

Instruction Manual



P6131 10X Passive Probe for 2400 Series Oscilloscopes

070-5514-03

Warning

The servicing instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries prior to performing service.

www.tektronix.com



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WARRANTY

Tektronix warrants that the products that it manufactures and sells will be free from defects in materials and workmanship for a period of one (1) year from the date of purchase from an authorized Tektronix distributor. If any such product proves defective during this warranty period, Tektronix, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product. Batteries are excluded from this warranty.

In order to obtain service under this warranty, Customer must notify Tektronix of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product to the service center designated by Tektronix, shipping charges prepaid, and with a copy of customer proof of purchase. Tektronix shall pay for the return of the product to Customer if the shipment is to a location within the country in which the Tektronix service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Tektronix shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than Tektronix representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of non-Tektronix supplies; or d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

THIS WARRANTY IS GIVEN BY TEKTRONIX WITH RESPECT TO THE LISTED PRODUCTS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. TEKTRONIX AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TEKTRONIX' RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE SOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR BREACH OF THIS WARRANTY. TEKTRONIX AND ITS VENDORS WILL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER TEKTRONIX OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

Contacting Tektronix

Product support	<p>For questions about using Tektronix measurement products, call toll free in North America: 1-800-833-9200 6:00 a.m. – 5:00 p.m. Pacific time</p> <p>Or contact us by e-mail: tm_app_supp@tek.com</p> <p>For product support outside of North America, contact your local Tektronix distributor or sales office.</p>
Service support	<p>Tektronix offers extended warranty and calibration programs as options on many products. Contact your local Tektronix distributor or sales office.</p> <p>For a listing of worldwide service centers, visit our web site.</p>
For other information	<p>In North America: 1-800-833-9200 An operator can direct your call.</p>
To write us	<p>Tektronix, Inc. P.O. Box 500 Beaverton, OR 97077-1000 USA</p>
Web site	<p>www.tektronix.com</p>

General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use this product only as specified.

Only qualified personnel should perform service procedures.

To Avoid Fire or Personal Injury

Connect and Disconnect Properly. Do not connect or disconnect probes or test leads while they are connected to a voltage source.

Observe All Terminal Ratings. To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product.

The common terminal is at ground potential. Do not connect the common terminal to elevated voltages.

Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.

Do Not Operate With Suspected Failures. If you suspect there is damage to this product, have it inspected by qualified service personnel.

Do Not Operate in Wet/Damp Conditions.

Do Not Operate in an Explosive Atmosphere.

Keep Product Surfaces Clean and Dry.

Symbols and Terms

Terms in this Manual. The following terms may appear in this manual:



WARNING. Warning statements identify conditions or practices that could result in injury or loss of life.

Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* before performing any service procedures.

Do Not Service Alone. Do not perform internal service or adjustments to this product unless another person capable of rendering first aid and resuscitation is present.

Operating Basics

The P6131 probe is a subminiature, 10X, passive probe designed specifically for use with Tektronix 2400 Series oscilloscopes. It is fully compatible with the Tektronix family of subminiature probe accessories. The P6131 is available with 1.3 and 2 meter cable.



WARNING. To avoid electric shock when using the probe, do not touch the metallic portions of the probe head while connected to a voltage source.

Lead Inductance

Inductance introduced by long leads can form resonant circuits that ring and distort the true waveform if driven by signals containing significant frequency components at or above resonance. To maintain optimum waveform fidelity, keep the ground lead and signal input connection as short as possible.

Probe Compensation

Due to variations in oscilloscope input characteristics, probe low-frequency compensation should be checked and or adjusted if you move the probe from one oscilloscope input to another. Connect the probe tip to a 1 kHz square wave signal (such as the oscilloscope calibrator output) and use a nonconductive low-reactance alignment tool to adjust the compensation capacitor.

High-frequency compensation seldom requires adjustment. However, if the probe has excessive high-frequency aberrations or insufficient bandwidth, you can adjust the high-frequency compensation through holes in the compensation box inner metal shield.

For complete low-frequency and high-frequency compensation adjustment procedures, see page 10.

Grounding the Probe

Connect the probe to the instrument and connect the ground lead to ground before making any measurement. Ensure that no part of the ground lead contacts voltage in the circuit under test. Except for the probe tip and BNC center conductor, all accessible metal (including the ground clip) is connected to the BNC shell.



WARNING. To avoid electric shock when using the probe, keep your fingers behind the finger guard on the probe body. See Figure 1 below.

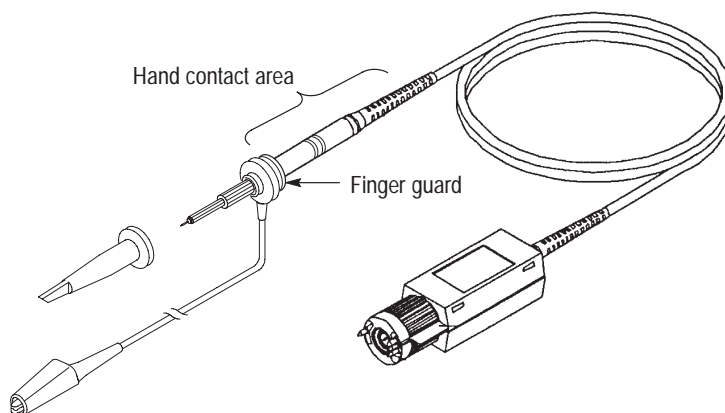


Figure 1: Probe finger guard and hand contact area

Specifications

The characteristics listed in Table 1 apply to P6131 probes installed on Tektronix 2445 and 2465 oscilloscopes or 7A42 plug-ins, unless otherwise noted.

