Additional 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 with useful tools to make soldering job easier

- N2852A AutoProbe II to AutoProbe III Interface Adapter to connect a probe with AutoProbe II interface to an Infiniium UXR series oscilloscope with AutoProbe III interface

- N5448B (25cm) / N2823A (1m) Phase Matched Cable Pair

- N2812B (1m) High Performance Input Cable with 2.92 mm connectors (for use with Infiniium V, 90000-X/Q, UXR <=33 GHz series oscilloscopes)

- 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

All these accessories are described in detail in the user's guide of the probe amplifier and probe heads.

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.

This symbol indicates that it is necessary for you to follow the instructions in the user's guide to protect against damage to the product or personal injury.

Contains parts or assemblies susceptible to damage by electrostatic discharge (ESD). Use electrostatic discharge protective handling procedures. See the user's guide for instructions.

WARNING If the probe is not used as specified, the protection provided by the probe could be impaired. Follow the instructions given in the probe's documentation.

WARNING The amplifier and probe heads are for use only on circuits that are NOT directly connected to mains. These are NOT intended for measurements on CAT II, CAT III, or CAT IV circuits.

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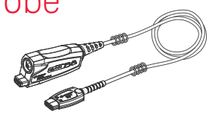
MX0023-92001

MX0023A InfiniiMax 25 GHz RC Probe Amplifier Configuration Card



Locate the Probes Documentation

Download the user's guide for the MX0023A InfiniiMax RC probe amplifier and its compatible probe heads from the probe's product page at www.keysight.com/find/MX0023A. Probes related documentation is also available in Keysight's Probe Resource Center (PRC) which is accessible from www.keysight.com/find/PRC.

Compatible Oscilloscopes

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

CAUTION **Probes are ESD sensitive devices particularly at the probe heads. ESD can quickly and imperceptibly damage or destroy probes. Always work at a static-safe workstation and wear a wrist strap when handling probe components. Refer to the probe's user's guide for safety and handling information.**

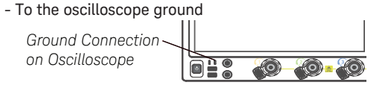
Probe Connection Sequence

Follow these four steps when setting up the MX0023A probe.

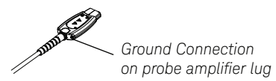
1 Ground the DUT

If the DUT is not grounded to the oscilloscope via the AC mains ground, use the ground lead wire to connect the DUT ground to one of the following:

- To the oscilloscope ground

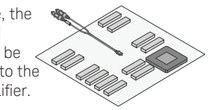


- To the probe amplifier ground



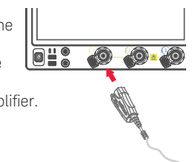
2 Connect the probe head to the DUT

At this time, the probe head MUST NOT be connected to the probe amplifier.



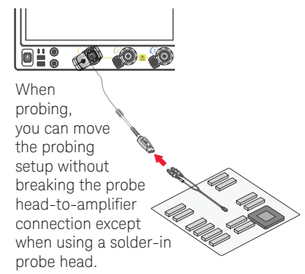
3 Connect the probe amplifier to the grounded oscilloscope

At this time, the probe head MUST NOT be connected to the probe amplifier.



4 Connect the probe head to the probe amplifier

Push the probe head connectors straight into the amplifier's sockets.



When probing, you can move the probing setup without breaking the probe head-to-amplifier connection except when using a solder-in probe head.

Probe Disconnection Sequence

1 Disconnect the probe head from the probe amplifier

Pull the probe head connectors straight out of the amplifier's sockets.

2 Disconnect the probe amplifier from the oscilloscope and the probe head from the DUT

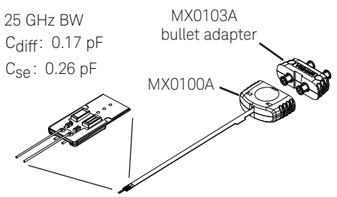
KEYSIGHT TECHNOLOGIES

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

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 MX0023A, which supports a 25 GHz bandwidth, with a MX0106A, which supports a 23 GHz bandwidth, would produce a system with a 23 GHz bandwidth.

