

## Additional Recommended Accessories







MX0104A PV / Deskew Fixture	To calibrate and verify the performance of your probe
N2787A 3D Probe Positioner	To properly position the probe amplifier during the calibration/deskew procedure
N5450B Extreme Temperature Extension Cable	To physically separate the amplifier from the probe head in extreme temperature testing environment
MX0102A Soldering Toolkit	Includes useful tools to make soldering job easier
N2852A AutoProbe II to AutoProbe III Interface Adapter	To connect an AutoProbe II interface probe to an Infiniium AutoProbe III interface oscilloscope
N2880A In-line Attenuator	To increase the dynamic range and offset range of the probe
N2881A DC Blocking Cap	To block out unwanted DC component of the input signal
N5448B (25 cm) / N2823A (1 m) Phase-matched Coaxial Cable Pair	To add flexibility and convenience to the probing setup by extending the cable length of the probe head such as MX0105A SMA probe head
N2812B (1m) Input Cable	High Performance Input Cable with 2.92 mm connectors (for use with Infiniium V, 90000-X/Q, UXR <=33 GHz series oscilloscopes)

All these accessories are described in the user's guide of the Ultra series probe amplifiers and probe heads.

## Safety Warnings and Cautions

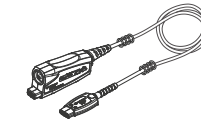
- WARNING** If the probe assembly is used in a manner not specified by the manufacturer, the protection provided by it may be impaired.
- WARNING** These amplifiers and probe heads are for use only on circuits that are MAINS ISOLATED (NOT directly connected to mains). These are NOT intended for measurements on CAT II, CAT III, or CAT IV circuits.
- WARNING** Do not apply electrical potential to the probe input that exceeds the maximum rating of the probe. Refer to the user's guide for maximum input voltage ratings.
- WARNING** Use Only Grounded Instruments. Do not connect the probe's ground lead to a potential other than earth ground. Always make sure the probe and oscilloscope are grounded properly. Before making connections to the input leads of probe, ensure that the probe's output connector is attached to the channel input of the oscilloscope and the oscilloscope is properly grounded.
- WARNING** Do not attempt internal service or adjustment. Service should be carried out by a Keysight Technologies authorized service personnel.

## Safety Symbols and Markings

	This symbol indicates the Environmental Protection Use Period (EPUP) for the product's toxic substances for the China RoHS requirements.
	Notice for the European Community: This product complies with the WEEE Directive (2002/96/EC) marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Product Category: With reference to the requirement types in the WEEE Directive Annex I, this product is classed as a "Monitoring and Control Instrumentation" product. Do not dispose in domestic household waste. To return unwanted products, contact your local Keysight office.
	The product is marked with this symbol when it is necessary for the user to refer to the instructions in the documentation.
	Contains parts or assemblies susceptible to damage by electrostatic discharge (ESD). Use electrostatic discharge protective handling procedures. See the user's guide for instructions.
	The CE mark is a registered trademark of the European Community. ISM GRP 1-A denotes the instrument is an Industrial Scientific and Medical Group 1 Class A product. ICES/NMB-001 indicates product compliance with the Canadian Interference-Causing Equipment Standard.
	This mark denotes compliance with the essential requirements of the following applicable UK regulations: - Electromagnetic Compatibility Regulations 2016 No. 1091 (as amended) - Electrical Equipment (Safety) Regulations 2016 No. 1101 (as amended) - The Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment Regulations 2012 No. 3032 (as amended)

# Keysight InfiniiMax Ultra Series Probe Amplifiers and Probe Heads

## Probe Amplifiers with AutoProbe II Interface

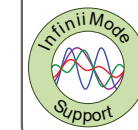


MX0020A	10 GHz
MX0021A	13 GHz
MX0022A	16 GHz
MX0024A	20 GHz
MX0025A	25 GHz

Refer to the user's guide to get a complete list of compatible oscilloscopes and adapter(s) (if needed) to connect the probe to the oscilloscope.

