

KEYSIGHT TECHNOLOGIES (AGILENT HP)

N2803A

The Keysight Technologies N2803A is an InfiniiMax III series active probe amplifier designed for high-speed differential measurements up to 30 GHz. Utilizing advanced indium phosphide (InP) semiconductor technology, this probe offers exceptionally low loading and high fidelity, making it ideal for characterizing high-speed serial buses and RF signals in combination with Keysight Infiniium real-time oscilloscopes.

SPECIFICATIONS

General

Interfaces	AutoProbe II interface
Compatible Oscilloscopes	Keysight Infiniium 90000 X-Series, 90000 Q-Series, Z-Series, V-Series, and UXR-Series

Physical

Power Supply	Powered directly by Keysight Infiniium oscilloscope through AutoProbe II interface
Operating Temperature	5 °C to 40 °C °C
Cable Length	1.2 m

Bandwidth & Rise Time

Probe Bandwidth	30 GHz
Rise Time (10% to 90%)	13.3 ps
Rise Time (20% to 80%)	9.1 ps

Input Impedance

Differential Input Resistance	100 k Ω $\pm$ 2%
Single-ended Input Resistance	50 k Ω $\pm$ 2%
Differential Input Capacitance	86 fF (with N5445A browser)
Single-ended Input Capacitance	142 fF (with N5445A browser)

Signal Range

Dynamic Range	1.6 Vpp
DC Offset Range	$\pm$ 16 V
Maximum Non-destructive Input Voltage	$\pm$ 8 V (DC + AC peak)
Common Mode Range	$\pm$ 6.25 V (at DC), $\pm$ 1.5 V (at AC)

Electrical Specifications

Probe Attenuation Ratio	4:1 / 8:1 (attenuation-dependent)
Probe Noise	2.4 mV rms (referred to input)

Performance

DC Gain Accuracy	±2%
Common Mode Rejection Ratio (CMRR)	> 40 dB at DC, > 30 dB at 1 GHz, > 12 dB at 20 GHz (probe head dependent)
Propagation Delay	5.1 ns (probe amplifier only)
DSP Correction	Individual S-parameters stored in probe EEPROM

Inputs & Outputs

Input Coupling	DC
Output Impedance	50 Ω

Environmental

Storage Temperature	-40 °C to +70 °C
Operating Humidity	95% RH at up to 40 °C (non-condensing)

Reliability & ESD

ESD Tolerance	8 kV (Human Body Model)
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Compatibility

Compatible Probe Heads	N5445A, N5439A, N5444A, N2848A, N2849A
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TECHNOLOGY

Active Differential Probe Amplifier

APPLICATIONS

High-speed serial bus characterization, differential signal measurements, and ultra-high bandwidth oscilloscope probing

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