1. MX0100A InfiniiMax Micro Probe Head

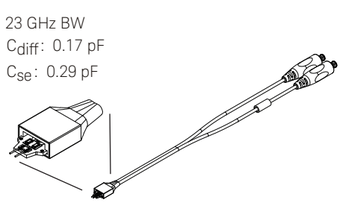
25 GHz BW
C_{diff}: 0.17 pF
C_{se}: 0.26 pF



- 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

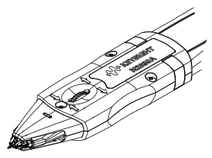
23 GHz BW
C_{diff}: 0.17 pF
C_{se}: 0.29 pF



- 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

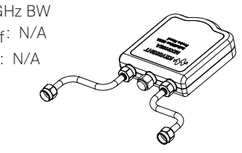
21 GHz BW
C_{diff}: 0.21 pF
C_{se}: 0.34 pF



- 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

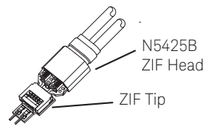
21 GHz BW
C_{diff}: N/A
C_{se}: N/A



- 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

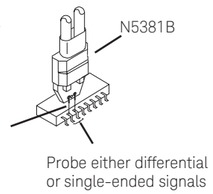
b. N2884A Fine Wire ZIF Tip

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

6. N5381B InfiniiMax Differential Solder-in Probe Head

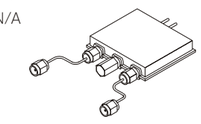
12 GHz BW
C_{diff}: 0.21 pF
C_{se}: 0.35 pF



- 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)

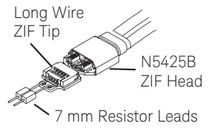
7. N5380B InfiniiMax Differential SMA Probe Head

12 GHz BW
C_{diff}: N/A
C_{se}: N/A



- 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

8. N5425B InfiniiMax ZIF Probe Head with Long Wire ZIF Tips



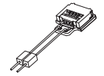
- Low cost and multiple solder tips options for probing variable pitch targets, including larger pitches
- Slightly higher loading than solder-in head

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)



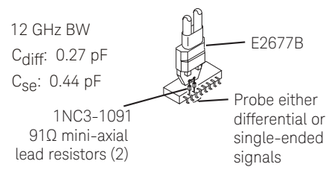
~5 GHz BW (0° tip span)
~3.3 GHz BW (60° tip span)
C_{diff} : 0.68 pF
C_{se} : 0.68 pF

- 11 mm leads provide extra long reach

Recommended Probe Head Configurations (continued)

9. E2677B InfiniiMax Differential Solder-in Probe Head

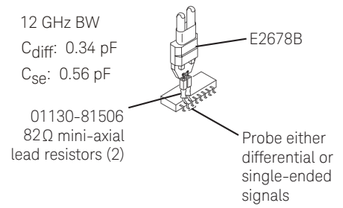
12 GHz BW
C_{diff}: 0.27 pF
C_{se}: 0.44 pF



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

10. E2678B InfiniiMax Differential Socketed Probe Head

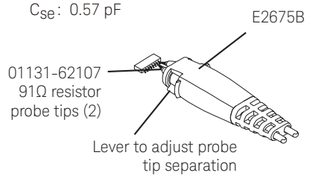
12 GHz BW
C_{diff}: 0.34 pF
C_{se}: 0.56 pF



- 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 sqaure pin header or
  - 25 mil square pin header with 01130-63201 adapter

11. E2675B InfiniiMax Differential Browser Probe Head

6 GHz BW
C_{diff}: 0.32 pF
C_{se}: 0.57 pF



- Only InfiniiMax I and II probe heads listed in this card are compatible with InfiniiMax RC probes.
- InfiniiMax III and III+ probe heads are NOT compatible with InfiniiMax RC probes.