

Keysight Technologies

Extreme Temperature Probing Solutions for Oscilloscope Measurements

Industry's most comprehensive extreme-temperature chamber testing solutions for oscilloscopes



- Perfect probing solution for extreme environmental testing
- Supports temperature ranges up to -55 to $+150$ °C

Many engineers have a need to monitor their product in an environmental chamber with an oscilloscope probe to verify performance over a wide range of operating temperatures or to determine the cause of failures at high or low temperatures. Until now, testing in extreme temperature ranges required engineers to use probes outside their specified operating temperatures, which can damage probes. Most active or passive probes in the market have a specified operating temperature range anywhere from 0 to 50 °C. However, Keysight Technologies, Inc. N2797A extreme temperature active probe can be operated over a much wider -40 to $+85$ °C range. This allows you to operate the probe head and the supplied probing accessories inside a temperature chamber with the probe pod and oscilloscope located outside the temperature chamber.

For extended temperature testing with more extreme temperature range measurements, Keysight offers the N5450B InfiniiMax extreme-temperature extension cable with the InfiniiMax Series differential probing system, which gives engineers the ability to probe signals at even wider temperature ranges. When used with the Keysight N5381A differential solder-in probe head, this solution provides engineers with the widest temperature range coverage of -55 to 150 °C, which is the maximum temperature range specified for automotive-electronics testing.

When accurate and repeatable current measurements inside the chamber are critical over wide temperature ranges, the N2820A/21A high-sensitivity current probe is the best choice, especially for precision current measurement applications. When the user-defined head is used with the N2820A/21A current probe, it provides the industry's highest sensitivity current measurement solution among oscilloscope current probes, going all the way down to 50 μ A with a maximum current range of 5 A operating over the temperature range of -55 to 150 °C.

This extreme temperature probing solution provides an ideal solution for engineers working with the semiconductor, consumer, wireless mobile devices, automotive electronics, and computer industries who need to validate and characterize their designs while operating within extreme temperature ranges.

There are different bandwidths, temperature ranges and test cycle numbers depending on which probe head/tip you select to use.

Probes and accessories	Voltage or Current?	Bandwidth	Temperature range	Test cycle numbers
N5441A differential solder-in probe head + InfiniiMax III N280xA	Single-ended or differential voltage	16 GHz	-55 to +150 °C	250+
N5381A differential solder-in probe head + InfiniiMax II 1169A	Single-ended or differential voltage	12 GHz	-55 to +150 °C	250+
E2677A differential solder-in probe head + InfiniiMax II 1169A	Single-ended or differential voltage	12 GHz	-25 to +80 °C	1000+
E2678A differential socket probe head + InfiniiMax II 1169A	Single-ended or differential voltage	12 GHz		
N5425A ZIF head + N5426A tip + InfiniiMax II 1169A	Single-ended or differential voltage	12 GHz		
N2797A single-ended active probe	Single-ended voltage	1.5 GHz	-40 to +85 °C	
N2820A current probe with user defined head and silicon jacketed hook-up cable	Single-ended current	3 MHz (zoom-out)/ 500 kHz (zoom-in)	-55 to +150 °C	

Ordering Information

- For InfiniiMax probe with extension cable + probe head, order one of these configurations below, depending on your probe bandwidth and accessory requirements.
- 1. InfiniiMax I probe: 1130A/31A/32A/34A InfiniiMax I probe amp + N5450B extension cable + E2677A solder-in head or E2678A socketed head
- 2. InfiniiMax II probe: 1168A/69A InfiniiMax II probe amp + N5450B extension cable + N5381A solder-in head or N5425A/26A ZIF head/tip or E2677A solder-in head or E2678A socketed head
- 3. InfiniiMax III/III+ probe: N2800A/01A/02A/03A InfiniiMax III probe amp or N2830A/31A/32A InfiniiMax III+ probe amp + N5450B extension cable + N5441A solder-in head
- N2797A 1.5 GHz single-ended active probe
 - For additional accessories, order the N2798A accessory kit for N2797A active probe. It comes with all the standard accessories of the N2797A.
- N2820A 3 MHz high sensitivity current probe



N2797A
Single-ended
1.5 GHz
1M Ω input R
-40 to +85°C



InfiniiMax + N5450B
extension cable + probe head
Differential & SE
1.5 GHz-16GHz
50 k Ω input R
-55 to +150°C



N2820A/21A
High-sensitivity
current probe
Current
3MHz
1.5 G Ω input R
-55 to +150°C

For more information on the extreme temperature probing solution, go to www.keysight.com/find/extreme.

To learn more about Keysight's probing solutions, go to www.keysight.com/find/probes.

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus



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Published in USA, July 31, 2014
5990-3504EN
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