Tektronix P7700 Series Trimode Probes and Tips User Manual

Contents

Tektronix P7700 Series Trimode Probes and Tips

USER MANUAL

P7700 Series Trimode Probes and Tips Installation and Safety Instructions

Probe models

The P7700 Series TriMode Probe family includes these models:
• P7708 8 GHz
• P7713 13 GHz
• P7716 16 GHz
• P7720 20 GHz

Documentation

Review the following user documents before installing and using your instrument. These documents provide important operating information.

Product documentation

The following table lists the primary product specific documentation available for your product. These and other user documents are available for download from www.tek.com. Other information, such as demonstration guides, technical briefs, and application notes, can also be found at www.tek.com.

Document	Content
Installation and Safety Instructions	Safety, compliance, and basic introductory information for this p roduct.
User Manual	In-depth operating information for the product.
Specifications	Technical Reference Instrument specifications.

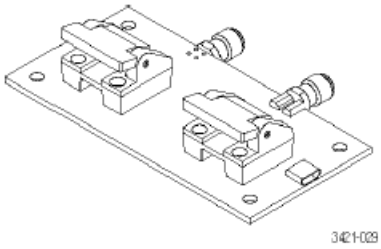
How to find your product documentation
1. Go to **www.tek.com**.
2. Click Download in the green sidebar on the right side of the screen.
3. Select Manuals as the Download Type, enter your product model, and click Search.
4. View and download your product manuals. You can also click the Product Support Center and Learning Center links on the page for
more documentation.

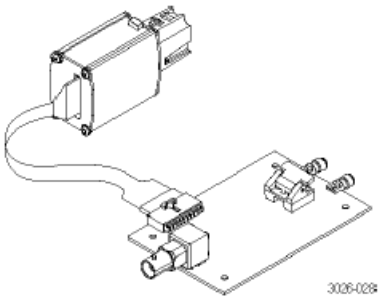
Standard accessories

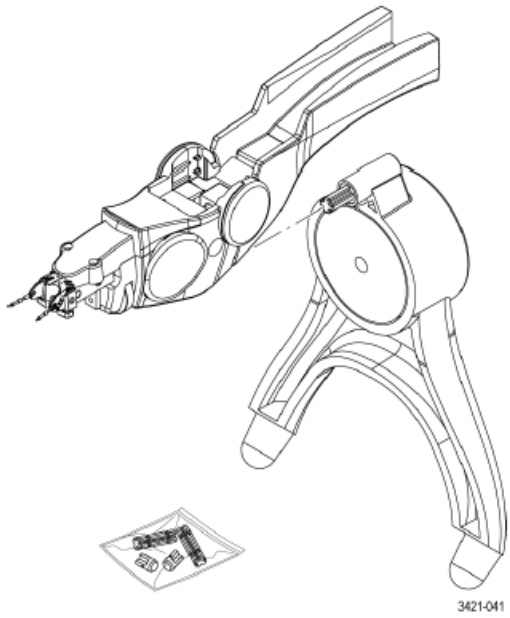
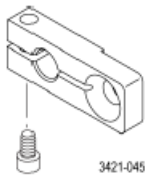
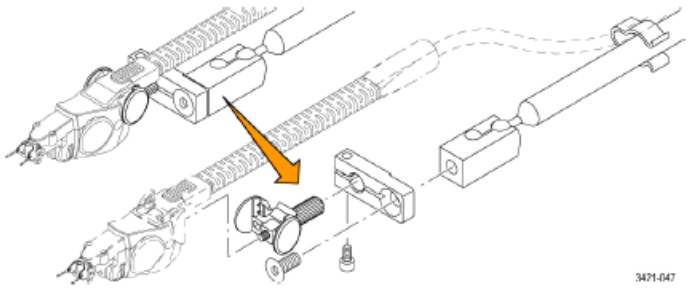
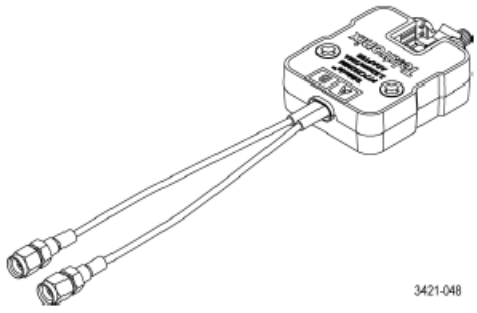
The following accessories are shipped with the P7700 Series probes. If no quantity is listed, only one of that item is shipped.

