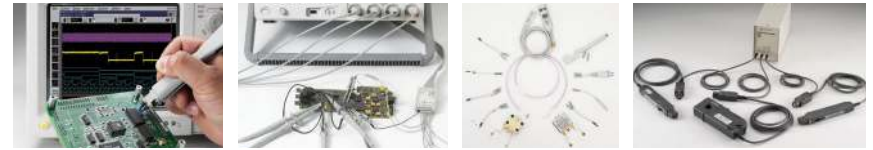


# Keysight Technologies Probes and Accessories for Keysight Oscilloscopes – Selection Guide

Reliable measurements start with the probe



## Cross-reference table

	2000 X-Series	3000 X-Series	4000 X-Series	6000 X-Series	9000 Series Infiniium	S-Series Infiniium	90000/90008A Series Infiniium
Scope bandwidth	70 - 200 MHz	100 MHz - 1 GHz	200 MHz - 1.5 GHz	1 - 6 GHz	600 MHz - 4 GHz	500 MHz - 8 GHz	2.5 - 13 GHz
Probe interface	BNC	AutoProbe Lite	AutoProbe	AutoProbe	AutoProbe	AutoProbe	AutoProbe
Standard probe	N2862B (70 MHz/100 MHz) N2863B (200 MHz)	N2862B (100 MHz) N2863B (200 MHz) N2890A (350 MHz/500 MHz/1 GHz)	N2894A (700 MHz)	N2894A (700 MHz)	N2873A	N2873A	
Passive probe 1:1	10070D	10070D, N2870A	10070D, N2870A	10070D, N2870A	N2870A, 10070D	10070D, N2870A	10070D with E2697A <sup>4</sup>
Passive probe 10:1	N2862B, N2863B	N2862B, N2863B, N2889A, N2890A	N2894A	N2894A	N2873A	N2873A	N2873A (500 MHz) with E2697A or 54006A (6 GHz)
High-voltage passive probe 100:1	10076B	10076B	10076B	10076B	10076B	10076B	10076B with E2697A <sup>4</sup>
High-voltage passive probe 1000:1	N2771B	N2771B	N2771B	N2771B	N2771B	N2771B	N2771B with E2697A <sup>4</sup>
Low Z passive probe		N2874A, N2876A	N2874A, N2876A	N2874A, N2876A	N2874A, N2876A	N2874A, N2876A	N2874A, N2876A
Active single-ended probe		N2795A, N2797A	N2795A, N2796A, N2797A	N2795A, N2796A, N2797A	N2795A/96A/97A or 1130A-1132A <sup>5</sup> with SE probe accessory	N2795A, N2796A, N2797A or 1130A-1134A <sup>5</sup> with SE probe accessory	N2796A/97A, 1157/8A, 1131/2/4 <sup>5</sup> or 1168/9A <sup>5</sup> with SE probe accessory
Active differential probe (high speed)		1141A <sup>1</sup> , 1130A <sup>5</sup> , N2750A	1141A <sup>1</sup> , 1130A <sup>5</sup> , N2750A	1141A <sup>1</sup> , 1130A/31A/32A <sup>5</sup> , N2750A/51A/52A	1130A - 1132A <sup>5</sup> , N2750A/51A/52A, 1153A	N2830A/31A/32A <sup>11</sup> , 1130A/31A/32A/34A <sup>5</sup> , N2750A/51A/52A	N2830A/31A/32A <sup>11</sup> , 1131/2/4 <sup>5</sup> or 1168/69A <sup>5</sup> with differential probe accessory
Active differential probe (high voltage)	N2791A, N2792A, N2793A, N2891A	N2790A, N2791A, N2792A, N2793A, N2891A, N2818A, N2819A	N2790A, N2791A, N2792A, N2793A, N2891A, N2818A, N2819A	N2790A, N2791A, N2792A, N2793A, N2891A, N2818A, N2819A	N2790A, N2791A, N2792A, N2793A, N2891A, N2818A, N2819A	N2790A, N2791A, N2792A, N2793A, N2891A, N2818A, N2819A	N2791A, N2792A, N2793A with E2697A <sup>4</sup>
Current probe	1146B, N2780B/81B/82B/83B <sup>3</sup>	1146B, 1147B, N2893A, N2780B/81B/82B/83B <sup>3</sup> , N2820A/21A	1146B, 1147B, N2893A, N2780B/81B/82B/83B <sup>3</sup> , N2820A/21A	1146B, 1147B, N2893A, N2780B/81B/82B/83B <sup>3</sup> , N2820A/21A	1146B, 1147B, N2893A, N2780B/81B/82B/83B <sup>3</sup> , N2820A/21A	1146B, 1147B, N2893A, N2780B/81B/82B/83B <sup>3</sup> , N2820A/21A	1146B, N2780B/81B/82B/83B <sup>3</sup> with E2697A <sup>4</sup>
Rackmount kit	N6456A	N6456A	N2763A	N2111A	N2902A	N2902A	N5470A (for 90000)
Carrying case	N6457A	N6457A	N2733B	N2733B (soft), N2112A (hard)			N5475A
Testmobile	1180CZ	1180CZ	1180CZ	1180CZ	1181BZ	1180CZ	1181BZ