Specifications apply when the instruments warm up for a period of at least 20 minutes in an environment that does not exceed the limits described in Table 2 on page 5.

Table 1: Electrical characteristics¹

Characteristic	Description
Attenuation ²	10X: ±1% at DC
Input resistance ^{2,3}	10 MΩ ±1% at DC
Input capacitance ³	
1.3 m	10.8 pF
2 m	13.5 pF
Compensation range	14 pF to 18 pF
Signal delay	
1.3 m	6.3 ns ±100 ps
2 m	9.0 ns ±200 ps
System bandwidth (–3 dB)	On a 2465 or 7A42: On a 2445:
1.3 m	≥300 MHz ≥150 MHz
2 m	≥250 MHz ≥150 MHz
Maximum Input Voltage ^{4,5}	300 V RMS CAT I or 300 V DC CAT I 150 V RMS CAT II or 150 V DC CAT II 100 V RMS CAT III or 100 V DC CAT III 425 V peak, @50% DF, <1 sec PW 750 V peak, @10% DF, <50 μs PW See Figure 4 for voltage derating curve.

¹ Probe installed on Tektronix 150 MHz (or less) 2400 Series oscilloscope.

² System characteristic.

³ Also see Figure 3.

⁴ As defined in EN61010-1. See Certifications and compliances in Table 4

⁵ RMS=Root Mean Square=rms=The square root of the average of the sum of the squares of the instantaneous voltage in one cycle = $\sqrt{\sum (fx)^2/n}$.
300 VDC=300V RMS, 420 V Peak (sinewave)=300 V RMS See Figure 2.

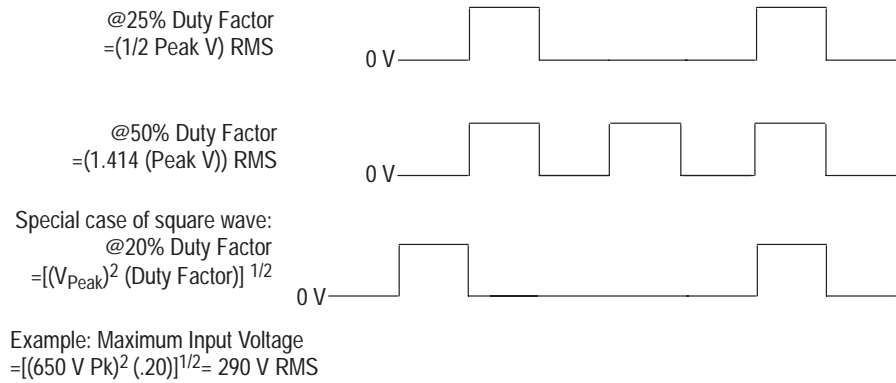


Figure 2: Maximum input voltage calculation example

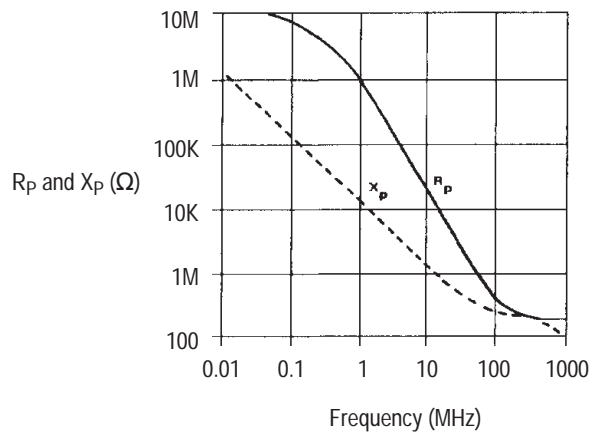


Figure 3: Typical P6131 X_p and R_p versus frequency

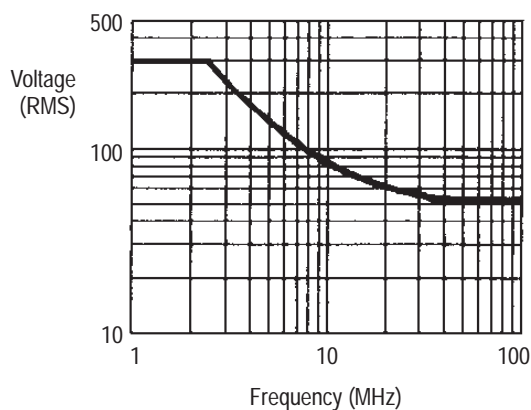


Figure 4: Typical P6131 voltage derating versus frequency

Table 2: Environmental characteristics

Characteristic	Description
Temperature range	
Operating	-15° C to 65° C (+5° F to 149° F)
Nonoperating	-62° C to 85° C (-80° F to 185° F)
Humidity	Five cycles (120 hr) at 95% to 97% relative humidity, per Tektronix standard 062-2847-00, Class 3. Refer to MIL-E016400F, paragraph 4.5.9 through 4.5.9.5.1, class 4.
Altitude	< 2000 meters

Table 3: Physical characteristics

Characteristic	Description
Net weight ¹	1.3 meter, 108 g (3.8 oz) 2 meter, 129 g (4.8 oz)
Probe cable length	1.3 meter (4.3 ft) 2 meter (6.6 ft)

