

# NX APPLICATION NOTE

## Calibration Verification Device

The Calibration Verification Device, part number 5-1040 is used to verify that the NX Tester is properly calibrated. It verifies the tester's resistance and capacitance measuring performance. It also verifies that the tester's voltage reference is within a specified range to assure accuracy. To verify the NX Tester's calibration, disconnect the NX Tester from any fixture connections, and insert the Calibration Verification Device into position 1 (the first set of 64 test points on the NX Tester) as shown below:

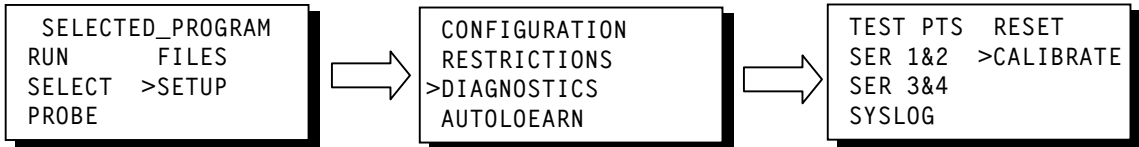


Insert Calibration Verification Device into position 1 – this is the upper right-most set of 64 test points when viewed from the rear of the NX Tester. (For an NX Pro+ tester, position 1 is the upper right-most set of 64 test points on the first Expansion Unit.)



View of rear of NX Tester with Calibration Verification Device installed.

Access the CALIBRATION menu on the NX Tester. Starting at the Main Menu, select SETUP -> DIAGNOSTICS -> CALIBRATE:



The CALIBRATION menu provides the following options:

```
CALIBRATION  
VERIFY CALIBRATION  
VIEW RESULTS  
XFER > MEM-CARD
```

- **VERIFY CALIBRATION**  
With the Calibration Verification Device inserted in Position 1, select VERIFY CALIBRATION to verify that the NX Tester is properly calibrated
- **VIEW RESULTS**  
Select VIEW RESULTS to view the results of the calibration verification. The results of the most recent calibration verification will be summarized on the display - including the date, serial number of the Calibration Verification Device, and whether it passed or failed:

```
DATE:21 AUGUST 2006  
  
CALIB BOARD: 00002  
CALIBRATION: PASSED
```

- **XFER > MEM-CARD**  
Select XFER > MEM-CARD to transfer the Calibration Certificate to the testers memory card. The results provided in an html document. The filename is in the format: Calibration-SNxxxxxxxx.html, where xxxxxxxxxx is the tester's serial number. After transferring the file to a PC, it can be viewed with a web browser as well as printed.

### Calibration Verification Failure

If a tester fails calibration verification, it will continue to operate, but may not meet its published accuracy specifications. At power-up, a warning message will be displayed until the user presses any button:

```
EXTERNAL CALIBRATION  
FAILED
```

For repair service for a NX Tester that fails calibration verification, please contact Dynalab.

### Calibration Verification Interval

Dynalab's recommended calibration verification interval is one year.

The following is an example of the Calibration Certificate for a successful calibration verification:

**Dynalab**

555 Lancaster Avenue  
 Reynoldsburg, Ohio 43068  
 www.dynalabtesters.com

**Calibration Verification Certificate**

This document certifies that the Dynalab Tester indicated below is in compliance with its published operating specifications:

Model: Dynalab NX Tester  
 Serial No: 004400274  
 Verification Date: 14-Mar-2005  
 Expiration Date: 14-Mar-2006

The Dynalab Performance Verification Device indicated below was used for calibration verification. This device was calibrated at Dynalab using standards and accuracies traceable to NIST (National Institute of Standards and Technology).

Model Number	Model Description	Serial Number
5-1040	Performance Verification Device	000036

Measured Values:

Nominal Value	Acceptable Variance	Measured Value	Measured Variance	Status
1k ohm	+/- .9%	996 ohm	-0.40%	Pass
3k ohm	+/- .9%	2.852k ohm	+0.42%	Pass
10k ohm	+/- .9%	10.05k ohm	+0.50%	Pass
30k ohm	+/- .9%	33.35k ohm	+0.45%	Pass
100k ohm	+/- .9%	99.60k ohm	-0.40%	Pass
300k ohm	+/- .9%	199.6k ohm	-0.20%	Pass
1M ohm	+/-4.8%	997.0k ohm	-0.30%	Pass
2.3M ohm	+/-4.8%	2.203M ohm	+0.13%	Pass
10nF	+/-4.0%	10.20nF	+2.00%	Pass
5.000V	+/-10%	4.999V	-0.02%	Pass
5mA	+/-5%	5.03mA	+0.23%	Pass
1.5mA	+/-5%	1.53mA	+ .25%	Pass
500uA	+/-5%	506uA	+ .41%	Pass
149.5uA	+/-5%	151uA	+1.00%	Pass
49.5uA	+/-5%	56uA	+ .56%	Pass
14.5uA	+/-10%	16.1uA	+4.04%	Pass
4.5uA	+/-20%	4.8uA	+5.87%	Pass

The following is an example of the Calibration Certificate for a failed calibration verification:

## **Dynalab**

555 Lancaster Avenue  
Reynoldsburg, Ohio 43068  
www.dynalabtesters.com

### Calibration Verification Certificate Calibration Failure

Model: Dynalab NX Tester  
Serial No: 004400274  
Verification Date: 14-Mar-2005  
Expiration Date: N/A (Calibration Failed)

The Dynalab Performance Verification Device indicated below was used for calibration verification. This device was calibrated at Dynalab using standards and accuracies traceable to NIST (National Institute of Standards and Technology).

<u>Model Number</u>	<u>Model Description</u>	<u>Serial Number</u>
5-1040	Performance Verification Device	000036

#### Measured Values:

<u>Nominal Value</u>	<u>Acceptable Variance</u>	<u>Measured Value</u>	<u>Measured Variance</u>	<u>Status</u>
1k ohm	+/-0.9%	996 ohm	-0.40%	Pass
2.84k ohm	+/-0.9%	2.852k ohm	+0.42%	Pass
10k ohm	+/-0.9%	10.05k ohm	+0.50%	Pass
33.2k ohm	+/-0.9%	33.35k ohm	+0.45%	Pass
100k ohm	+/-0.9%	99.60k ohm	-0.40%	Pass
200k ohm	+/-0.9%	206.3k ohm	+3.15%	Fail
1M ohm	+/-4.8%	997.0k ohm	-0.30%	Pass
2.3M ohm	+/-4.8%	2.203M ohm	+0.13%	Pass
10nF	+/-4.0%	10.20nF	+2.00%	Pass
5.000V	+/-10%	4.999V	-0.09%	Pass
5mA	+/-5%	5.03mA	+0.23%	Pass
1.5mA	+/-5%	1.53mA	+0.25%	Pass
500uA	+/-5%	506uA	+0.41%	Pass
50uA	+/-5%	56uA	+0.56%	Pass
15uA	+/-10%	16.1uA	+4.04%	Pass
4.5uA	+/-20%	4.8uA	+5.87%	Pass

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