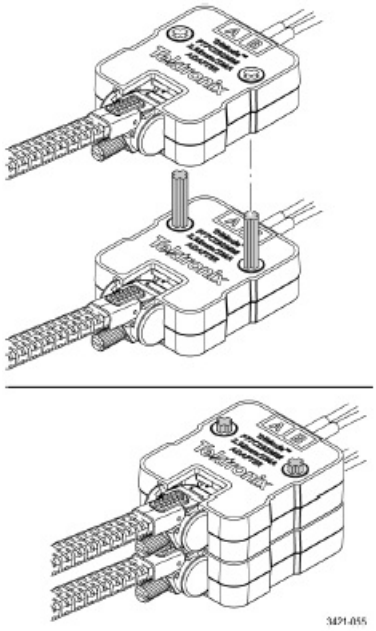
Reorder part number and quan tity	Description
P77STFLXA	Active tips (2 solder tips)
020-3167-xx	Adhesive tape
016-2111-xx	Color bands
017-0103-xx	Wire kit (38 AWG, 4 mil)
071-7386-xx	Accessory re-order and info card
006-3415-xx	Antistatic wrist strap. When you use the probe, always work at an antistatic work station and wear the antistatic wrist strap.
–	Calibration certificate. A certificate of traceable calibration is provided with e very probe.
–	Data calibration report. The Data Calibration Report lists the manufacturing t est results of your probe at the time of shipment and is included with every p robe.

Optional accessories

Optional accessory	Part and description
	P77STCABL, Solder-in active tip This tip provides a soldered, multi-point conn ection that supports full TriMode measureme nt capabilities at full probe bandwidth.
	P77STFLXA standard reach Flex circuit base d solder tips These tips use flex circuit materi al and provide soldered, multi- point connections. Designed for the lowest lo ading across the full bandwidth of the probe.
	P77STFLRB and P77HTFLRB long reach Fl ex circuit based solder tips. The B tips have dark gray plastic housing.
	P77STFLRA and P77HTFLRA long reach Fl ex circuit based solder tips. The A tips have blue plastic housing. There is also an intentio nal cutout near the plastic housing.
	P77STFLXB Flex circuit based solder in tips for memory interposer probing. These tips u se flex circuit material and provide soldered, multi-point connections. Designed to be used with Nexus Technology memory interposers.
	P77DESKEW, Deskew fixture Use this fixture to compensate a probe, desk ew up to 2 probes at once, or to perform a pr obe functional check.

	DC probe calibration fixture Use this fixture (090-0103-02) to perform a D C compensation with the host instrument.

	P77BRWSR , Browser accessory includes th ese items: Browser wand. Extends the length of the bro wser for a more comfortable grip. (Part numb er 020-3160-xx.) Browser hands-free tripod. Holds the browse r on a test point without the need to use your hands. (Part number 020-3161-xx.) Browser replacement tips. Use to repair any browser tips that are broken with use. (Part n umber 020-3162-xx.) Adapter attachment. Attaches the browser to the hands-free tri- pod or other holders. Ground lead. Attaches the browser to a circui t ground if necessary. The browser accessories can be stored in th e TekFlex accessories box that comes standard with the probe.
	407-6019-xx, Probe adapter Use this accessory to attach the browser to t he PPM203B. probe arm/positioner
	
	P77C292MM, 2.92 mm adapter Use this adapter to connect a P7700 series probe to a DUT with 50 Ω test point connecto rs.
	020-3179-xx, Linkage adapter kit Use the adapters for stacking two or more P7 7C292MM 2.92 mm adapters.

	Use two gray adapters to stack two P77C292 MM adapters; use two black adapters to stac k three or four P77C292MM adapters. Insert the linkage adapters into the P77C292 MM adapters as shown (gray linkage adapter s shown).

