

E SERIES CALIBRATION FIXTURE

The E Series calibration fixture connects your calibration equipment to the E Series device you want to calibrate. The calibration fixture provides a simple connection scheme and eliminates the need to disconnect and reconnect cables at each step of the calibration procedure.

What You Need to Get Started

To set up and use your E Series calibration fixture, you need the following items:

- E Series calibration fixture
- E Series Calibration Fixture Installation Guide*
- 68-pin shielded cable
- Digital multimeter (DMM)
- Calibrator
- Counter
- E Series device to be calibrated
- Your computer

Required Software

The National Instruments (NI) Calibration Executive is a software tool for calibrating I/O channels on NI measurement devices. You can operate Calibration Executive in either automatic or manual mode. The hardware you need to use Calibration Executive differs according to which E Series device you want to calibrate. The list of recommended hardware for use with Calibration Executive can be found at ni.com/support/calibrat/required_equipment.htm.

Installing Your E Series Calibration Fixture

Complete the following steps to install the E Series calibration fixture:

1. Connect a 68-pin shielded cable from the back of the E Series device to the calibration fixture.
2. Using standard banana plugs, connect the HI and LO outputs from your calibrator to the calibrator inputs of the calibration fixture.
3. If your calibrator has a guard output, connect it to the guard input of the calibration fixture.
4. Connect the HI and LO inputs of your DMM to the DMM outputs of the calibration fixture.
5. Using a BNC connector, attach your counter to the frequency counter connector of the calibration fixture.

Refer to Figure 1 to see how the hardware components of your calibration system connect.



Note The calibration fixture provides a cabling point between your calibration equipment and the unit under test (UUT), in this case the E Series device. All cabling should pass through the calibration fixture. Use only the shielded cables listed at ni.com/support/calibrat/required_equipment.htm to connect the calibration fixture to the UUT.

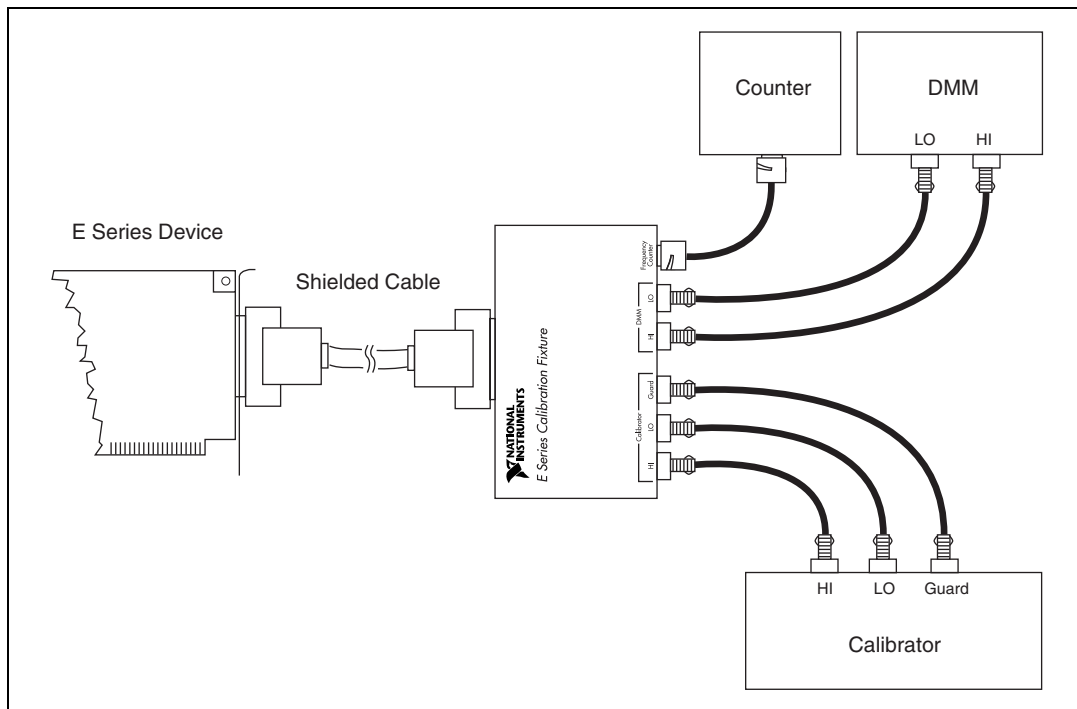


Figure 1. Calibration Fixture Connections

Operating the Calibration Fixture

The calibration fixture connects the DMM, calibrator, and counter inputs to the correct pins on the E Series device. Because some E Series device connections vary, the calibration fixture automatically reroutes the incoming signals according to the device being tested.

The digital input/output (DIO) lines on the UUT control the connections inside the calibration fixture. Table 1 shows how the digital lines affect the connections between the UUT and the external instruments.

Table 1. DIO Line Selection

Digital Control Line	Calibration Fixture Operation
DIO(0)	1 12-bit board selection, per the E Series calibrate function
	0 16-bit board selection, per the E Series calibrate function
DIO(1)	1 Selects DAC1 to be placed on the DMM output
	0 Selects DAC0 to be placed on the DMM output
DIO(2)	1 Selects FOUT to be placed on the counter output
	0 Selects CTROUT(0) to be placed on the counter output

