



NCP102 Demonstration Board Test Procedure

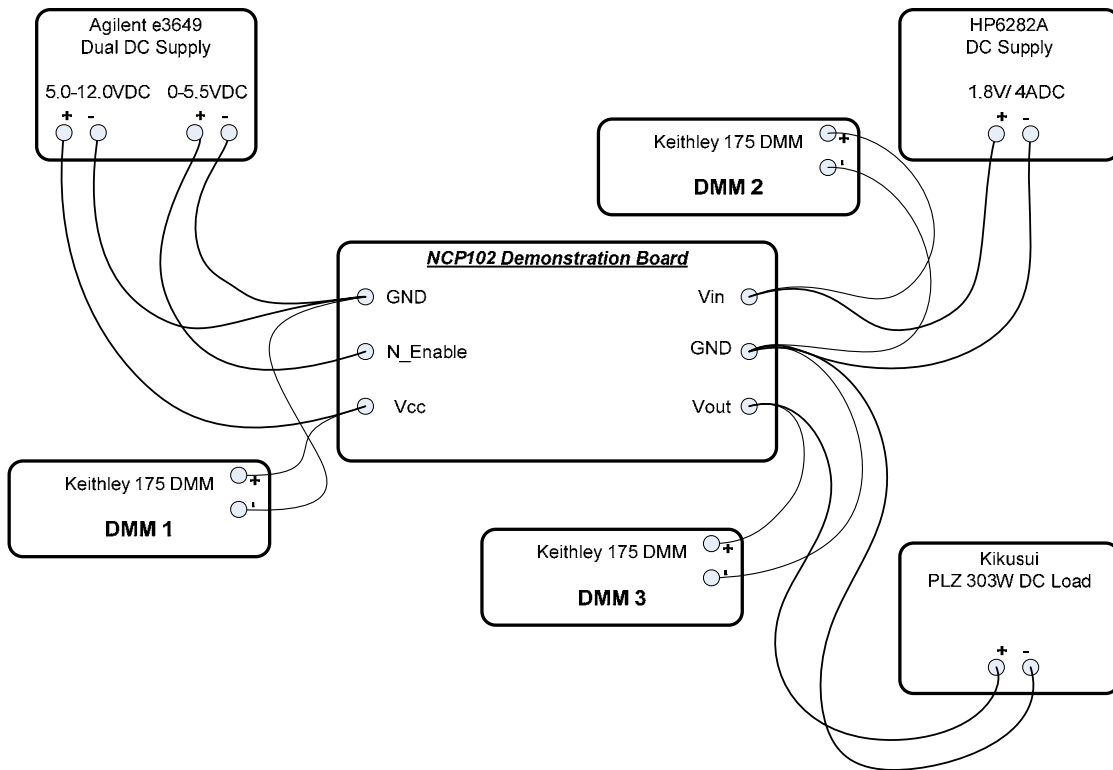


Figure 1 Test Setup

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Required Equipment:

1. **3 DC Power Supplies:**
 - a. “Vin supply” possessing a minimum voltage rating of 5 VDC and minimum current rating of 4 ADC; for example, HP 6282A.
 - b. “Vcc supply” possessing a minimum voltage rating of 15 VDC and minimum current rating of 1 ADC; for example, ½ Agilent e3649A dual supply.
 - c. “N_Enable supply” possessing a minimum voltage rating of 5.5 VDC and minimum current rating of 0.1 ADC; for example, ½ Agilent e3649A dual supply.
2. **3 Auto-ranging Digital Multimeters (DMMs):** each possessing a minimum voltage rating of 20 VDC and minimum current rating of 2ADC; for example, Keithley 175.
3. **1 Electronic Load:** possessing a current display and minimum current capability of 4 ADC; for example, Kikusui PLZ303W.

Test Procedure:

Establish Setup

1. Connect the NCP102 Demonstration Board as shown in Figure 1.
2. Adjust the N_Enable supply to 4.5VDC while observing the indicator on the supply.

Note: for measurement accuracy, the DMMs must be connected to the Demonstration Board terminals and not the DC supply or load terminals. This is particularly true for DMM 2 and DMM 3.

3. Connect DMM 1 to Vcc and configure as a voltmeter. Set DMM 1 for auto-range.
4. Connect DMM 2 to Vin and configure as a voltmeter. Set DMM 2 for auto-range.
5. Connect DMM 3 to Vout and configure as a voltmeter. Set DMM 3 for auto-range.

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6. Adjust the V_{cc} supply to 5.0VDC while observing DMM 1 (not the indicator on the DC supply).
7. Adjust the V_{in} supply to 1.800VDC while observing DMM 2 (not the indicator on the DC supply).
8. Disable the electronic load so that it is neither sinking nor sourcing current.

No-Load Regulation and Enable Function

1. Verify that V_{out} (DMM 3) equals zero VDC.
2. Temporarily disconnect the banana cable connected to "N_Enable", or reduce the "N_Enable" supply to zero Volts.
3. Verify that V_{in} (DMM 2) equals 1.800VDC, +/- 2% (1.764VDC to 1.836VDC).
4. Readjust the V_{in} supply if necessary.
5. Verify that V_{out} (DMM 3) equals 1.200VDC, +/- 2% (1.176VDC to 1.224VDC).
6. Reconnect the banana cable to "N_Enable", or adjust the "N_Enable" supply output to 4.5VDC.
7. If V_{cc} = 12.0VDC (DMM 1), go to *Full-Load Regulation and Enable Function*, below.
8. Adjust the V_{cc} supply to 12.0VDC, as indicated on DMM 1.
9. Repeat steps 1 through 7 of this section.

Full-Load Regulation and Enable Function

1. While observing the front panel indicator on the electronic load, adjust it to sink 3.5ADC from the demonstration board V_{out} terminal.
2. Enable the electronic load.
3. Verify that V_{out} (DMM 3) equals zero VDC.
4. Temporarily disconnect the banana cable connected to "N_Enable", or reduce the "N_Enable" supply to zero Volts.
5. Verify that V_{in} (DMM 2) equals 1.800VDC, +/- 2% (1.764VDC to 1.836VDC).
6. Readjust the V_{in} supply if necessary.
7. Verify that V_{out} (DMM 3) equals 1.200VDC, +/- 2% (1.176VDC to 1.224VDC).
8. Reconnect the banana cable to "N_Enable", or adjust the "N_Enable" supply output to 4.5VDC.

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9. If $V_{cc} = 5.0\text{VDC}$ (DMM 1), go to Step 12.
10. Adjust the V_{cc} supply to 5.0VDC , as indicated on DMM 1.
11. Repeat steps 1 through 9 of this section.
12. Verify that V_{out} (DMM 3) equals zero VDC .
13. Test complete.

Revision History			
Revision	Release Date	Changes	Responsible
1		Original Release	Mike Stimbert