Test procedure for NCN26010BMNEVB bridge boards

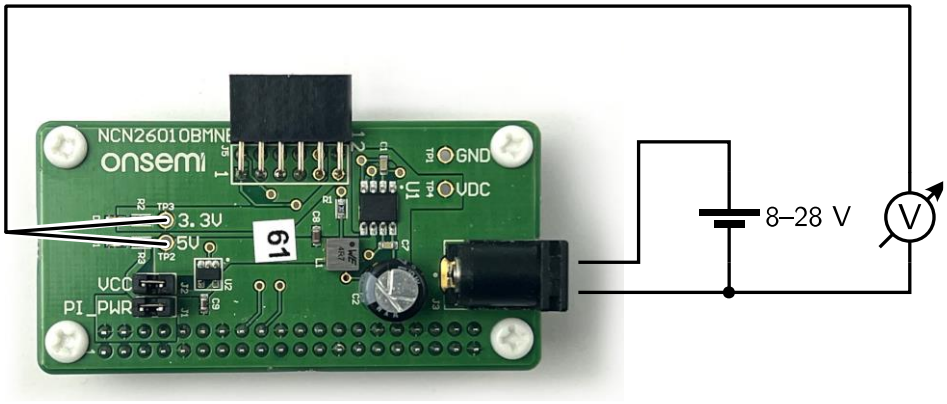

Figure 1: Test setup for revision-1 boards (shown without test board).

Figure 2: Test setup for revision-2 boards (shown with test board).

To build the set-up:

1. Use a laboratory supply set to 8 V, 2.2 A. For functional testing, an AC adaptor is also acceptable.
2. If the test board is used, connect two multimeters to the red and blue banana connectors, from the black banana connector (figure 2).
3. If the test board is not used, connect a multimeter to a test probe. Use the DC source as reference voltage (figure 1).

For each bridge board:

4. Assemble the Nylon spacers per the assembly drawing.
5. Place jumpers on J1 and J2.
6. Inspect the board visually.
7. Place the board on the test board. When inserting or removing bridge boards, take care to move the bridge board as vertically as possible to avoid bending the header pins on the test board.
8. Connect the supply to J3, or between TP4 (VCC) and TP1 (GND).
9. Verify both LEDs light up.
10. Verify the laboratory supply delivers less than 5 mA.
11. Measure the voltage on TP2. For revision-2 bridge boards, a pogo pin on the test board will contact a test point; in this case, measure from the blue to the black banana connector. Confirm the output voltage is between 4.8 and 5.2 V.[1]
12. Measure the voltage on TP3, or, if the test board is used, measure from the blue to the black banana connector.
    Confirm the output voltage is between 3.17 and 3.43 V.[2]
13. Connect a 1.8—2 Ω / 15 W resistor between TP2 and TP1, or, if the test board is used, press the test-board button. If no resistor is available, a Raspberry Pi running some software may be used instead. Repeat step 11.
14. Record the results of steps 11, 12, and 13 in the results spreadsheet (figure 4).
15. Optionally, when using a laboratory supply, increase the input voltage 28 V and repeat steps 11 and 12.

[1] The regulator supplying this rail (NCV891330PD50) has an accuracy of ±2% over load. ±2% is added to account for measurement uncertainty. The uncertainty is *added*, i.e. opposite to normal parametric-testing practice, because this is a pass-fail test for soldering quality, not a parametric test of the LDO. The LDO leaves the factory fully tested.
[2] The linear regulator supplying this rail (NCP115) has an accuracy of ±2%. ±2% is added to account for measurement uncertainty.

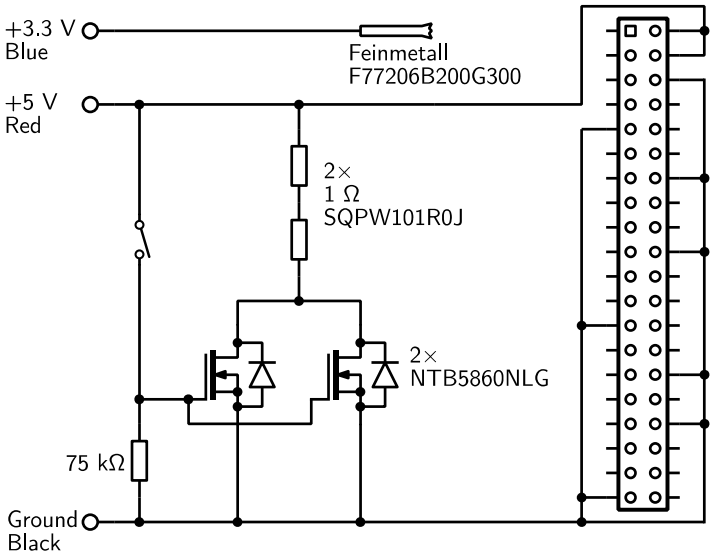

Figure 3: Schematic of the test board.

Date:	2024-10-16
Initials tester:	pw
Model power supply:	HMC8043
Model 5 V DMM:	34461A
Model 3.3 V DMM (if separate):	34465A

	Serial number	5 V voltage, no load [V]	3.3 V voltage, no load [V]	5 V voltage, loaded [V]	Comment
Upper limit:		5.20	3.17	5.20	
Lower limit:		4.80	3.43	4.80	
Example:	000	4.98	3.20	4.78	
Production:	501	4.98	3.31	4.89	
	502	5.00	3.30	4.93	
	503	5.00	3.31	4.94	

Figure 4: Reporting spreadsheet.