¹ Includes accessories

Table 4: Certifications and compliances

<p>EC Declaration of Conformity</p>	<p>Compliance was demonstrated to the following specification as listed in the Official Journal of the European Communities:</p> <p>Low Voltage Directive 73/23/EEC as amended by 93/68/EEC:</p> <p>EN 61010-1/A2 Safety requirements for electrical equipment for measurement, control, and laboratory use</p> <p>EN 61010-2-031:1994 Particular requirements for hand-held probe assemblies for electrical measurement and test</p>								
<p>Overvoltage Category</p>	<table border="0"> <tr> <td>Category:</td> <td>Examples of Products in this Category:</td> </tr> <tr> <td>CAT III</td> <td>Distribution-level mains, fixed installation</td> </tr> <tr> <td>CAT II</td> <td>Local-level mains, appliances, portable equipment</td> </tr> <tr> <td>CAT I</td> <td>Signal levels in special equipment or parts of equipment, telecommunications, electronics</td> </tr> </table>	Category:	Examples of Products in this Category:	CAT III	Distribution-level mains, fixed installation	CAT II	Local-level mains, appliances, portable equipment	CAT I	Signal levels in special equipment or parts of equipment, telecommunications, electronics
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CAT III	Distribution-level mains, fixed installation								
CAT II	Local-level mains, appliances, portable equipment								
CAT I	Signal levels in special equipment or parts of equipment, telecommunications, electronics								
<p>Pollution Degree 2</p>	<p>Do not operate in environments where conductive pollutants may be present.</p>								
<p>Safety</p>	<p>UL3111-1, First Edition & IEC61010-2-031, First Edition CSA C22.2 No. 1010.1-92 & CAN/CSA C22.2 No. 1010.2.031-94 EN61010-1/A2 EN61010-2-031 Pollution Degree 2</p>								

Service Information



WARNING. The following instructions are for use by qualified service personnel only. To avoid electrical shock, do not disassemble or maintain the probe while it is connected to a signal source other than those specified in this procedure.

This section contains detailed performance checks, adjustments, and maintenance procedures. These procedures use external traceable test equipment to directly check warranted characteristics. If you substitute equipment, always choose instruments that meet or exceed the minimum specified requirements.

Performance Verification Procedure

Use the following procedure to verify that P6131 probe performs as warranted. For a list of the warranted specifications, see page 3.

Table 5 lists the test equipment needed to perform the performance verification and adjustment procedures.

Table 5: Performance verification and adjustment test equipment

Description	Minimum requirements	Example product
Oscilloscope ²	The P6131 probe is designed specifically for use with Tektronix 2445 and 2465 oscilloscopes and the 7A42 plug-in.	Tektronix 2445, 2465, or 7A42 plug-in ³
Calibration generator	Pulse Rise Time: ≤ 1 ns Amplitude: ≥ 0.5 V into 50 Ω Rep Rate: 100 kHz Accuracy: $\pm 0.25\%$ Direct error readout	Wavetek 9500 High-Performance Oscilloscope Calibrator
Leveled sine wave generator	Amplitude: adjustable to 1 V _{p-p} into 50 Ω Frequency range: 1 MHz to 300 MHz ² Fixed 50 kHz reference	
Precision coaxial cable	50 Ω BNC, 36 inch length	Tektronix 012-0482-XX
10X attenuator	50 Ω BNC	Tektronix 011-0059-XX
Adapter	Subminiature probe-tip-to-BNC male	Tektronix 013-0195-XX

Table 5: Performance verification and adjustment test equipment (cont.)

Description	Minimum requirements	Example product
Termination	50 Ω BNC	Tektronix 011-0049-XX
Low-reactance alignment tool	2 inch shaft, .050 inch bit size	Tektronix 003-0675-XX

- 2 To confirm the full bandwidth specification of the P6131 probe, use the following equipment: a Tektronix 2465 oscilloscope or 7904 oscilloscope with 7B92A time base and 7A42 vertical amplifier and a leveled sine wave generator capable of 300 MHz output. If you use the probe with a Tektronix 2445 oscilloscope, the bandwidth specification is lower; see Table 1 on page 3.
- 3 The maximum sensitivity of the 7A42 plug-in is 20 mV/division. When using the 7A42 to check P6131 probes, double the amplitude settings in the procedures to follow.

NOTE. To ensure accurate measurements, warm up all test equipment for at least 20 minutes before beginning any performance verification or adjustment procedure.

Bandwidth Check To check probe bandwidth do the following:

1. Connect the test setup as shown in Figure 5.

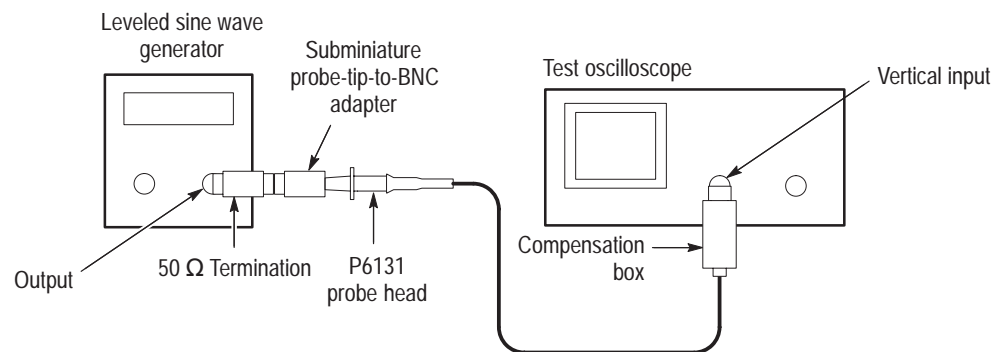


Figure 5: Bandwidth check setup

2. Set the test oscilloscope controls as follows:

Volts/Division	0.1 V (includes 10X probe attenuation)
Time/Division	1 ms
Input Coupling	DC
Bandwidth	Full