Installation overview

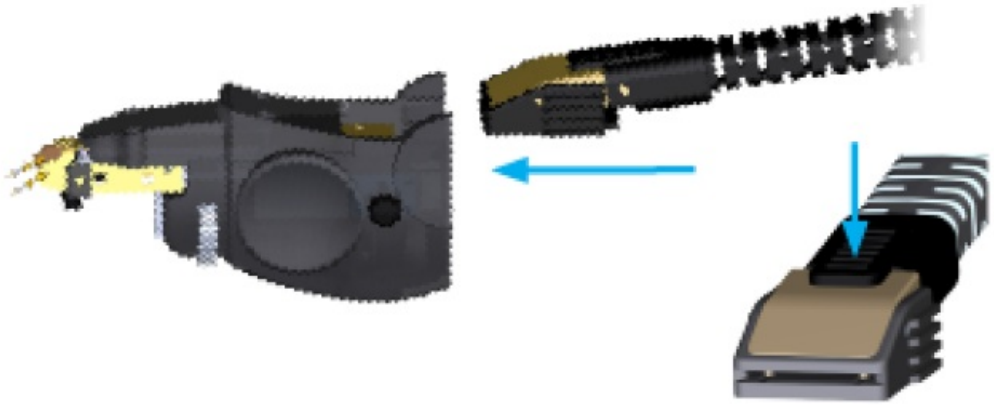
CAUTION: To avoid ESD damage to the probe, always use an antistatic wrist strap (provided with your probe), and work at a static-approved workstation when you handle the probe.

1. Connect the probe to the host instrument.
If it is the first time the probe has been connected to the oscilloscope, the oscilloscope will download the S-parameters stored in the
probe. Once the oscilloscope has stored the S-parameters for the probe, it doesn't matter which channel the probe is plugged into. The
stored S-parameters will be available for any channel the probe is moved to.
2. Connect the probe tip to the TekFlex connector on the probe.
When a tip is inserted into the probe for the first time, the oscilloscope will download the S-parameter data stored in the tip.
3. The probe performs a self test, and then one Input Mode LED remains on.
4. Open the Calibration menu (found in the Vertical menu).
5. Perform the DC probe calibration procedure using the optional DC probe cal fixture. See TriMode probe DC compensation.
6. Use the Probe Setup screen to set the probe parameters as described in the Basic operation section.

