



Test Procedure for the NCP1380BGEVB Evaluation Board

I - Test Setup

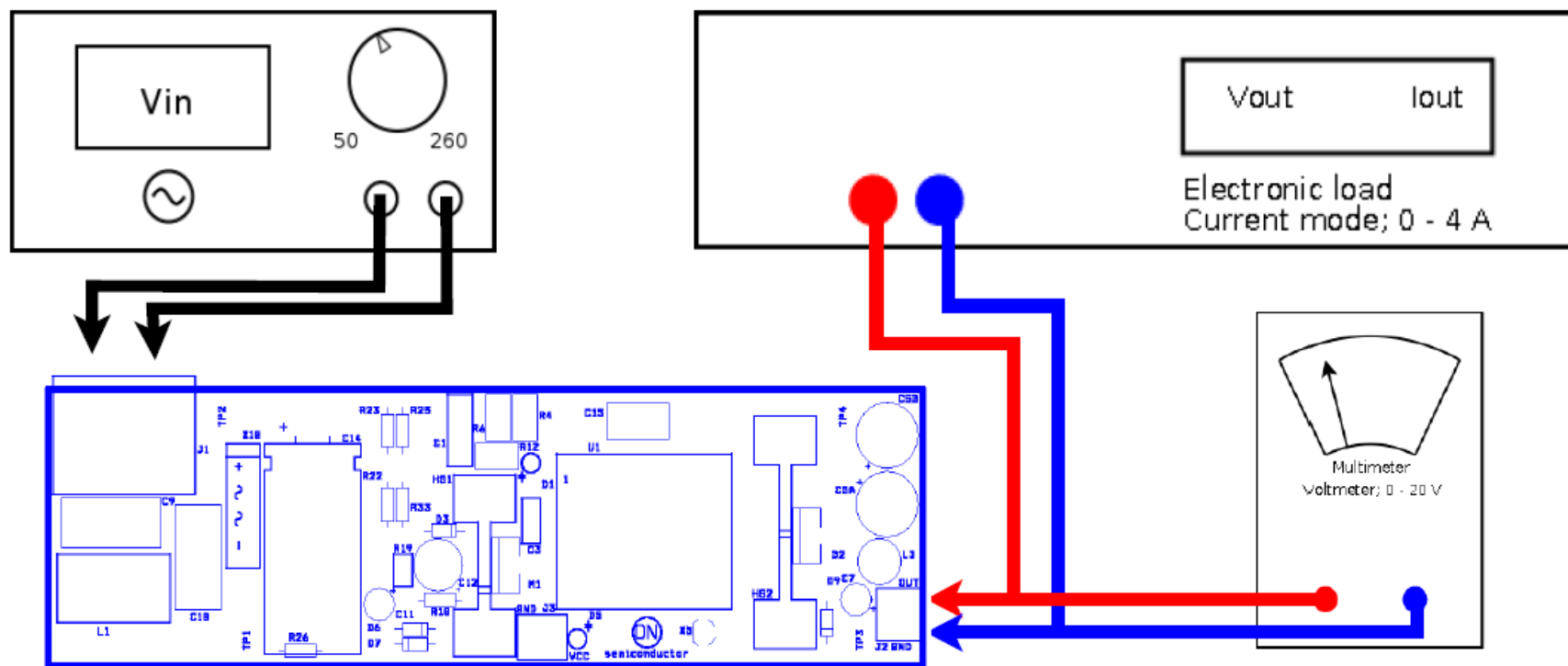


Figure 1: Test Setup



Required equipment:

- Ac power supply: 85 – 265 Vrms, 2 A
- Yokogawa power meter WT210
- Voltmeter
- Electronic load: 19 V, up to 4 A

II – Test Procedure

1. Make sure the S11 point is shorted as shown in Figure 2.

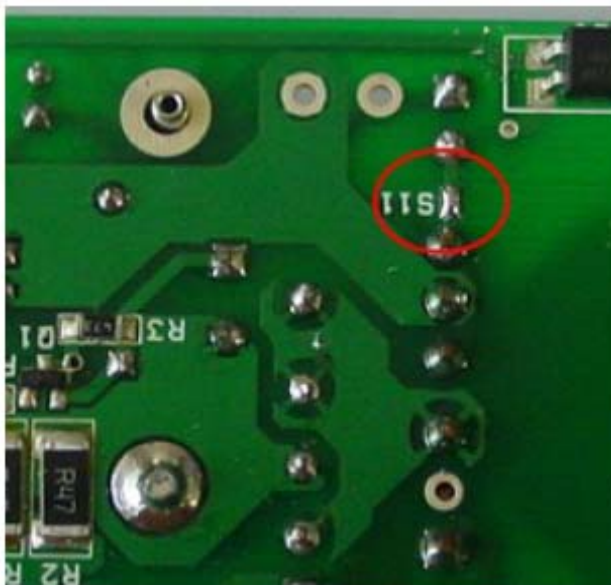


Figure 2: aux. winding connection

2. Connect the equipments to the board as shown in Figure 1.



3. Apply an input voltage from 85 Vrms to 265 Vrms, 50 Hz or 60 Hz.
4. Do the measurements listed in the below table.

	Measurements	Conditions	Results	Comments
1	Output voltage	$V_{in} = 115 \text{ Vrms}$ No output load	$V_{out} = 19 \text{ V} \pm 5\%$	
2	Input power consumption at high line and no load	$V_{in} = 230 \text{ Vrms}$ No output load	$P_{in} \leq 0.110 \text{ W}$ $V_{out} = 19 \text{ V} \pm 5\%$	No load measurement can fluctuate, run WT210 in average mode.
3	Input power consumption at high line and low output load	$V_{in} = 230 \text{ Vrms}$ $P_{out} = 0.5 \text{ W}$	$P_{in} < 0.75 \text{ W}$ $V_{out} = 19 \text{ V}$	
4	Efficiency at low line and full load	$V_{in} = 115 \text{ Vrms}$ $P_{out} = 60 \text{ W}$	$P_{in} < 67.42 \text{ W}$ or efficiency $> 89\%$ $V_{out} = 19 \text{ V} \pm 5\%$	
5	Efficiency at high line and full load	$V_{in} = 230 \text{ Vrms}$ $P_{out} = 60 \text{ W}$	$P_{in} < 67 \text{ W}$ or efficiency $> 89.5\%$ $V_{out} = 19 \text{ V} \pm 5\%$	
6	Maximum output power at high line	$V_{in} = 230 \text{ Vrms}$ Increase I_{out}	$P_{out(MAX)} = 82 \text{ W} \pm 5\%$	NCP1380B shuts down and tries to restart. NCP1380A is latched.
7	Over Temperature Protection	$V_{in} = 230 \text{ Vrms}$, $P_{out} = 60 \text{ W}$ Use a hairdryer to heat the NTC and slowly increase the temperature.	Controller shutdown (latched) when Temp. $> 80^{\circ}\text{C}$	

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