3. Set the leveled sine wave generator to 50 kHz.

4. Adjust the sine wave generator output amplitude to produce a 6-division display on the test oscilloscope. Center the waveform on screen.
5. Set the sine wave generator to the high-frequency range and slowly increase the variable frequency control until the display amplitude decreases to 4.2 divisions (-3 dB) on the oscilloscope.
6. Verify that the sine wave generator frequency readout is greater than or equal to the values listed in Table 6 for your instrument.

Table 6: Probe bandwidths

Probe type	2465 Oscilloscope 7A42 Plug-in	2445 Oscilloscope
1.3 meter length	300 MHz	150 MHz
2.0 meter length	250 MHz	150 MHz

7. If the generator frequency readout is less than the specified value, perform the low-frequency and high-frequency compensation adjustments beginning on page 10.
8. Disconnect the test setup.

Attenuation Accuracy Check

To check the probe attenuation accuracy do the following:

1. Connect the calibration generator standard amplitude output to the test oscilloscope vertical input with the precision coax cable.
2. Set the calibration generator controls as follows:

Amplitude	Standard
Output	50 mV
Frequency	1 kHz

3. Set the oscilloscope controls as follows:

Volts /Division	10 mV
Time/Division	10 ms
Input Coupling	DC
Triggering	Obtain a stable display

4. Adjust the calibration generator variable amplitude control to produce a precise 5-division display on the oscilloscope.
5. Note the oscilloscope deflection error directly from the calibration generator display for the calculation in step 9 below (Example: $+1\%$).

6. Remove the coax cable from the test setup. Connect the P6131 probe output to the same vertical input on the oscilloscope.
7. Connect the probe tip through the probe-tip-to-BNC adapter to the standard amplitude output of the calibration generator. (You must remove the light gray probe-body shell before inserting the probe tip into the probe-tip-to-BNC adapter.)
8. Set the calibration generator output amplitude to 0.5 V and fine tune the amplitude to produce a precise 5-division display on the oscilloscope.
9. The deflection error indicated by the calibration generator must be within 0.75% of the error noted in step 5 above (probe attenuation accuracy of $\pm 1\%$ minus the generator uncertainty). Example: if the error noted in step 5 is +1%, the calibration generator display must now indicate between 0.25% and 1.75%.

NOTE. You can also check the probe attenuation accuracy with an ohmmeter having a 10 M Ω range and $\pm 0.05\%$ or greater accuracy.

An attenuation accuracy of $\pm 1.0\%$ is assured if the oscilloscope input resistance is 1 M Ω $\pm 0.55\%$ ($\pm 0.5\%$ tolerance plus 0.05% reading uncertainty) and the probe-tip-to-output series resistance is indicated to be 9 M Ω $\pm 0.35\%$ ($\pm 1.0\%$ attenuation accuracy minus $\pm 0.6\%$ input resistance uncertainty minus $\pm 0.05\%$ reading uncertainty).

10. Disconnect the test setup.

Adjustment Procedure

This section contains procedures to adjust the P6131 probe low-frequency and high-frequency compensations. Always perform the low-frequency compensation adjustment before proceeding to the high-frequency adjustment.

For a list of test equipment needed to perform the adjustments, see Table 5 on page 7.

Low-Frequency Compensation Adjustment

To adjust the probe low-frequency compensation do the following:

1. Connect the probe output to the test oscilloscope vertical input.
2. Set the oscilloscope controls as follows:

Volts /Division	0.1 V (includes 10X probe attenuation)
Time/Division	1 ms
Input Coupling	DC
Bandwidth	Full
3. Connect the probe input with hook tip to the oscilloscope calibrator output.
4. Set the oscilloscope triggering for a stable display. The square wave should be five cycles in length, four divisions in amplitude, and centered on-screen.
5. Using the low-reactance alignment tool, adjust C2010 to optimize the square wave front corner edge. See Figure 6 for the adjustment location; see Figure 7 for waveform optimization criteria.
6. Disconnect the test setup.