## Active differential probes

Model	Attenuation	Probe bandwidth	Input dynamic range	Oscilloscope compatibility and recommendation	Features, applications and use
N2791A	10:1 or 100:1	25 MHz	Max input: ±700 V CAT II (differential or common mode)	High-impedance BNC input	For high-voltage circuits, motor control, power supply design, battery or USB powered
N2891A	100:1 or 1000:1	70 MHz	Max input: ±7,000 V CAT I (differential or common mode)	High-impedance BNC input	For high-voltage surge or power measurement
N2790A	50:1 or 500:1	100 MHz	Max input: ±1.4 kV CAT II (common mode), ±1 kV CAT II (differential)	High-impedance AutoProbe BNC	For high-voltage circuits, motor control, power supply design
1141A/1153A	1:1	200 MHz	±300 mV (1:1); ±3 V (10:1); ±30 V (100:1) with attenuation	50-Ω BNC input (1141A), 50-Ω AutoProbe input (1153A)	Surface-mount devices <sup>9</sup> Very good probe for analog applications and small voltage measurements Requires 1142A power supply
N2792A/N2818A	10:1	200 MHz	±20 V (diff), ±60 V (common)	Any oscilloscope with 50-Ω BNC input (N2792A), 50-Ω AutoProbe (N2818A)	High-speed power measurements, automotive serial buses (CAN, LIN), digital differential buses
N2793A/N2819A	10:1	800 MHz	±15 V (diff), ±30 V (common)	Any oscilloscope with 50-Ω BNC input (N2793A), 50-Ω AutoProbe (N2819A)	High-speed power measurements, automotive serial buses (CAN, LIN, FlexRay), digital differential buses
N2750A/51A/52A	10:1/2:1	1.5 GHz/3.5 GHz/6 GHz	±1 V, 2 Vpp (@2:1) / ±5 V, 10 Vpp (@10:1)	Infiniium 3000X/4000X and Infiniium 9000, 90000, 90000X/Q with N5442A	Differential, single-ended and common mode measurement with a single probe
1130A <sup>5</sup>	10:1	1.5 GHz	5 V single-ended, ±2.5 V differential	InfiniVision 5000, 6000, 7000 (except 100 MHz 6000), 8000 or 9000 (600 MHz-1 GHz)	Measure fast transitions on low-voltage differential or single-ended signals Flat frequency response over the entire bandwidth specification
1131A <sup>5</sup>	10:1	3.5 GHz	5 V single-ended, ±2.5 V differential	DSO80204B, 80304B or DSO/DSA90254A	Requires one or more probe head accessory per amplifier
1132A <sup>5</sup>	10:1	5 GHz	5 V single-ended, ±2.5 V differential	DSO80604B or DSO/DSA90404A	1168A and 1169A are not compatible with Infiniium Series
1134A <sup>5</sup>	10:1	7 GHz	5 V single-ended, ±2.5 V differential	DSO80604B or DSO/DSA90604A	
1168A <sup>5,10</sup>	3.45:1	10 GHz	3.3 V single-ended, ±1.65 V differential	DSO80804B, DSO81004B or DSO/DSA90804A, DSO90808A	
1169A <sup>5,10</sup>	3.45:1	12 GHz (13 GHz typical)	3.3 V single-ended, ±1.65 V differential	DSO80804B, DSO81004B or DSO/DSA91204A/91304A/91208A/91308A	
N2830A	5:1 or 10:1	4 GHz	5 V single-ended, ±2.5 V differential	S-Series, 90000A/X/Q/Z Series	Measure differential, single-ended and common mode with a single connection (Infiniium Mode)
N2831A	5:1 or 10:1	8 GHz	5 V single-ended, ±2.5 V differential	S-Series, 90000A/X/Q/Z Series	Requires one or more probe head accessories per amplifier (See 5990-5653EN for more details)
N2832A	5:1 or 10:1	13 GHz	5 V single-ended, ±2.5 V differential	S-Series, 90000A/X/Q/Z Series	Not compatible with 9000 and Infiniium Series

