

**067-2431-xx
Deskew Fixture**

Instructions

Internal circuitry conditions the input signal to between -1.5 and $+4$ volts, with a rise time of 40 ps. The fixture is powered by one of the USB ports of the oscilloscope.

Connectors on the fixture accept the coax adapters and solder tips that are available for the P7600 Series probes.

NOTE. You cannot deskew probes with coax connectors to probes with solder tips; only coax-to-coax or tip-to-tip probes can be deskewed together.

CAUTION. The deskew fixture is ESD sensitive. To avoid damaging the fixture, only use it at an antistatic workstation and observe proper ESD practices.

Standard Accessories

The following accessories are included with the deskew fixture:

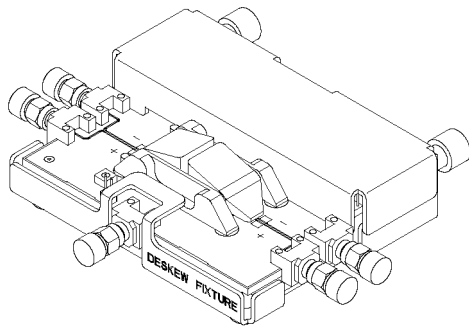
Accessory	Tektronix part number
USB cable, A to B, 6 ft	174-5194-xx
SMA cable, male-to-male, 36 in	174-5631-xx
Adjustment tool	003-1890-xx
Instructions	071-3029-xx



071-3029-00

Deskew Fixture

The probe deskew fixture provides an edge source to time-align (deskew) signals at the inputs of P7600 Series probes. It allows you to deskew the probes when you are using P76CA-xxx probe adapters with coax cables or the P76TA solder tip adapter with P7500 Series TriMode Probe solder tips.



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The edge signal input voltage is internally adjustable to accommodate different logic levels, and is provided by the oscilloscope FAST EDGE output or by an external source. The edge signal input voltage must be between -2 and $+5$ volts, with a 1 ns or faster rise time.

Overview

For best performance, you should do the DC Calibration procedure before performing the Deskew procedure. Refer to your probe manual for detailed instructions for performing the DC Probe Calibration Procedure.

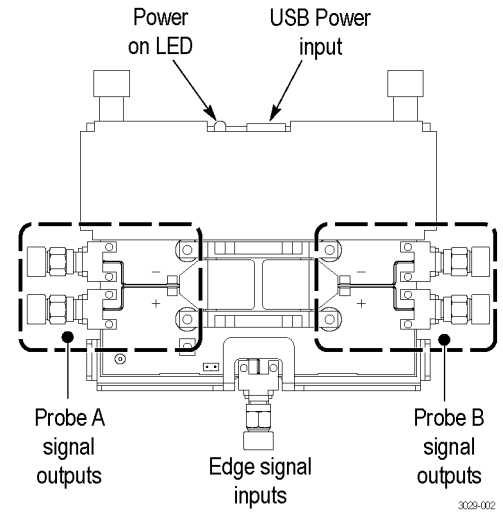
You should also check the calibration status of the probes that you intend to use prior to performing the deskew procedure. Use the procedure below.

Check the Calibration Status.

1. Select Probe Cal... from the Vertical menu.
2. Select the channel to which the probe is attached and then check the Probe Status readout:
 - Initialized. The probe has not been calibrated on the selected channel; perform the DC probe calibration procedure.
 - Compensated. The probe has been calibrated on the selected channel.
 - Fail. The probe has not been calibrated; repeat the procedure.

If the test continues to fail, troubleshoot the problem; do not continue with the deskew procedure.

Deskew Procedure. The deskew function compensates for signal delays that occur between probes due to different tips or cable lengths. The oscilloscope deskew feature applies deskew values after it completes each acquisition. The deskew values do not affect logic triggering. Deskew has no affect on XY and XYZ display formats.

