

# Agilent N2884A InfiniiMax Differential Fine-wire Probing Tip

## Data Sheet

### Introduction

The N2884A InfiniiMax differential fine-wire probing tip is a high fidelity, high bandwidth solution to probe an active IC. It is targeted for R&D and test engineers using an oscilloscope for debugging and testing ICs. The N2884A provides an innovative differential probing approach that is unmatched by any competitors in the market.

Leveraging Agilent's low-cost ZIF probe head technology, the N2884A is designed to offer you a flat frequency response over the entire 12 GHz bandwidth specification, which eliminates the distortion and loading that affect probes with in-band resonance. Unlike other market solutions which measure a voltage versus some ground far away from the probe point, the N2884A measures a voltage versus an adjacent local ground (or other node) on the DUT. This results in greater rejection of common mode noise and superior signal integrity in measurement.



*Figure 1: N2884A fine wire probing tip*

- Bandwidth : 12 GHz (with 1169A InfiniiMax amplifier and N5425A ZIF probe head)
- Rise time : 33 psec (probe only)
- Input capacitance : 350 fF (differential), 520 fF (single-ended)
- Tungsten probing wire shaft diameter: 22 microns
- Point radius : <0.1 micron
- 100 mil long tungsten wires



The N2884A comes with a probe arm and a set of 5 probe tips. The probe arm is compatible with the Wentworth Laboratories micropositioner as shown in figure 3. You can either order it directly from Wentworth Laboratories ([www.wentworthlab.com](http://www.wentworthlab.com)) or you can order it from Agilent. If you order it through Agilent, you must order the following two parts.

- N2884-64702 (Wentworth 2026-90409 PVX 400-M: Manual Linear Manipulator Magnetic Base)
- N2884-64703 (Wentworth 5-00-4711 Short Nose Articulated Short Arm Front)



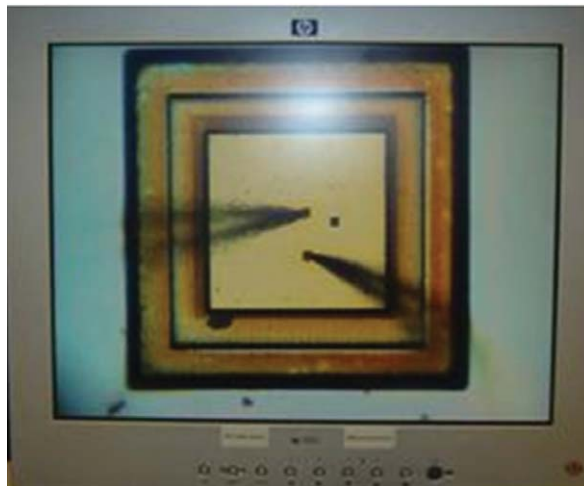
**Figure 2: N2884A comes with a probe arm and a set of 5 probe tips**



**Figure 3: N2884A with Wentworth micropositioner**

**To operate the wafer probing with N2884A, the following list of equipment is needed.**

- Agilent Infiniium 9000, 80000 or 90000 Series oscilloscope
- N2884A InfiniiMax finewire probe tips
- 1130A-34A or 1168A/69A InfiniiMax probe amplifier
- N5425A ZIF probe head
- Wentworth micropositioner (can be orderable from Agilent)