Notes: 1. Requires 1142A power supply. 3. Requires N2779A power supply. 4. Includes one 10073D passive probe. 5. Order one or more Infiniium probe heads or connectivity kits per amplifier. a. E2699A Infiniium connectivity kit for differential/single-ended measurements. b. E2698A Infiniium connectivity kit for single-ended measurements. c. E2675A Infiniium differential browser probe head and accessories. d. E2676A Infiniium single-ended browser probe head and accessories. e. E2677A Infiniium differential solder-in probe head and accessories. f. E2678A Infiniium single-ended/differential socketed probe head and accessories. g. E2679A Infiniium single-ended solder-in probe head and accessories. h. E2695A Differential SMA probe head. 6. Order one or more Infiniium II probe heads or connectivity kits per amplifier. a. N5380B Infiniium II 12 GHz differential SMA adapter. b. N5381A Infiniium II differential solder-in probe head and accessories. c. N5382A Infiniium II 12 GHz differential browser. d. N5425A Infiniium I and II 12 GHz differential solder-in ZIF probe head. Requires N5426A or N5451A. e. N5426A Infiniium I and II 12 GHz ZIF tip. f. N5451A Infiniium I and II 9 GHz/5 GHz Long wire ZIF tip. 7. Requires a 50-ohm feedthrough. 8. 1156A and 1130A are not compatible with 100 MHz 6000 Series. 9. Order one or more probe heads. See above footnotes for available Infiniium probe heads and accessories. 10. Not compatible with 2000X, 3000X, 5000, 6000, or 7000 Series. 11. Order one or more Infiniium III/III+ probe heads and accessories. See 5990-5653EN for more details.

## Single-ended active probes

Model	Attenuation	Probe bandwidth	Input dynamic range	Oscilloscope compatibility and recommendation	Features, applications and use
1144A <sup>1</sup>	10:1	800 MHz	0 to ±7 Vp-p	50-Ω BNC input	Requires 1142A power supply
1145A <sup>1</sup>	10:1	750 MHz, 2 channels	0 to ±6 Vp-p	50-Ω BNC input	General purpose dual channel probe, connects directly to wedge probe adapters. Requires 1142A power supply.
N2795A	10:1	1 GHz	0 to ±8 Vp-p	50-Ω AutoProbe interface input, recommended for all InfiniiVision (except for 2000 X, 6000 100 MHz), 9000 1 GHz or below	1-MΩ input impedance, built-in headlight, AutoProbe interface, for high-speed, general-purpose probing
N2796A	10:1	2 GHz	0 to ±8 Vp-p	50-Ω AutoProbe interface input, recommended for all InfiniiVision (except for 2000 X, 6000 100 MHz), 9000, 90000 2.5 GHz or below	
N2797A	10:1	1.5 GHz	0 to ±8 Vp-p	50-Ω AutoProbe interface input, compatible with 3000X, 4000X, 9000A, 9000H, 90000	For extreme temperature environmental chamber testing at -40 to +85 °C
1157A	10:1	2.5 GHz	0 to ±2.5 Vp-p <sup>2</sup>	50-Ω AutoProbe interface input, recommended for Infinium 1.5 GHz - 2.5 GHz models	Measuring fast transitions on low-voltage signals
1158A	10:1	4 GHz	0 to ±2.5 Vp-p <sup>2</sup>	50-Ω AutoProbe interface input, recommended for Infinium 3 GHz - 4 GHz models	Light loading and small size Comes with properly damped accessories

Note: 1. Requires a 1142A power supply. 2. For waveforms with edges > 3 nsec, dynamic range is > 12 Vp-p.