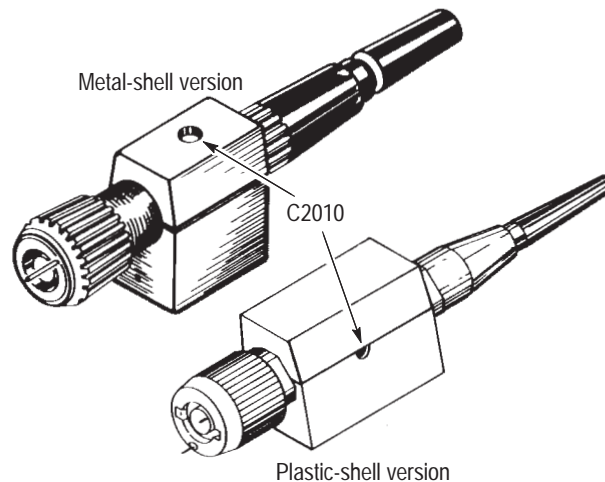


Figure 6: Low-frequency compensation adjustment locations

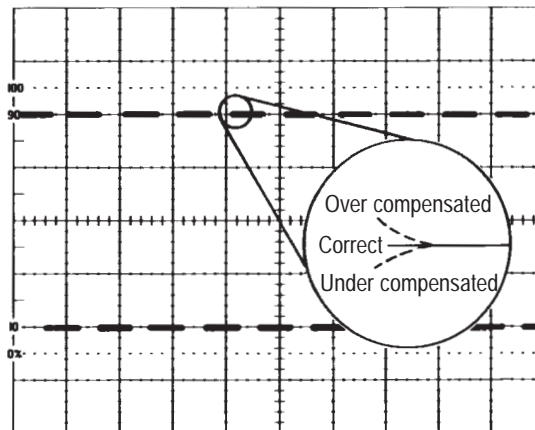


Figure 7: Low-frequency compensation, optimizing the waveform

High-Frequency Compensation Adjustment

To adjust the probe high-frequency compensation do the following:

1. Connect the positive-going fast-rise output of the calibration generator to the test oscilloscope with the precision coax cable and 10X attenuator.
2. Set the oscilloscope controls as follows:

Volts /Division	10 mV (includes 10X probe attenuation)
Time/Division	0.02 μ s
Input Coupling	DC
Bandwidth	Full
3. Set the calibration generator to produce a fast-rise output with a repetition rate of 10 μ s (100 kHz). Adjust the output amplitude to produce a 5 division display on the oscilloscope.
4. Adjust the oscilloscope triggering for a stable display and center the waveform on screen.
5. Note the pulse shape and system aberrations for analysis in step 10.
6. Remove the precision coax cable from the test setup.
7. Remove the probe compensation box cover as described below.

Metal shell version: Unscrew the compensation box retainer nut approximately two complete turns and lift the cover out and up. Press the cable connector in firmly and retighten the retainer.

Plastic shell version: Pry off the darker portion of the plastic shell by inserting your thumbnails into the seam between the two cover pieces; then remove the lighter portion from the inner metal shield.

8. Connect the probe output to the oscilloscope vertical input.
9. Connect the probe tip through the probe-tip-to-BNC adapter and a 50 Ω termination to the positive-going fast-rise output of the calibration generator. (The light gray probe-body shell must be removed before inserting the probe tip into the probe-tip-to-BNC adapter.)
10. Verify that the high-frequency aberrations do not exceed +6% (5.30 divisions), -6% (4.70 divisions), or 9% (0.45% division) peak to peak, in addition to the system aberrations noted in step 5 above.
11. If the probe aberrations are within tolerance, proceed to step 14 below. If the probe aberrations are not within tolerance, continue with step 12 below.
12. Adjust R2021 for the best overall waveform flat response. See Figure 8 for the location of all adjustments.
13. Adjust R2020, R2010, and C1010 for the best corner response without ringing. See Figure 9 for the waveform area effected by each adjustment.

NOTE. *High-frequency compensation adjustments affect probe bandwidth. Following the compensation adjustments, verify the probe bandwidth specification using the procedure on page 8. A small overshoot on the leading edge of the pulse may be tolerated in order to meet the bandwidth specification. The overshoot should not exceed the typical aberrations described in step 10 above.*

14. Reinstall the compensation box cover by performing the procedure described in step 7 above in reverse order.
15. Disconnect the test setup.

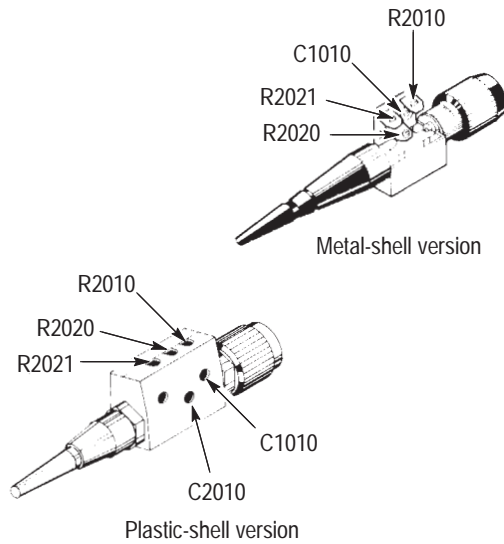


Figure 8: High-frequency compensation adjustment locations

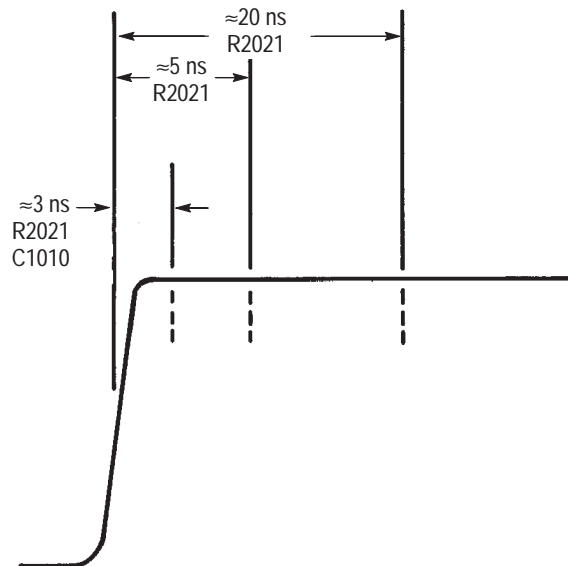


Figure 9: High-frequency compensation, optimizing the waveform

Maintenance

Use the following procedures to clean and maintain the P6131 probe.