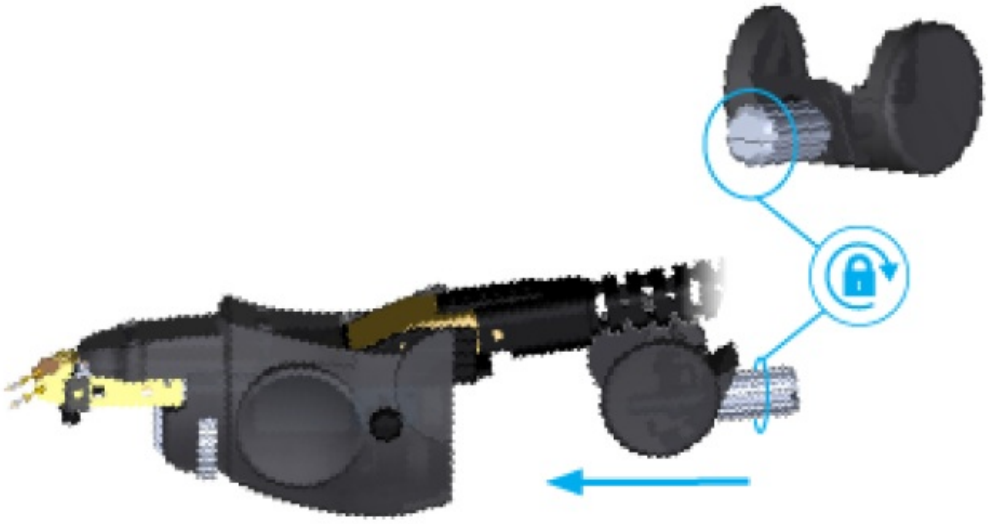
Get to know your Browser

Assemble the Browser

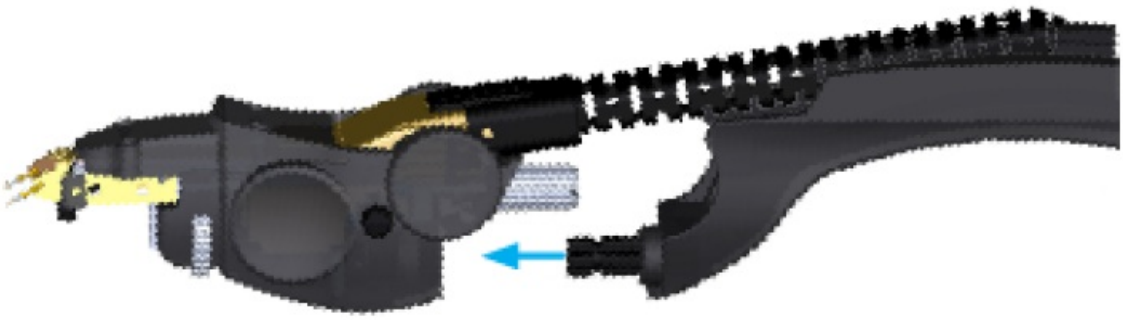
1. Insert the TekFlex connector. Pinch to open the collar.