## Passive probes

Model	Cable length	Attenuation	Bandwidth	Compensates oscilloscope input	Max input voltage	Oscilloscope compatibility and recommendation	Features, applications and use
10070D	1.5 m	1:1	20 MHz	High Z	400 Vpk	1000, 3000, 2000X, 3000X, 5000, 6000, 7000, 8000, 54600 Series	For low-level signal probing
N2870A	1.3 m	1:1	35 MHz	1 MΩ	55 V CAT I	1000, 3000, 5000, 6000, 7000, 8000, 9000, and 54600 Series	For fine pitch component probing. Replaceable probe tip.
N2889A	1.3 m	1:1/10:1	350 MHz	1 MΩ, 5-30 pF	300 V CAT II	1000, 3000, 2000 X, 3000 X, 5000, 6000, 7000, 8000, 9000	Low cost probe with switchable 1:1/10:1 attenuation factor
10073D	1.5 m	10:1	500 MHz	1 MΩ, 6-15 pF	400 Vpk	5000 (500 MHz), 6000 Series (300 MHz - 1 GHz), 7000, Series, 5464x, 54830, and 8000 Series	One per scope channel shipped with 5000 500 MHz, 6000/7000 300 MHz - 1 GHz 90000 Series requires E2697A adapter
10074D	1.5 m	10:1	150 MHz	1 MΩ, 9-17 pF	400 Vpk	6000 Series (100 MHz), 5462x	One per scope channel shipped with 6000/7000 100 MHz
N2862B	1.2 m	10:1	150 MHz	1 MΩ, 5-30 pF	300 Vpk CAT II	1000, 3000, 2000X, 3000X Series	Low cost passive probe compensating wide range of scope inputs (5-30 pF)
N2863B	1.2 m	10:1	300 MHz	1 MΩ, 5-30 pF	300 Vpk CAT II	1000, 3000, 2000X, 3000X 5000 Series (100, 300 MHz)	Low cost passive probe compensating wide range of scope inputs (5-30 pF)
N2871A	1.3 m	10:1	200 MHz	1 MΩ, 10-25 pF	300 V CAT II	1000, 3000, 5000, 6000, 7000, 8000, 9000	For fine pitch component probing. Replaceable probe tip.
N2872A	1.3 m	10:1	350 MHz	1 MΩ, 10-25 pF	300 V CAT II	1000, 3000, 5000, 6000, 7000, 8000, 9000	For fine pitch component probing. Replaceable probe tip.
N2873A	1.3 m	10:1	500 MHz	1 MΩ, 10-25 pF	300 V CAT II	1000, 3000, 5000, 6000, 7000, 8000, 9000	For fine pitch component probing. Replaceable probe tip.
N2894A	1.3 m	10:1	700 MHz	1 MΩ, 10-25 pF	300 V CAT II	4000X	For fine pitch component probing. Replaceable probe tip, 700 MHz bandwidth when used with 4000X 1/1.5 GHz scope
1165A	1.5 m	10:1	600 MHz	1 MΩ, 12-14 pF	300 V CAT II	54830, 6000, 7000, 8000, 9000 Series	For fine pitch component probing. Replaceable probe tip.
N2890A	1.3 m	10:1	500 MHz	1 MΩ, 5-30 pF	300 V CAT II	1000, 3000, 2000 X, 3000 X, 5000, 6000, 7000, 8000, 9000	Our lowest cost 500-MHz passive probe
N2874A	1.3 m	10:1	1.5 GHz	50 Ω	8.5 V CAT I	5000, 6000, 7000 and all Infinium Series	For fine pitch component probing. Replaceable probe tip.
N2875A	1.3 m	20:1	500 MHz	1 MΩ, 7-20 pF	300 V CAT II	1000, 3000, 5000, 6000, 7000, 8000, 9000	For fine pitch component probing. Replaceable probe tip.
N2876A	1.3 m	100:1	1.5 GHz	50 Ω	21 V CAT I	5000, 6000, 7000, and all Infinium Series	For fine pitch component probing. Replaceable probe tip.
54006A	1.2 m	10:1 (500 Ω) or 20:1 (1 kΩ)	6 GHz	50 Ω	20 Vpk	90000, 5484x, 5485x	For probing high-frequency, low-impedance circuit
10076B	1.5 m	100:1	250 MHz	1 MΩ, 7-20 pF	4 kV CAT I, 1 kV CAT II	1000, 3000, 2000X, 3000X, 5000, 6000, 7000, 8000, 9000 Series	For probing high-amplitude signal up to 4 kV
N2771B	2 m	1000:1	50 MHz	1 MΩ, 6-20 pF	DC: 15 kV, AC: 10 kV, Peak 30 kV	1000, 3000, 2000X, 3000X, 5000, 6000, 7000, 8000, 9000 Series	For probing high-amplitude signal up to 30 kV peak