### InfiniiMode Support

Ultra series probe amplifiers support InfiniiMode when used with InfiniiMode capable probe heads (as indicated in this card)



- A - B (differential)
- A to ground (single-ended A)
- B to ground (single-ended B)
- (A+B)/2 to ground (common-mode)

### Probe Response Options

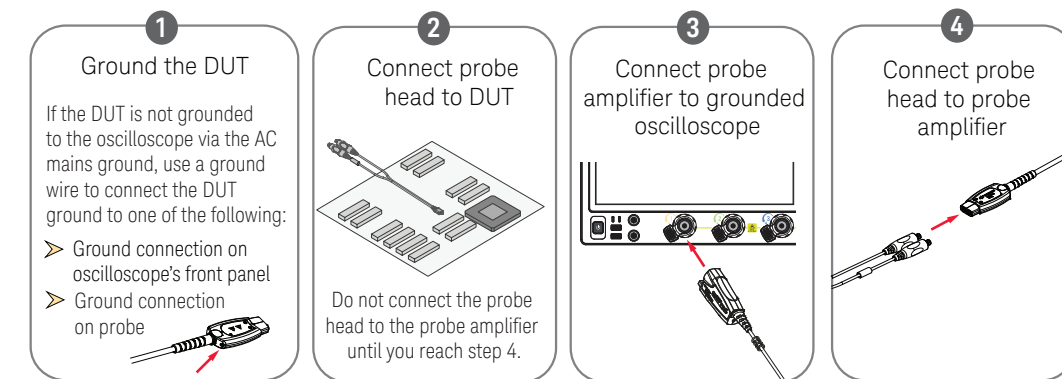
Available with AutoProbe II interface models of Ultra series probe amplifiers


- True View** Shows the voltage at the tip of the probe as loaded by the probe (Vout/Vin).
- Source Estimate** Estimates the voltage at the probe point as if the probe is not there (Vout/Vsource).

## Probes Documentation

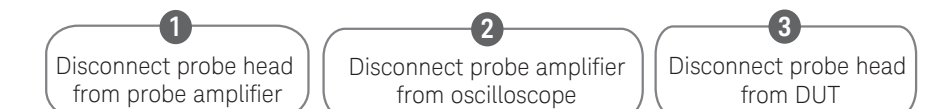
- Download the user's guide from the product page at <https://www.keysight.com/find/MX0025A>.
- Visit the Probe Resource Center (PRC) which is accessible from <https://www.keysight.com/find/PRC>.

## Probe Connection Sequence



 These probes are ESD sensitive devices, particularly at the probe heads. Follow standard ESD precautions when handling these.

## Probe Disconnection Sequence



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1900 Garden of the Gods Road  
Colorado Springs, CO 80907

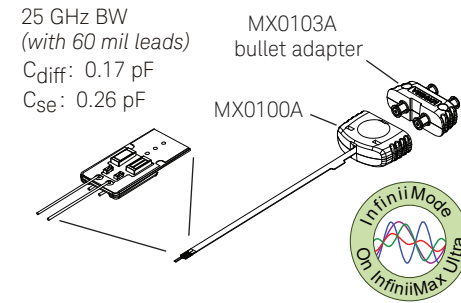
MX0020-92001, April 2024,  
Printed in USA



\*MX0020-92001\*

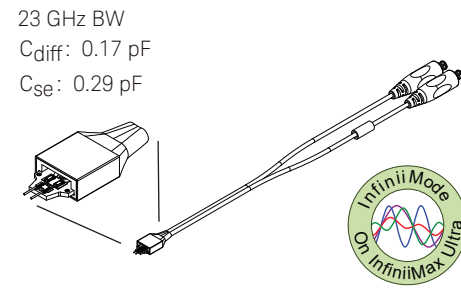
## Recommended Probe Head Configurations (listed in order of supported bandwidth)