Cleaning To remove accumulated dirt from the probe exterior, use a soft cloth dampened with a nonresidue cleaner, preferably isopropyl alcohol. In particular, avoid solvents such as benzene, toluene, xylene, or acetone.

Probe Module Replacement Modular construction has been used in the design of the probe to simplify repair. The probe head, tip assembly, compensation box, and cable are available as separate units through your local Tektronix field office or representative. Individual components within the compensation box are not replaceable. See page 19 for a list of replaceable parts.

The entire probe-head can be replaced by simply pulling the probe-head assembly away from the cable and pushing a new unit in place. To remove the compensation box, unscrew the retainer and pull the cable until it separates from the box.

The probe tip is easily replaced by following the replacement procedure included with the replacement tips.

Replaceable Parts

This section contains a list of the replaceable modules for the P6131 probe. Use this list to identify and order replacement parts.

Parts Ordering Information

Replacement parts are available through your local Tektronix field office or representative.

Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest improvements. Therefore, when ordering parts, it is important to include the following information in your order:

- Part number
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If you order a part that has been replaced with a different or improved part, your local Tektronix field office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

Module Servicing

Modules can be serviced by selecting one of the following three options. Contact your local Tektronix service center or representative for repair assistance.

Module Exchange. In some cases you may exchange your module for a remanufactured module. These modules cost significantly less than new modules and meet the same factory specifications.

Module Repair and Return. You may ship your module to us for repair, after which we will return it to you.

New Modules. You may purchase replacement modules in the same way as other replacement parts.

Using the Replaceable Parts List

This section contains a list of the replaceable mechanical and electrical components for the P6131 probe. Use this list to identify and order replacement parts. The table below describes the content of each column of the parts list.

Parts list column descriptions

Column	Column name	Description
1	Figure & index number	Items in this section are referenced by figure and index numbers to the exploded view illustrations that follow.
2	Tektronix part number	Use this part number when ordering replacement parts from Tektronix.
3 and 4	Serial number	Column three indicates the serial number at which the part was first effective. Column four indicates the serial number at which the part was discontinued. No entry indicates the part is good for all serial numbers.
5	Qty	This indicates the quantity of parts used.
6	Name & description	An item name is separated from the description by a colon (.). Because of space limitations, an item name may sometimes appear as incomplete. Use the U.S. Federal Catalog handbook H6-1 for further item name identification.
7	Mfr. code	This indicates the code of the actual manufacturer of the part.
8	Mfr. part number	This indicates the actual manufacturer's or vendor's part number.

Abbreviations Abbreviations conform to American National Standard ANSI Y1.1–1972.

Mfr. Code to Manufacturer Cross Index The table titled Manufacturers Cross Index shows codes, names, and addresses of manufacturers or vendors of components listed in the parts list.