## Current probes

Model	Probe type	Probe bandwidth	Max input current	Oscilloscope compatibility	Features, applications and use
N2820A	High-sensitivity AC/DC current, 50 uA - 5 A (with supplied accessories)	2-channel, zoom-in ch: 500 kHz and zoom-out ch: 3 MHz	Up to 5 Arms (with N2822A 20 mohm sensor head)	3000X, 4000X, 9000A and 9000H only	Power/current consumption test of battery-powered devices and ICs, wide dynamic range (85 dB) with 2 channel. Not compatible with 90000 Series
N2821A	High-sensitivity AC/DC current, 50 uA - 5 A (with supplied accessories)	1-channel, zoom-in ch: 500 kHz or zoom-out ch: 3 MHz	Up to 5 Arms (with N2822A 20 mohm sensor head)	3000X, 4000X, 9000A and 9000H only	Power/current consumption test of battery-powered devices and ICs, standard dynamic range (60 dB) with 1 channel. Not compatible with 90000 Series
1146B	AC/DC current, 0.1 V/A (0.1 A-10 A peak) or 0.01 V/A (1-100 A peak)	100 kHz	100 Arms	High-impedance BNC input	AC line, motors, automotive current measurement. Only good at measuring a ~10 μS rise time current signal. Requires 9-Vdc battery.
1147B	AC/DC current, 0.1 V/A	50 MHz	15 A peak continuous, 30 A peak non-continuous	High-impedance AutoProbe input	Motors, switching power, magnetic device current. Not compatible with 90000 Series.
N2893A	AC/DC current, 0.1 V/A	100 MHz	15 A peak continuous, 30 A peak non-continuous	High-impedance AutoProbe input	Motor, switching power supplies, magnetic device current measurements, Not compatible with 90000 Series
N2780B <sup>2</sup>	AC/DC current, 0.01 V/A	2 MHz	500 Arms continuous, 700 A peak DC + AC non-continuous	High-impedance BNC input	Motors, switching power, magnetic device current measurements Requires N2779A power supply
N2781B <sup>2</sup>	AC/DC current, 0.01 V/A	10 MHz	150 Arms continuous, 300 A peak DC + AC non-continuous	High-impedance BNC input	Motors, switching power, magnetic device current measurements Requires N2779A power supply
N2782B <sup>2</sup>	AC/DC current, 0.1 V/A	50 MHz	30 Arms continuous, 50 A peak DC + AC non-continuous	High-impedance BNC input	Switching power, amplifiers, magnetic device Requires N2779A power supply
N2783B <sup>2</sup>	AC/DC current, 0.1 V/A	100 MHz	30 Arms continuous, 50 A peak DC + AC non-continuous	High-impedance BNC input	Motors, switching power, magnetic device, low current measurement Requires N2779A power supply

Note: 1. 1142A probe control and power module for 1141A, 1144A and 1145A. 2. Requires a N2779A 3-channel current probe power supply for N2780B, N2781B, N2782B, N2783B, and N2774A (discontinued).

For complete application and product information, visit: [www.keysight.com/find/scope\\_probes](http://www.keysight.com/find/scope_probes)



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