### 1. MX0100A InfiniiMax Micro Probe Head



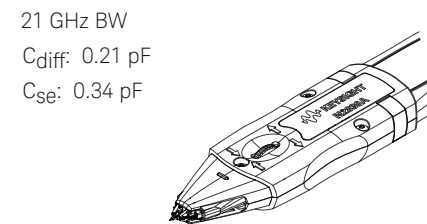
- Lowest input loading
- Light, flexible, smallest, and reusable
- Micro solder-in head designed to access small geometry target devices
- Accessory: MX0103A bullet adapter is included with MX0100A for easy connection and disconnection from the probe amplifier
- MX0102A soldering tool kit (available separately) with useful tools to make soldering easier
- Can withstand -55 °C to +150 °C temperature range

### 2. MX0106A InfiniiMax Differential Solder-in Probe Head



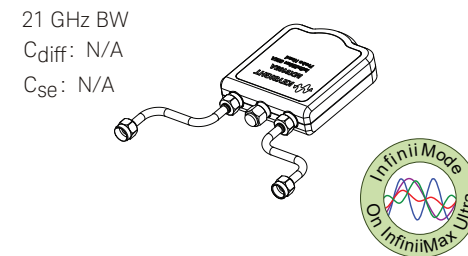
- Most reliable semi-permanent signal access for high fidelity measurements
- Solder-in connection for differential and single-ended signals
- Can withstand -55 °C to +150 °C temperature range
- Replaceable lead wires. Strong 0.007 inch tin-plated nickel wires to allow connection to very small, fine pitch targets
- Wires must be cut to proper lengths (see user's guide)

### 3. N2839A InfiniiMax II Browser Probe Head



- For general purpose troubleshooting and signal browsing
- Probe either differential or single-ended signals
- Adjustable tip spacing (0 to 3 mm)
- Spring-loaded and solid tips included
- Compatible with N2784/5A or N2787A probe positioners
- For additional tips, order N2837A Replacement Tip Kit

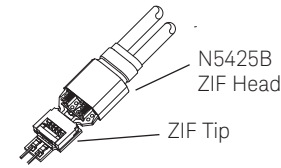
### 4. MX0105A InfiniiMax Differential SMA Probe Head



- For differential cable measurement with voltage termination
- Removes inherent cable loss through compensation
- Frees additional oscilloscope channels by using a single channel to measure differential signals (compared to using two oscilloscope channels)
- Offset matched SMA cables adapt to variable spacing

## Recommended Probe Head Configurations (continued)

### 5. N5425B InfiniiMax Differential ZIF Probe Head



- Low cost and multiple ZIF tips options for probing multiple test points in a tight space
- Slightly higher loading than solder-in head

#### a. N5426A ZIF Tip



18 GHz BW  
 $C_{diff}$ : 0.33 pF  
 $C_{se}$ : 0.53 pF

- Very small fine pitch targets
- Solder tip

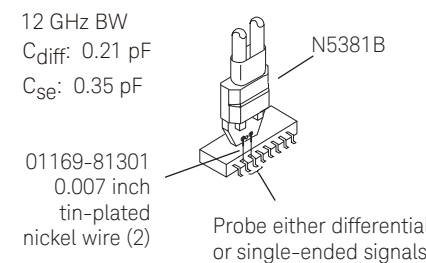
#### b. N2884A Fine Wire ZIF Tip



18 GHz BW  
 $C_{diff}$ : 0.35 pF

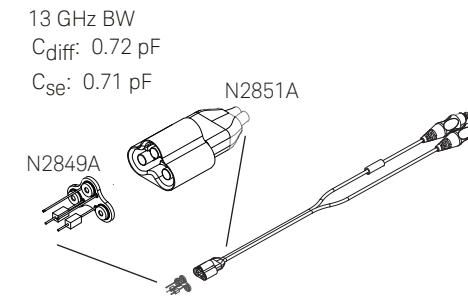
- Extremely small fine pitch targets
- High fidelity, differential probing of active ICs
- Fragile lead wires
- Not for soldering