2. Attach browser pen wand or tripod. Turn the knob clockwise to lock and counter clockwise to unlock.

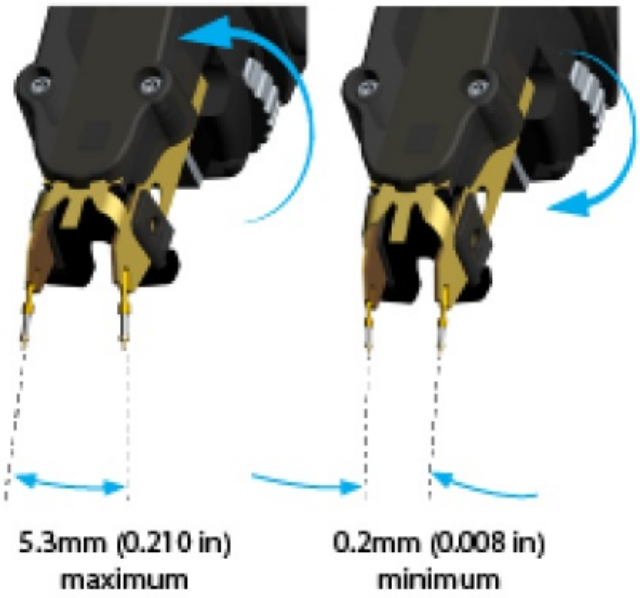


3. Attach browser pen wand or tripod.

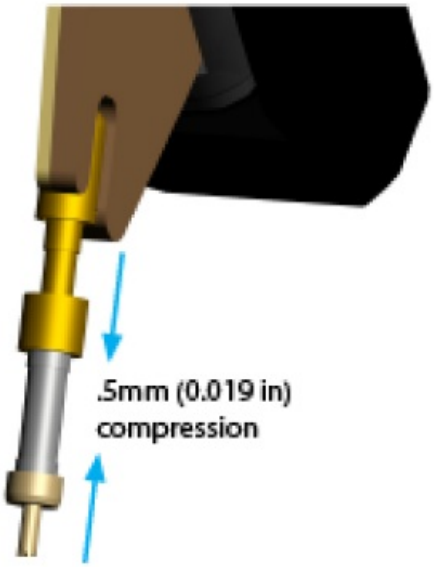


Browser

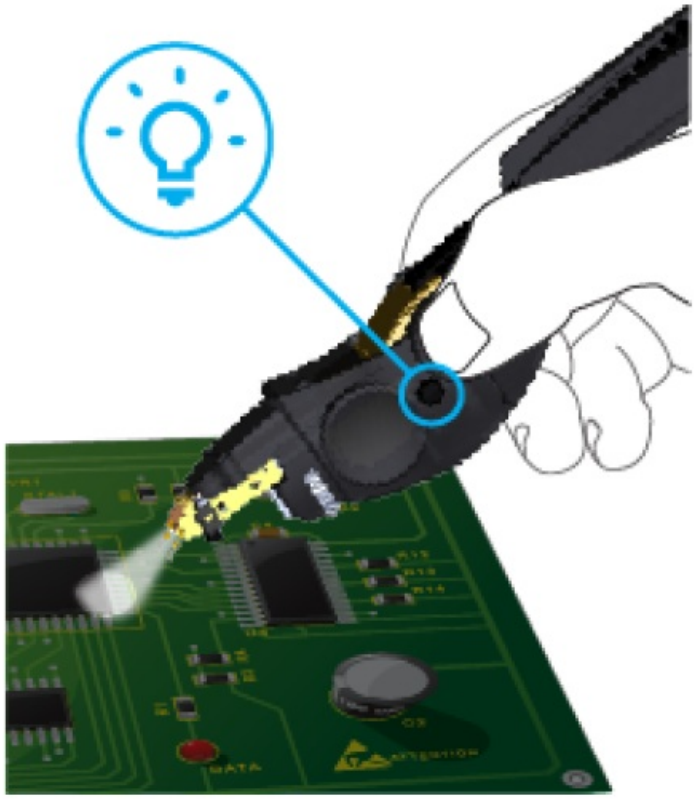
Adjust the tip spacing.



Spring action, better grip.



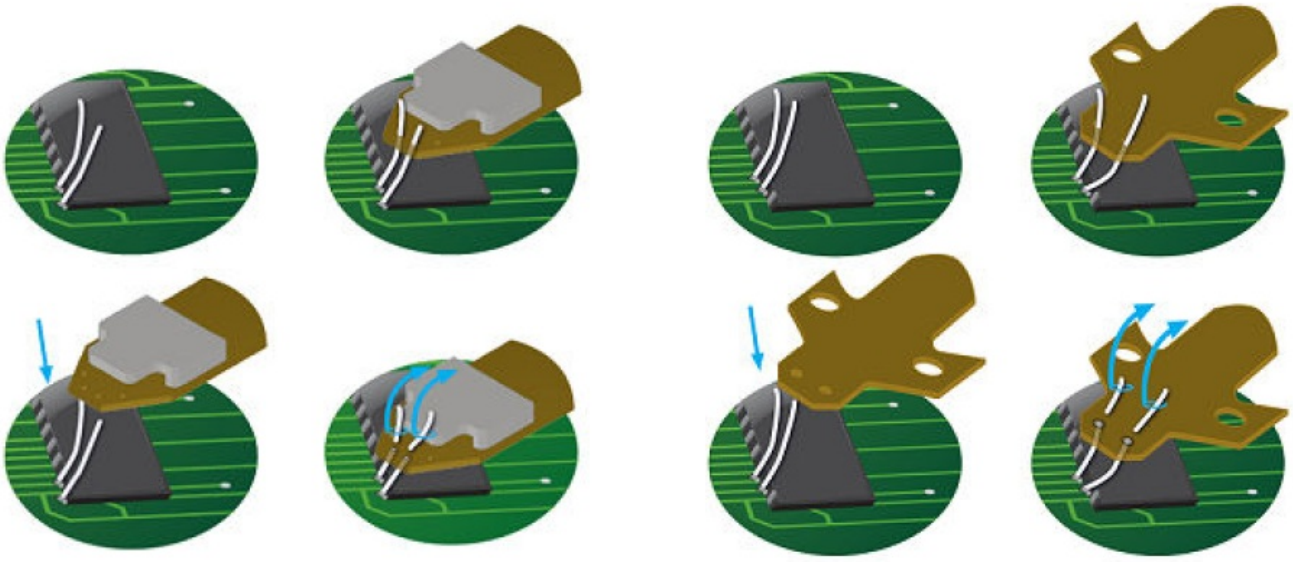
Depress switch to activate spotlight.



To connect the tripod, install the circular end of the shaft into the tripod and the plus side into the browser.