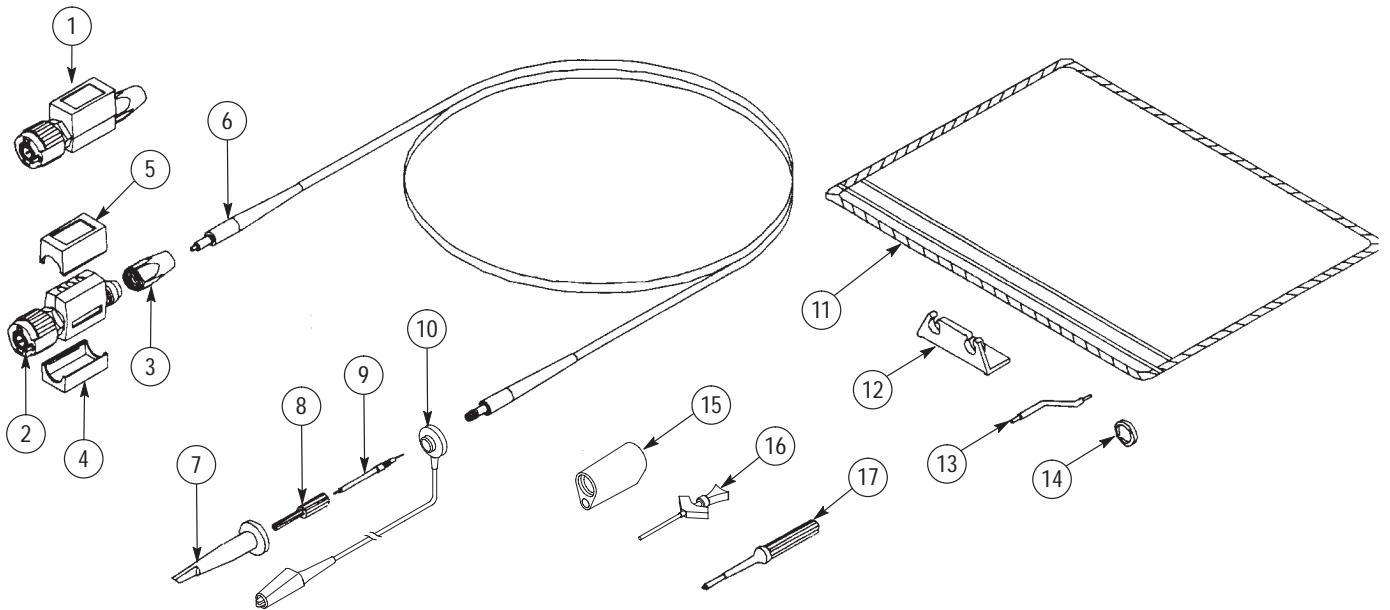


Figure 10: P6131 probe with standard accessories

Replaceable parts: P6131 probe and standard accessories

Fig. & index number	Tektronix part number	Serial no. effective	Serial no. discont'd	Qty	Name & description	Mfr. code	Mfr. part number
P6131 PROBE							
10-1	206-0314-00			1	COMP BOX ASSY:1.3 METER (STANDARD ONLY)	80009	206-0314-00
	206-0321-00			1	COMP BOX ASSY:2 METER (OPTION 02 ONLY)	80009	206-0321-00
-2	131-3219-00			1	CONN,RF PLUG:BNC,MALE,STR,THD,10X	24931	28P266-3
-3	200-3018-00	8430		1	COVER,CABLE NIP:COMP BOX	0J260	ORDER BY DESC
-4	200-3017-00	8430		1	COVER,COMP BOX:BOTTOM,ABS SLATE GRAY	TK2565	200-3017-00
-5	200-3016-00	8909		1	COVER,COMP BOX:TOP,ABS DOVE GRAY (STANDARD ONLY)	TK2565	200-3016-00
	200-3016-00	8909		1	COVER,COMP BOX:TOP,ABS DOVE GRAY (OPTION 02 ONLY)	TK2565	200-3016-00

Replaceable parts: P6131 probe and standard accessories (cont.)

Fig. & index number	Tektronix part number	Serial no. effective	Serial no. discont'd	Qty	Name & description	Mfr. code	Mfr. part number
10-6	174-0972-00	8805		1	CABLE ASSY,RF:39 OHM COAX,3.0M (STANDARD ONLY)	TK2469	174-0972-00
	174-0971-00	8818		1	CABLE ASSY,RF:39 OHM COAX,2.0M (OPTION 02 ONLY)	TK2469	174-0971-00
-7	013-0208-02	8820		1	TIP,PROBE:SUBMINIATURE SIZE	TK2565	013-0208-02
-8	204-0925-01			1	BODY SHL,PROBE	TK2565	204-0925-01
-9	206-0265-10	8628		1	TIP,PROBE:10X,10.3PF,CLEAR/BLUE (STANDARD ONLY)	80009	206-0265-10
	206-0265-12	8628		1	TIP,PROBE:10X,12.5PF,CLEAR YELLOW (OPTION 02 ONLY)	80009	206-0265-12
-10	196-3305-00			1	LEAD,ELECTRICAL:22 AWG,6.0 L,W/CLIP	060D9	196-3305-00
	196-3113-02			1	LEAD,ELECTRICAL:STRD,22 AWG,6.0 L,8-N	TK2469	196-3113-02
P6131 PROBE STANDARD ACCESSORIES							
-11	016-1644-00			1	POUCH,ACCESSORY:6.25 X 9.25	05006	501494
-12	352-0351-00	8924		1	HOLDER,PROBE:BLACK ABS P6000 SERIES	7X318	1127
-13	195-4240-00			1	LEAD,ELECTRICAL:0.025 DIA,COPPER,2.3 L	TK2469	195-4240-00
-14	016-0633-00			1	MARKER SET,CA:2 EA VARIOUS COLORS	80009	016-0633-00
-15	343-1003-01			1	COLLAR,GND	TK2565	343-1003-01
-16	206-0364-00	9004		1	TIP,PROBE:MICROCKT TEST,0.05 CTR	80009	206-0364-00
-17	003-1433-02		8845	1	SCREWDRIVER:ADJUSTMENT TOOL	TK2565	003-1433-02
	070-5514-03			1	SHEET,TECHNICAL:INSTR,P6131,DP	TK2548	070-5514-03

