

Test Procedure for the NCP1340GEVB Evaluation Board

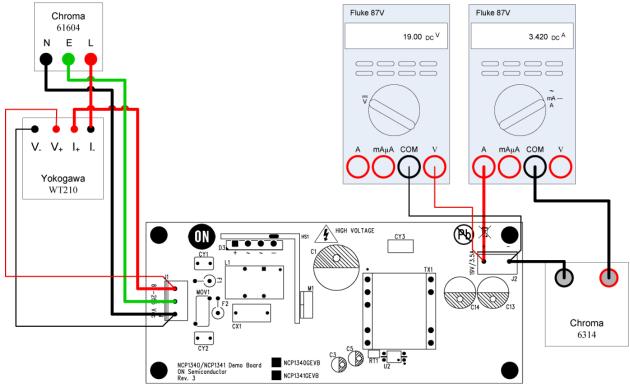


Figure 1: Test Setup

Table 1: Required Equipment

*Chroma 61604 AC	*Yokogawa WT-210	*Fluke 87V True RMS
Power Source	Power Analyzer	Multimeter
*Fluke 87V True RMS	*Chroma 6314	NCP1340GEVB
Multimeter	Electronic Load	Evaluation Board

^{*}Equivalent test equipment may be substituted.

Test Procedure:

- 1. Connect the electronic load to the output labeled "19 V / 3.5 A".
- 2. Connect one of the multimeters in series with the output and load and set it to measure current.
- 3. Connect the second multimeter to the output and set it to measure voltage.
- 4. Connect the ac power source and power analyzer to the terminals labeled "Input". Set the current compliance limit to "Auto".
- 5. Set the ac power source to 90 Vac / 60 Hz.
- 6. Set the electronic load to 3.42 A.
- 7. Turn the AC source on.
- 8. Allow the board to warm up for approximately 30 minutes.
- 9. Wait for approximately 1 minute, and then measure the output voltage (V_{OUT}) using the corresponding multimeter. Verify it is within the limits of Table 2.
- 10. Measure input power (P_{IN}) using the power analyzer.
- 11. Measure V_{OUT} and I_{OUT} using the corresponding multimeters.
- 12. Calculate efficiency (η) using the equation: $\eta = \frac{I_{OUT} \cdot V_{OUT}}{P_{IN}} \cdot 100\%$
- 13. Repeat steps 9-12 with the ac source set to 115 Vac / 60 Hz, 230 Vac / 50 Hz, 265 Vac / 50 Hz. Verify the results are within the limits of Table 2.
- 14. Turn off the ac source.
- 15. Since high voltage will be present on the bulk capacitor (C1) after the voltage is removed, use a dc voltmeter to verify the voltage is less than 30 V before continuing.
- 16. Disconnect the ac source.
- 17. Disconnect the power analyzer.
- 18. Disconnect the electronic load.
- 19. Disconnect both multimeters.
- 20. End of test.



Table 2: Desired Results

For 90 Vac /	$V_{OUT} = 19 \pm 0.25 \text{ V}$
60 Hz input,	$\eta > 91.5\%$
For 115 Vac /	$V_{OUT} = 19 \pm 0.25 \text{ V}$
60 Hz input,	$\eta > 92.5\%$
For 230 Vac /	$V_{OUT} = 19 \pm 0.25 \text{ V}$
50 Hz input,	η > 93%
For 265 Vac /	$V_{OUT} = 19 \pm 0.25 \text{ V}$
50 Hz input,	η > 93%