Test your circuit with the solder-in-tips

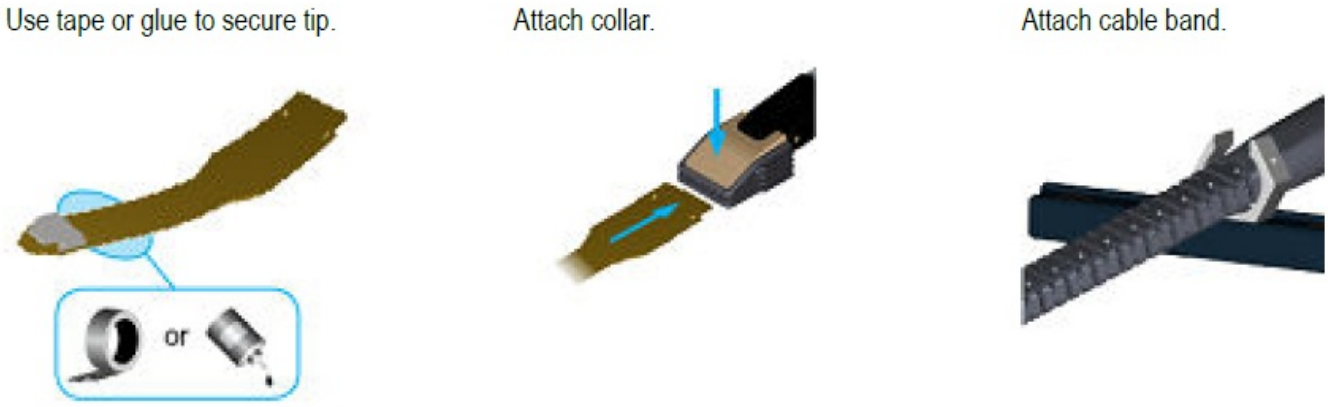
Attach tips to soldered wires and clip access wire
The number of wires you use depends on the tip type.



Secure tip

You can solder or use glue to secure points of contact of DUT. Available adhesives from EMIUV (emiuv.com):

- 3761-20K (securing adhesive UVSecureTM)
- EM10706 (electrically conductive adhesive UVConductTM)



The LIGHTFOOT kit quick setup

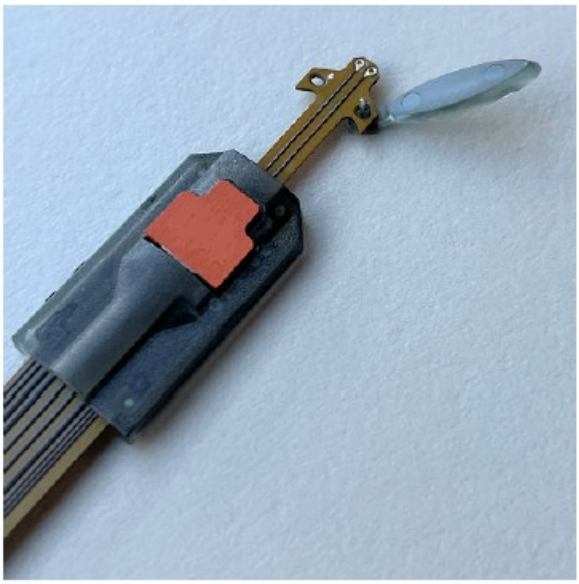
The P77STFLRB, P77HTFLRB, P77STFLRA, and P77HTFLRA active standard and high temperature flexible long reach solder-in tips come with LIGHTFOOTTM handle, clip, and adhesive tape accessories to help you more easily position the tips. The flexible tip allows for maneuverability of placement.

Kit accessories

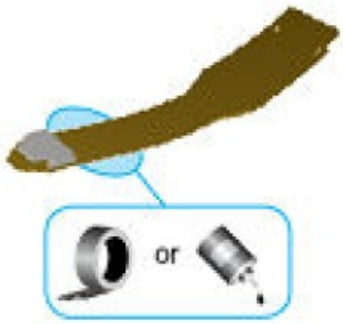
Item	Quantity
Handle	3
Grip clip	3
Tape	5

Use the handle to place the tip

1. Use the handle to hold the tip in place for wire threading and trimming. The handle uses a swivel lock and can be placed in either side-wing on the tip.