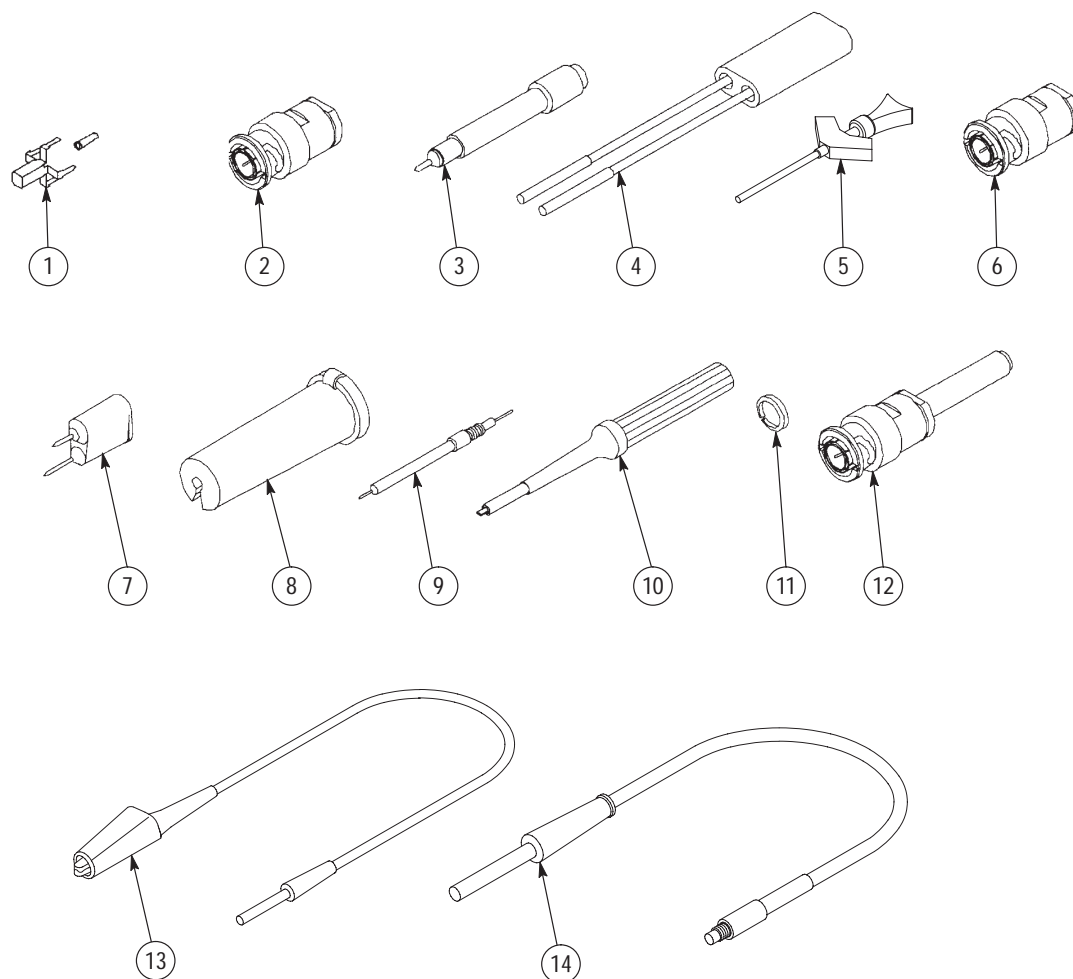


Figure 11: P6131 probe optional accessories

Replaceable parts: P6131 probe optional accessories

Fig. & index number	Tektronix part number	Serial no. effective	Serial no. discont'd	Qty	Name & description	Mfr. code	Mfr. part number
P6131 PROBE OPTIONAL ACCESSORIES							
11 -1	131-5030-00	8926		1	CONNECTOR,PROBE:PKG OF 25,SUBMINIATURE	80009	131-5030-00
-2	013-0195-00			1	ADAPTER,CONN:BNC TO PROBE	24931	28P264-1
-3	013-0202-03	8727		1	ADAPTER,PROBE:SUBMINIATURE/COMPACT TO MIN	TK2565	013-0202-03
THE SUBMINIATURE-TO-MINIATURE PROBE-TIP ADAPTER IS REQUIRED TO USE ACCESSORIES IN INDEX NUMBERS 6 THRU 11							
-4	015-0325-01			1	ADAPTER,PROBE:PROBE TO CONNECTOR PINS	TK2565	015-0325-01

Replaceable Parts

Replaceable parts: P6131 probe optional accessories (cont.)

Fig. & index number	Tektronix part number	Serial no. effective	Serial no. discont'd	Qty	Name & description	Mfr. code	Mfr. part number
11-5	206-0364-00	8851		1	TIP,PROBE:MICROCKT TEST,0.05 CTR	80009	206-0364-00
-6	013-0084-04			1	ADAPTER,CONN:BNC TO PROBE	80009	013-0084-04
-7	013-0085-00			1	TIP,PROBE:GROUNDING	80009	013-0085-00
-8	352-0670-00			1	HOLDER,PROBE:ATTENUATOR TIPS (3)	TK2565	352-0670-00
-9	206-0268-00			1	TIP ASSY,PROBE:1X,SUBMINIATURE	80009	206-0268-00
-10	003-1433-02	8845		1	SCREWDRIVER:ADJUSTMENT TOOL	80009	003-1433-02
-11	016-0633-00			1	MARKER SET,CA:2 EA VARIOUS COLORS	80009	016-0633-00
-12	013-0253-00	9307		1	ADAPTER,CONN:BNC TO PROBE TIP,MALE	24931	28P-302-1
-13	196-3286-00	8921		1	LEAD,ELECTRICAL:26 AWG,10.222 L,0-N W/ALLIGATOR CLIP	TK2469	196-3286-00
-14	196-3302-00	9004		1	LEAD,ELECTRICAL:23 AWG,6.0 L	TK2469	196-3302-00
	070-5514-03			1	MANUAL,TECH:INSTR,P6131	TK2548	070-5514-03

Manufacturers cross index

Mfr. code	Manufacturer	Address	City, state, zip code
05006	20TH CENTURY BOK	3628 CRENSHAW BOULEVARD ATTN: CUSTOM DEPARTMENT	LOS ANGELES, CA 90016
0J260	COMTEK MANUFACTURING OF OREGON	P O BOX 4200 M/S 16-207	BEAVERTON, OR 970764200
24931	BERG ELECTRONICS INC	BERG ELECTRONICS RF/COAXIAL DIV 2100 EARLYWOOD DR PO BOX 547	FRANKLIN, IN 46131
7X318	KASO PLASTICS INC	11013 A NE 39TH	VANCOUVER, WA 98662
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON, OR 97077-0001
TK2469	UNITREK CORPORATION	3000 LEWIS & CLARK HWY SUITE 2	VANCOUVER, WA 98661
TK2548	XEROX CORPORATION	14181 SW MILLIKAN WAY	BEAVERTON, OR 97005
TK2565	VISION PLASTICS INC	26000 SW PARKWAY CENTER DRIVE	WILSONVILLE, OR 97070

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