be applied on the FLASH FLASH\_in connector.

### Test procedure (Short to the V<sub>STRING</sub>)

1. Apply 14V on the supply connector.
2. Apply the correct FLASH pattern.
3. Connect the J\_SH jumper. (emulation of the LEDs are beeing shorted)
4. The FAULT indication status should follow the FLASH pulses (The diagnostic of SC-VS is active only during FLASH = High)
5. The fault can be recovered by disconnection of the J\_SC jumper.

### Optional procedure (activation of the IR LEDs)

1. If the customer would like to use on-board IR LEDs, then the manual re-soldering of the S\_W and S\_IR has to be done.
2. The S\_IR has to be connected while S\_W has to be disconnected.
3. It is up to the customer responsible to not harm the human eyes with the IR LEDs