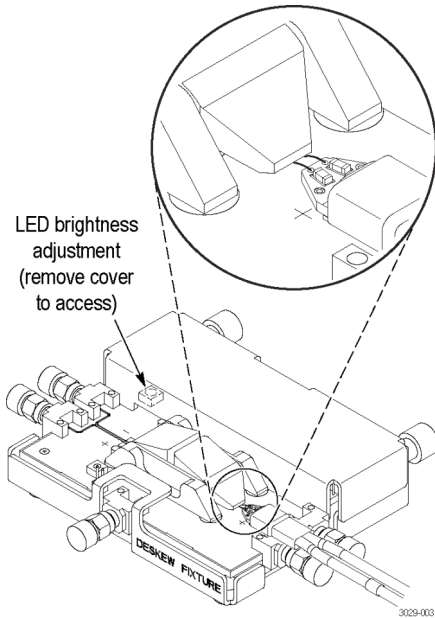


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1. Connect the deskew fixture to a USB power source. The power LED lights and the solder tip retainer clips illuminate.
2. Connect the probes to the oscilloscope.
3. Connect the probes to the fixture, using the connectors that match your probe. Leave the 50 Ω terminations on any unused SMA connectors.
 - Connect the P76CA-292 or P76CA-292C coax adapters to the SMA connectors on the fixture.
 - Connect the P76CA-SMP coax adapters to SMP-to-SMA adapters, and then to the SMA connectors on the fixture.
 - Attach the P76TA probe solder tip adapter with P7500 Series TriMode Probe solder tips beneath the spring-loaded retainers on the fixture. LEDs with adjustable brightness help you align the probe tip leads to the fixture contacts. See figure below.

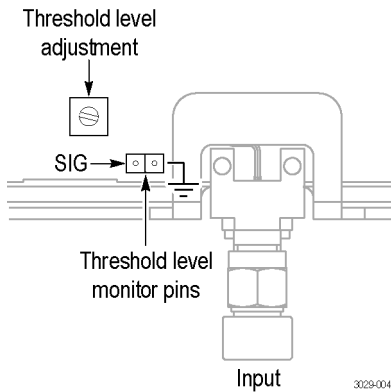
NOTE. If you are deskewing probes with solder tips, use the same solder tips with the deskew fixture that you will use to take measurements.

NOTE. You cannot deskew probes with coax connectors to probes with solder tips; only coax-to-coax or tip-to-tip probes can be deskewed together.



4. Connect the edge signal input to the fixture. Use either the FAST EDGE output on the oscilloscope, or connect an external source. The external signal source voltage must be between -2 and $+5$ volts, with a 1 ns or faster rise time.

CAUTION. Do not exceed the input voltage limits of the fixture. Damage to the fixture and probes may result.



5. Connect a DMM or oscilloscope to the threshold level monitor pins.
6. Using an insulated tool, adjust the threshold level on the fixture to the appropriate logic level (for example, 1.4 V for TTL circuits).

7. Select a reference channel with which all other channels will be deskewed. This is typically Channel 1, but can vary depending on your setup.
8. Select Deskew from the Vertical menu.
9. Select Channel 1 and set the Deskew to 0.0 s.
10. Display all channels to deskew, including the reference channel.
11. Set the Display Persistence to Infinite Persistence mode.
12. Set the Record View Palette to Temperature Grading.
13. Adjust the trigger level to get a stable trigger.
14. Adjust the vertical SCALE, POSITION, and OFFSET for each channel so that the signals overlap and are centered on screen. Make sure all channels being deskewed are at the same volts/div setting. Deskew the channels at the same level as your planned signal measurement.
15. Adjust the horizontal POSITION so that a triggered rising edge of the reference channel is at center screen.
16. Adjust the horizontal SCALE so the differences in the channel delays are clearly visible.
17. Adjust the horizontal POSITION again so that the first rising edge of the reference channel is at center screen.
18. Select Deskew from the Vertical menu.
19. Select one of the channels to match to the reference channel.

NOTE. Do the next step at a signal amplitude within the same attenuator range (vertical scale) as your planned signal measurements. Any change to the vertical scale after the deskew is complete can change the attenuator setting and give a slightly different signal path. This signal path difference can cause as high as 100 ps variation in timing skew between channels.

20. Adjust the deskew time for that channel so that its signal aligns with that of the reference channel.
21. Repeat steps 19 and 20 for each additional channel that you want to deskew.



Equipment Recycling. This product complies with the European Union's requirements according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). For more information about recycling options, check the Support/Service section of the Tektronix Web site (www.tektronix.com).

Contacting Tektronix

Web site: www.tektronix.com

Phone: 1-800-833-9200

Address: Tektronix, Inc.
Department or name (if known)
14200 SW Karl Braun Drive
P.O. Box 500
Beaverton, OR 97077 USA

Email: techsupport@tektronix.com

Warranty Information

For warranty information, go to www.tektronix.com/warranty.