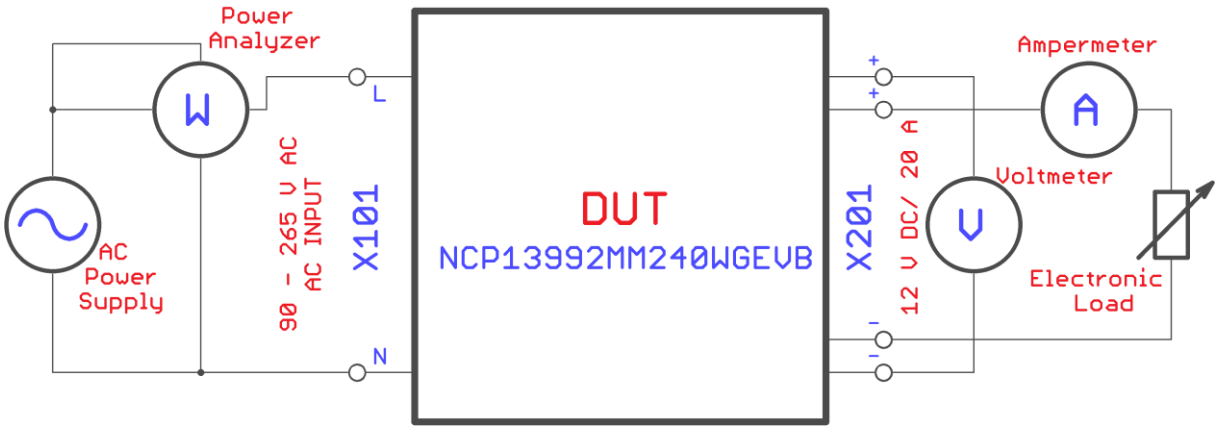
TEST PROCEDURE FOR NCP13992MM240WGEVB



1. Prepare and interconnect test equipment with device under test (DUT) – use schematics above.

2. Set AC Power Supply to 115 V AC, with current limit approximately 2.5 A to avoid any unwanted damage. Set Electronic Load to disabled state or to loading current 0 A.

3. Turn-on AC Power Supply (output voltage 115 V RMS) and check DUT output voltage. It should be approximately 12 V, stable without any visible cycling or drops. If output voltage is correct process to next step. If output voltage is zero or different value immediately turn-off AC power supply, discharge bulk capacitors and inspect PCB assembling for visible defects.

4. Check input power, should be very low, less than 0.15 W and time to time DUT consummates power peak up to 60 W depends on Power analyzer acquisition/ display speed. Input power cycling should be presented within interval of 45 – 55 seconds. If it looks OK process to next step. If minimum input power is between 0.25 W up to 0.5 W (cycling is still presented), most probably Q303 (placed on EMI Capacitor Discharging Module MOD101) is destroyed and needs to be replaced by the same type. If it's that case, please repeat all steps from the beginning after replacing defective device.

5. Allow Electronic load and slowly increase loading current to 20 A. Check output voltage, which should not show significant difference between 0 and 20 A loading. If output voltage drops more than 50 mV it signifies some fault.

6. Apply full-load (20 A) and measure DUT input power, which has to be around 257 – 260 W for 20 A load – higher input power signifies some issue. If input power is within above range process further.

7. Gradually decrease loading current to 0 and change AC Power Supply output voltage from 115 to 230 V AC. Measure DUT output voltage and again should be around 12 V – stable without any visible cycling or drops. If it looks OK process to next step.

8. Slowly increase loading current from 0 A to 20 A, test output voltage, which should be almost unchanged. EVB has same issue, while noticeable difference is presented. If looks OK process to next.

9. Apply full-load (20 A) and measure DUT input power, which is expected within range of 251 – 254 W. Higher input power indicates some malfunction.

10. Keep AC power supply at 230 V RMS and if it's possible run DUT for 10 minutes at full-load to partly form electrolytic capacitors. After 10 minutes go to next stage.

11. Turn-off electronic load or set it to 0 A. Electronic load can be used for output voltage monitoring, but it can consume maximally 200 uA in this state, otherwise must be disconnected not to affect measurement. Change power analyzer to INTEGRATION or STAND-BY MODE and also make sure that current range is fixed to 5 A with crest factor 1 or 2 (depends on equipment possibilities). Use at least 15 minutes integration window and measure "no-load" consumption, which must be maximally 120 mW. If OK, progress to next phase.
12. Enable electronic load and set it to 10 mA. Change power analyzer to INTEGRATION or STAND-BY MODE and also make sure that current range is fixed same as step 11. Use 10 – 15 minutes integration window and measure "light-load" consumption, which has to be below 260 mW.

13. As everything is done, turn-off load slowly, then turn-out AC Power Supply and discharge bulk capacitors for further safe manipulation