**Figure 4: Probe tips successfully landed on the test points**

# Measurement Plots

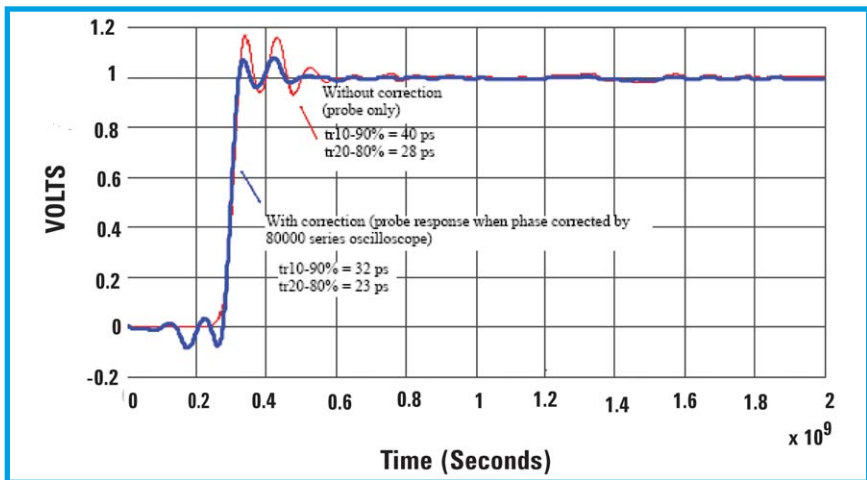


Figure 5: The step responses with (blue) and without (red) phase correction

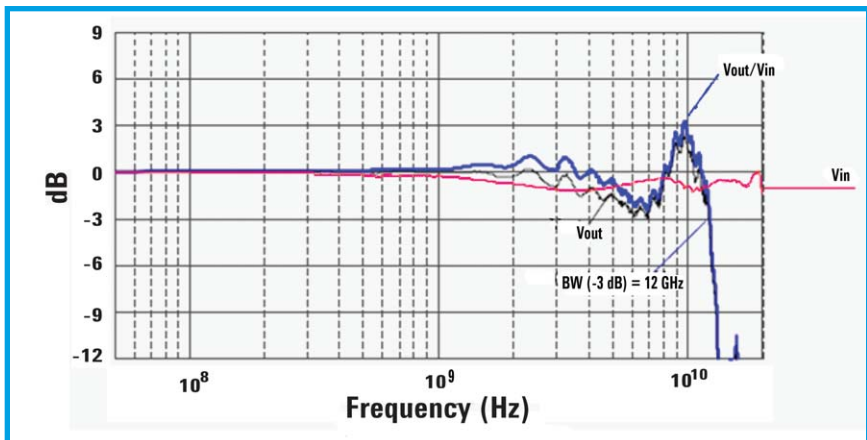


Figure 6: The frequency characteristics of  $V_{out}/V_{in}$  with a  $25 \Omega$  source

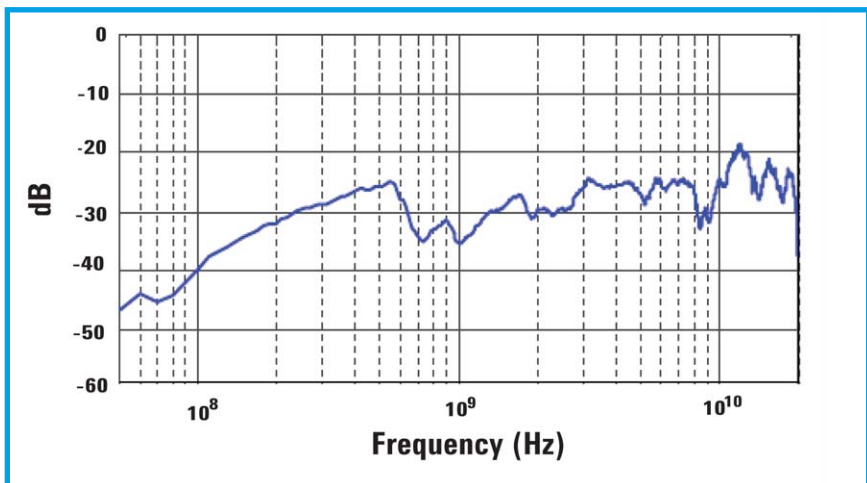


Figure 7: The frequency response when two inputs are driven in common (common mode rejection)

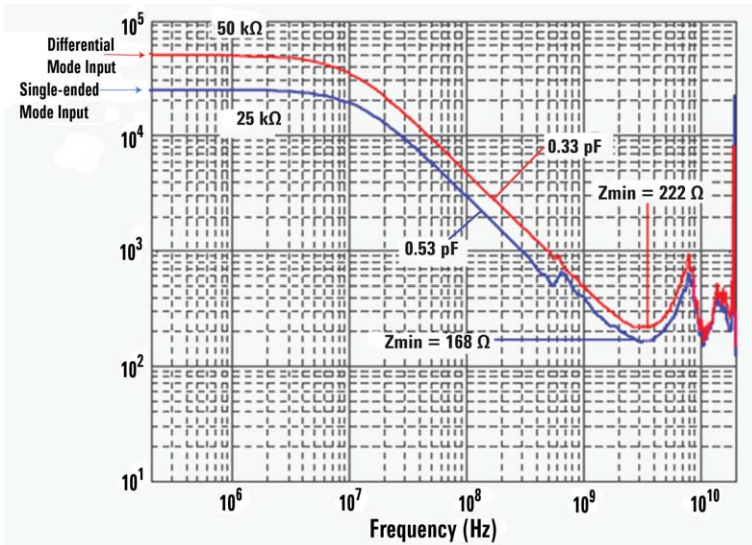


Figure 8: The magnitude plot of probe input impedance vs. frequency

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