

## 067-1320-00

# Low-Pass Filter Calibration Fixture

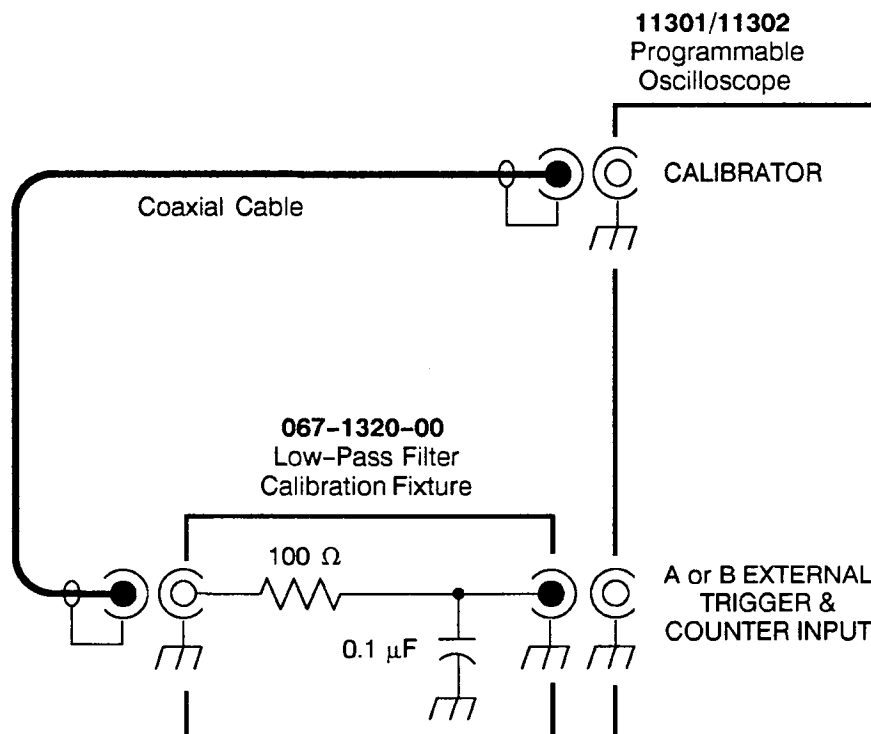
### Description

The 067-1320-00 reduces high-frequency noise in the Calibrator output signal of the 11301/11302 Programmable Oscilloscope and is used to check and adjust the 11301/11302 External Trigger & Counter Inputs. The 067-1320-00 has no replaceable parts.

### Operation

The output connector of the Low-Pass Filter Calibration Fixture is attached to the A or B External Trigger & Counter Input of the 11301/11302. A 50  $\Omega$  coaxial cable is then connected between the 11301/11302 Calibrator output and the Low-Pass Filter input. The 11301 and 11302 Service Reference manuals contain instructions for use of the Low-Pass Filter in the Performance Check and Adjustment procedures.

The following diagram shows the internal connections of the Low-Pass Filter and its interconnection with the 11301/11302.



Low-Pass Filter internal connections and its interconnection with the 11301/11302.

**Checkout Procedure** The Checkout Procedure checks the series resistance and bandwidth of the 067-1320-00 Low-Pass Filter Calibration Fixture.

**Test Equipment** Test Equipment required to perform the Checkout Procedure is included in the following table.

Description	Use, Minimum Specification, and Typical Example
Digital Multimeter with Test Leads	<p>Used to measure the internal resistance of the Low-Pass Filter.</p> <p><b>Minimum specifications:</b> 0.5% accuracy</p> <p><i>Tektronix DM 501A Digital Multimeter with a TM 500-series Power Module</i></p>
Sine Wave Generator	<p>Used as a signal source for checking bandwidth of the Low-Pass Filter.</p> <p><b>Minimum specifications:</b> Sine-wave output; Variable amplitude with a setting for 600 mV into 1 M<math>\Omega</math>; Variable frequency with settings at 100 Hz and 16 kHz; BNC output connector.</p> <p><i>Tektronix FG 503 3 MHz Function Generator with a TM 500-series Power Module</i></p>
Test Oscilloscope	<p>Used to measure the bandwidth of the Low-Pass Filter.</p> <p><b>Minimum specifications:</b> Variable input sensitivity with a setting for 100 mV/division; Variable time base with a setting for 2 ms/division; Auto Trigger; BNC input connectors.</p> <p><i>Tektronix 5100-series oscilloscope with a 5A15N Single Trace Amplifier and a 5B10N Time Base</i></p>
Coaxial Cable	<p>Used to connect the Low-Pass Filter output to the Test Oscilloscope input.</p> <p><b>Minimum specifications:</b> 50 <math>\Omega</math> impedance; Two male BNC connectors.</p> <p><i>Tektronix Part No. 012-0057-01</i></p>

**Procedure****Checking Resistance**

1. Set the Digital Multimeter to the resistance setting providing greatest measurement accuracy for 100  $\Omega$ .
2. Connect a Digital Multimeter lead to the center contact of each BNC connector (input and output) on the Low-Pass Filter.
3. Check the multimeter reading to be between 95 and 105  $\Omega$ .
4. Disconnect the Digital Multimeter leads.

**Checking Bandwidth**

1. Set the Sine Wave Generator:
  - Amplitude to minimum
  - Frequency to 100 Hz
2. Set the Test Oscilloscope:
  - Vertical Input Sensitivity to 100 mV/division
  - Horizontal Time Base to 2 ms/division
  - Triggering to Auto
3. Connect:
  - The output of the Low-Pass Filter to the input of the Test Oscilloscope
  - One end of the Coaxial Cable to the input of the Low-Pass Filter
  - The remaining end of the Coaxial Cable to the output of the Sine Wave Generator
4. Set the Sine Wave Generator Amplitude controls and Test Oscilloscope display controls (Intensity, Position, etc.) to view two sine-wave cycles.
5. Set the Sine Wave Generator Amplitude control for exactly six divisions of peak-to-peak vertical deflection on the Test Oscilloscope display.
6. Set the Sine Wave Generator Frequency to 16 kHz.
7. Check that the peak-to-peak amplitude of the sine wave displayed on the Test Oscilloscope is between 3.93 and 4.56 divisions.