### 7. N5381B InfiniiMax Differential Solder-in Probe Head



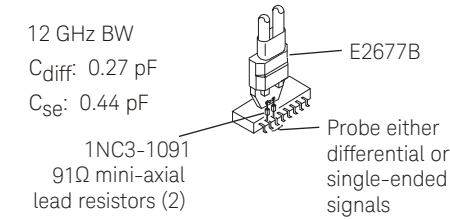
- Solder-in connection for differential and single-ended signals
- Low input loading ( 0.21 pF differential)
- Wires must be cut to proper lengths (see user's guide)

### 6. N2851A QuickTip Probe Head



- Used with the accessory: N2849A QuickTip tips (set of 4 tips - to be ordered separately)
- Solder QuickTip tips to DUT
- Easy, secure, magnetic connection between probe head and QuickTip
- Magnetic connection allows instant connection /disconnection to multiple probe points

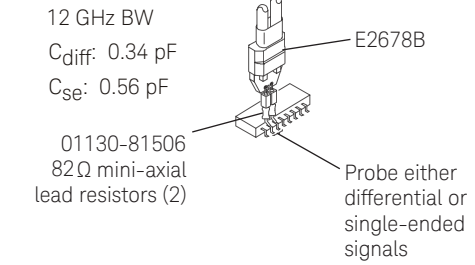
### 8. E2677B InfiniiMax Differential Solder-in Probe Head



- Solder-in connection for differential and single-ended signals
- Higher capacitance than N5381B
- Resistors must be cut to proper lengths (see user's guide)

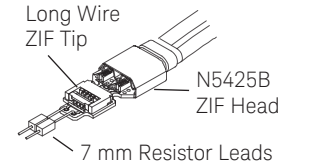
## Recommended Probe Head Configurations (continued)

### 9. E2678B InfiniiMax Differential Socketed Probe Head



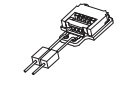
- Socketed connection for differential and single-ended signals
- Slightly higher capacitance than solder-in head
- Removable hands-free connection to the damping resistors soldered to the target
- Compatible with the following headers with 100 mil spacing
  - > 20 mil square pin header or
  - > 25 mil square pin header with 01130-63201 adapter

### 10. N5425B InfiniiMax ZIF Probe Head with Long Wire ZIF Tips



- Low cost and multiple solder tips options for probing variable pitch targets, including larger pitches
- Slightly higher loading than solder-in head

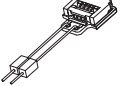
#### a. N5451A ZIF Tip (7 mm)



~9.9 GHz BW  
(0° tip span)  
~4.4 GHz BW  
(60° tip span)  
 $C_{diff}$ : 0.6 pF  
 $C_{se}$ : 0.58 pF

- 7 mm leads provide long reach

#### b. N5451A ZIF Tip (11 mm)



~5 GHz BW  
(0° tip span)  
~3.3 GHz BW  
(60° tip span)  
 $C_{diff}$ : 0.68 pF  
 $C_{se}$ : 0.68 pF

- 11 mm leads provide extra long reach



The bandwidth listed in this card is the maximum bandwidth supported by each probe head. For any combination of a probe head with a probe amplifier, the applicable bandwidth is the lesser of the supported bandwidths of the probe head or the probe amplifier. For example, using the MX0025A, which supports a 25 GHz bandwidth, with a MX0106A, which supports a 23 GHz bandwidth, would produce a system with a 23 GHz bandwidth.



Only the recommended probe head configurations for InfiniiMax Ultra series probe amplifiers are listed in this card. This is not a comprehensive list of all compatible probe heads. For a complete list of compatible probe heads for these amplifiers, please see the user's guide or Probe Resource Center (PRC).



InfiniiMax III and III+ probe heads are NOT compatible with InfiniiMax Ultra series probe amplifiers.