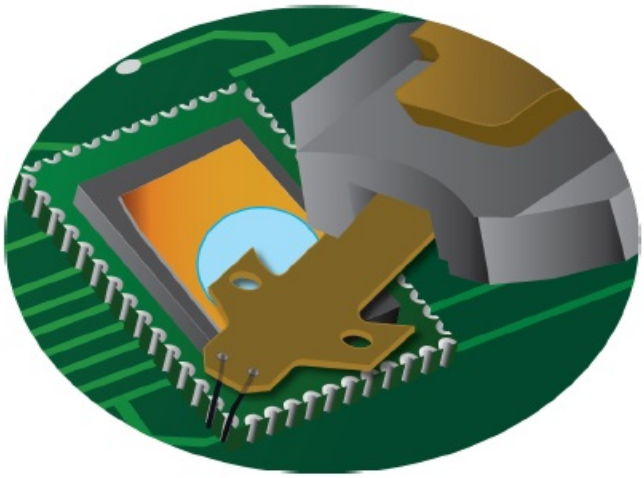


2. Use liquid adhesive to secure the handle as needed. If you do not need the handle, remove it once you have placed the tip. (See emiuv.com for adhesives.)



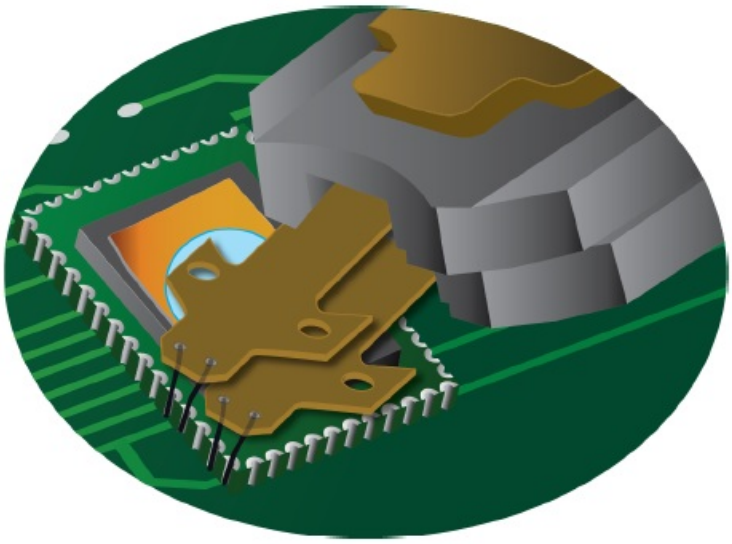
3. The flexible holding tabs (sides) of the clip provide strain relief. This allows you to secure the clip to the long body of the tip. You can use a liquid adhesive beneath the clip to secure the tip to the DUT.

4. Adhesive tape can be placed on the IC package top. Glue can be applied onto the tape under one or both wings. This allows you to later easily remove the tip from the DUT by removing the tape.



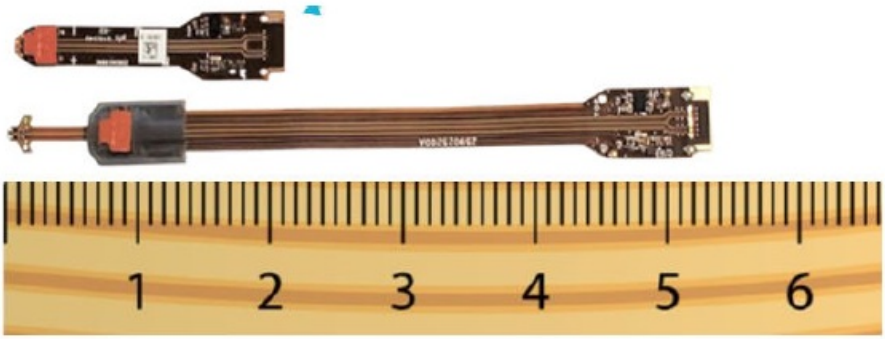
Placement on the DUT

You can place a single tip or overlay multiple tips onto the DUT surface.



Additional information

FLR and FLX tip size comparison



The tip wings can be used to place adhesive on or they can be trimmed if required for placement.

You can visually identify the FLR A versus B tips. The A versions have a blue plastic housing. In addition, there is an intentional cutout on the A tips near the plastic housing that is not present on the B tips.

Important safety information

This manual contains information and warnings that must be followed by the user for safe operation and to keep the product in a safe condition.
To safely perform service on this product, see the Service safety summary that follows the General safety summary.

