Test Procedure for the NCP1342PD65WGEVB Evaluation Board

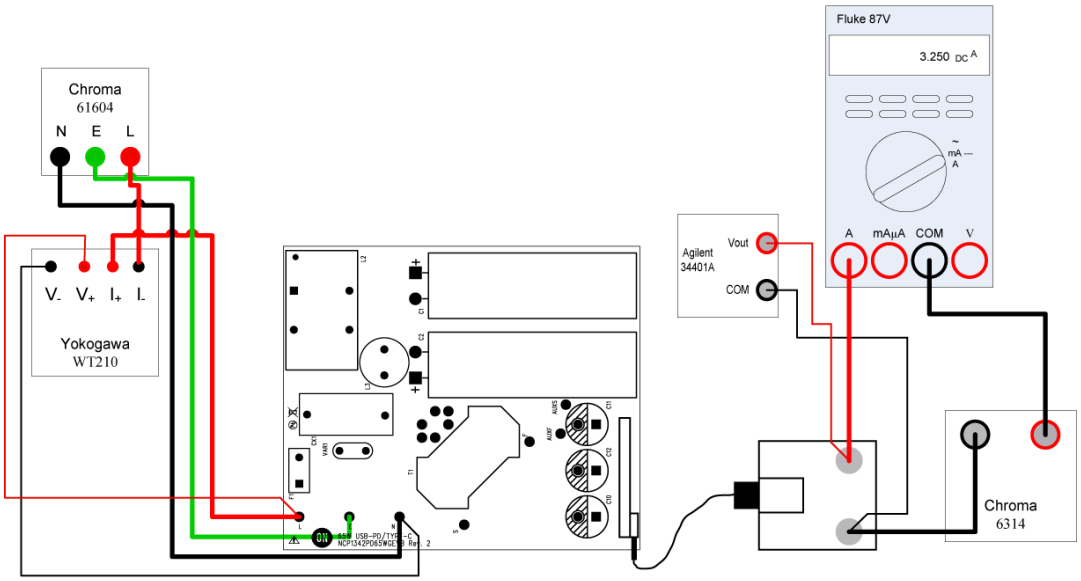

Figure 1: Test Setup

Table 1: Required Equipment

***Chroma 61604 AC Power Source**	***Yokogawa WT-210 Power Analyzer**	***Fluke 87V True RMS Multimeter**
***Fluke 87V True RMS Multimeter**	***Chroma 6314 Electronic Load**	**NCP1342PD65WGEVB Evaluation Board**
USB-PD Programming Board		**USB TYPE-C Cable**

***Equivalent test equipment may be substituted.**

Test Procedure:

1. Connect the Programming Board to the Eval board with the USB Type-C cable.
2. Connect the electronic load to the output of the load board.
3. Connect one of the multimeters in series with the output and load and set it to measure current.
4. Connect the second multimeter to the output and set it to measure voltage.
5. Connect the ac power source and power analyzer to the terminals labeled “Input”. Set the current compliance limit to "Auto”.
6. Set the ac power source to 90 Vac / 60 Hz.
7. Turn the AC source on.
8. Check for output voltage. If none, turn off the ac power source, reverse the polarity of the USB Type-C cable at the eval board end and go back to step 6.
9. Press the button on the programming board until the output voltage is 20V.
10. Remove the jumper on the programming board.
11. Set the electronic load to 3 A.
12. Allow the board to warm up for approximately 30 minutes.
13. Measure the output voltage ($\mathbf{V_{OUT}}$) using the corresponding multimeter. Verify it is within the limits of Table 2.
14. Measure input power ($\mathbf{P_{IN}}$) using the power analyzer.
15. Measure V_{OUT} and $\mathbf{I_{OUT}}$ using the corresponding multimeters.
16. Calculate efficiency ($\boldsymbol{\eta}$) using the equation: $\eta = \frac{I_{OUT} \cdot V_{OUT}}{P_{IN}} \cdot 100\%$
17. Turn off the ac source.
18. Replace the jumper on the programming board.
19. Repeat steps 7-18 with the programming board button pressed until the output is 5 V. Use a 1 minute warm-up before each test instead of 30 minutes. Verify the results are within the limits of Table 2.
20. Repeat steps 6-19 with the ac source set to 265 Vac / 50 Hz. Verify the results are within the limits of Table 2.
21. Since high voltage will be present on the bulk capacitor (C1, C2) after the voltage is removed, use a dc voltmeter to verify the voltage is less than 30 V before continuing.
22. Disconnect the ac source.
23. Disconnect the power analyzer.
24. Disconnect the electronic load.
25. Disconnect the load board and type-c cable.
26. Disconnect both multimeters.
27. End of test.

Table 2: Desired Results

For 90 Vac / 60 Hz input,	**V_{OUT} = 20 ± 0.25 V**
	η > 92%
	V_{OUT} = 15 ± 0.25 V
	η > 92%
	V_{OUT} = 12 ± 0.25 V
	η > 92%
	V_{OUT} = 9 ± 0.25 V
	η > 91%
	V_{OUT} = 5 ± 0.25 V
	η > 90.5%
For 265 Vac / 50 Hz input,	**V_{OUT} = 20 ± 0.25 V**
	η > 93%
	V_{OUT} = 15 ± 0.25 V
	η > 93%
	V_{OUT} = 12 ± 0.25 V
	η > 92.5%
	V_{OUT} = 9 ± 0.25 V
	η > 91%
	V_{OUT} = 5 ± 0.25 V
	η > 89%

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