General safety summary

Use the product only as specified. Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. Carefully read all instructions. Retain these instructions for future reference.

This product is not intended for detection of hazardous voltages.

To avoid fire or personal injury

- Observe all terminal ratings.
- To avoid fire or shock hazard, observe all rating and markings on the product. Consult the product manual for further ratings information before making connections to the product.
- Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.
- Do not operate without covers
- Do not operate this product with covers or panels removed, or with the case open. Hazardous voltage exposure is possible.

Avoid exposed circuitry

- Do not touch exposed connections and components when power is present.
- Do not operate in wet/damp conditions
  Be aware that condensation may occur if a unit is moved from a cold to a warm environment.
- Do not operate in an explosive atmosphere
- Keep product surfaces clean and dry
  Remove the input signals before you clean the product.

Probes and test leads

- Inspect the probe and accessories
  Before each use, inspect probe and accessories for damage (cuts, tears, or defects in the probe body, accessories, or cable jacket). Do not use if damaged.

Terms in this manual

These terms may appear in this manual:

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

CAUTION: Caution statements identify conditions or practices that could result in damage to this product or other property.

Terms on the product

These terms may appear on the product:

- DANGER indicates an injury hazard immediately accessible as you read the marking.
- WARNING indicates an injury hazard not immediately accessible as you read the marking.
- CAUTION indicates a hazard to property including the product.

Symbols on the product

When this symbol is marked on the product, be sure to consult the manual to find out the nature of the potential hazards and any actions which have to be taken to avoid them. (This symbol may also be used to refer the user to ratings in the manual.)

The following symbols(s) may appear on the product.

CAUTION
Refer to Manual

Handling the probe

This probe is a precision high-frequency device; exercise care when you use and store the probe. The probe and cable are susceptible to damage caused by careless use. Always handle the probe at the comp box and probe body to avoid undue physical strain to the probe cable, such as kinking, excessive bending, or pulling. Visible dents in the cable will increase signal aberrations.

CAUTION: To prevent damage to the probe, always use an antistatic wrist strap connected to a static-controlled workstation when you handle the probe. The probe input contains electronic components that can be damaged by contact with high voltages, including static discharge.

Observe the following precautions when using the probe. Do not do any of the following:

- Drop the probe or subject it to physical shock
- Subject the probe to adverse weather conditions
- Kink or fold the probe main cable tighter than a 2.5 inch radius; minimum bend radius for the solder tips is 0.25 inch (6.35 mm)
- Solder the tips with excessive heat or duration
- Injure yourself with the sharp tips

See Probe handling best practices.

Cleaning the probe

CAUTION: To prevent damage to the probe, do not expose it to sprays, liquids, or solvents. Avoid getting moisture inside the probe during exterior cleaning.

Do not use chemical cleaning agents; they may damage the probe. Avoid using chemicals that contain benzine, benzene, toluene, xylene, acetone, or similar solvents.
Clean the exterior surfaces of the probe with a dry, lint-free cloth or a soft-bristle brush. If dirt remains, use a soft cloth or swab dampened with a 75% isopropyl alcohol solution and rinse with deionized water. A swab is useful to clean narrow spaces on the probe; use only enough solution to dampen the swab or cloth. Do not use abrasive compounds on any part of the probe.

Specifications:

- Product: P7700 Series Trimode Probes and Tips
- Probe Models: P7700 Series TriMode Probe family
- Standard Accessories:
  - Active tips (2 solder tips)
  - Adhesive tape

FAQ:

How do I find product documentation?

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What safety precautions should I follow while using the probe?

Always work at an antistatic work station and wear the antistatic wrist strap when using the probe to prevent any static-related issues.

Documents / Resources

	**Tektronix P7700 Series Trimode Probes and Tips** [pdf] User Manual P7700 Series Trimode Probes and Tips, P7700 Series, Trimode Probes and Tips, Probes and Tips, Tips

References

- **Home - EMIUV**

- Test and Measurement Equipment | Tektronix
- Test and Measurement Equipment | Tektronix
- Home - EMIUV
- User Manual

Manuals+, Privacy Policy

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