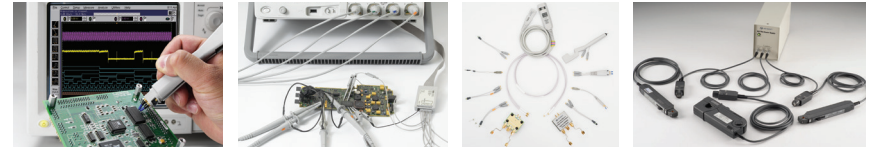


Keysight Probes and Accessories for Keysight Oscilloscopes – Technical Overview

Reliable measurements start with the probe

Cross-reference table



	1000 X-Series	2000 X-Series	3000T X-Series	4000 X-Series	6000 X-Series	Infiniium S-Series	Infiniium MXR-Series
Scope bandwidth	50 to 100 MHz	70 to 200 MHz	100 MHz to 1 GHz	200 MHz to 1.5 GHz	1 to 6 GHz	500 MHz to 8 GHz	500 MHz to 6 GHz
Probe interface	BNC	BNC	AutoProbe Lite	AutoProbe	AutoProbe	AutoProbe	AutoProbe
Standard probe	N2140A (200 MHz), N2142A (75 MHz)	N2841A (70 MHz/100 MHz), N2842A (200 MHz)	N2843A (500 MHz)	N2894A (700 MHz)	N2894A (700 MHz)	N2873A (500 MHz)	N2873A (500 MHz)
Passive probe 1:1	N2140A, N2142A	10070D	10070D, N2870A	10070D, N2870A	10070D, N2870A	10070D, N2870A	10070D, N2870A
Passive probe 10:1	N2140A, N2142A	N2841A, N2842A	N2841A, N2842A, N2889A, N2843A	N2894A	N2894A	N2873A	N2873A
High-voltage passive probe 100:1	10076C	10076C	10076C	10076C	10076C	10076C	10076C
Low Z passive probe			N2874A, N2876A	N2874A, N2876A	N2874A, N2876A	N2874A, N2876A	N2874A, N2876A
Active single-ended probe			N2795A, N2797A	N2795A, N2796A, N2797A, N7020A	N2795A, N2796A, N2797A	N2795A, N2796A, N2797A or 1130B to 1134B ³ with SE probe accessory, N7020A	N2795A, N2796A, N2797A or 1130A to 1134A ³ with SE probe accessory, N7020A
Active differential probe (high speed)			1130B ² , N2750A	1130B ² , N2750A	1130B/31B/32B ³ , N2750A/51A/52A	N2830A/31A/32A ² , 1130B/31B/32B/34B ³ , N2750A/51A/52A	N2830A/31A/32A ² , 1130B/31B/32B/34B ³ , N2750A/51A/52A
Active differential probe (high voltage)	N2791A, N2893A	N2791A, N2792A, N2891A	N2790A/91A, N2804A/05A, N2891A, N2818A/19A, DP0001A	N2790A/91A, N2804A/05A, N2891A, N2818A/19A, DP0001A	N2790A/91A, N2804A/05A, N2891A, N2818A/19A, DP0001A	N2790A/91A, N2804A/05A, N2891A, N2818A/19A, DP0001A	N2790A/91A, N2804A/05A, N2891A, N2818A/19A, DP0001A
Current probe	1146B	1146B, N2780B/81B/82B/83B ¹	1146B, 1147B, N2893A, N2780B/81B/82B/83B ¹ , N2820A/21A, N7026A	1146B, 1147B, N2893A, N2780B/81B/82B/83B ¹ , N2820A/21A, N7026A	1146B, 1147B, N2893A, N2780B/81B/82B/83B ¹ , N2820A/21A, N7026A	1146B, 1147B, N2893A, N2780B/81B/82B/83B ¹ , N2820A/21A, N7026A	1146B, 1147B, N2893A, N2780B/81B/82B/83B ¹ , N2820A/21A
Rackmount kit	N2133A	N6456A	N6456A	N2763A	N2111A	N2902A	MXR2RACK
Carrying case	N2738A	N6457A	N6457A	N2733B	N2733B (soft), N2112A (hard)		3F2002-1910C (sold by CaseCruzer)
Testmobile	1180CZ	1180CZ	1180CZ	1180CZ	1180CZ	1180CZ	1180CZ

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
N2804A	100:1	300 MHz	± 300 V differential or ± 300 V CAT II common	50 Ω AutoProbe interface	For high speed power measurements
N2805A	50:1	200 MHz	± 100 V differential or ± 200 V CAT II common	50 Ω AutoProbe interface	For high speed power measurements, or when extended cable length is required (5 m)
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
DP0001A	50:1, 100:1, 250:1, 500:1	400 MHz	± 2000 V (diff), ± 2000 Vpk (common)	InfiniiVision 3000X, 4000X, 6000A and Infiniium MXR, S, 9000A and the high-end models including 90000X, V, Z, UXR <=33 GHz (with N5442A adapter)	For high voltage, high speed power measurements including testing WBG power devices, power converters or motor drives
N2750A/ 51A/52A	10:1/2:1	1.5 GHz/3.5 GHz/6 GHz	± 1 V, 2 Vpp (at 2:1) / ± 5 V, 10 Vpp (at 10:1)	InfiniiVision 3000X/4000X/6000X and Infiniium MXR, S, 9000, 90000, 90000X/Q with N5442A	Differential, single-ended and common mode measurement with a single probe
1130B ⁵	10:1	1.5 GHz	5 V single-ended, ± 2.5 V differential	InfiniiVision 5000, 6000, 7000 (except 100 MHz 6000), 3000X/4000X/6000X, Infiniium MXR, S, 9000 and 90000 Series	- Measure fast transitions on low-voltage differential or single-ended signals - Flat frequency response over the entire bandwidth specification - Requires one or more probe head accessory per amplifier - 1168B and 1169B are not compatible with InfiniiVision Series
1131B ⁵	10:1	3.5 GHz	5 V single-ended, ± 2.5 V differential	InfiniiVision 6000X, Infiniium MXR, S, 9000 Series	
1132B ⁵	10:1	5 GHz	5 V single-ended, ± 2.5 V differential	InfiniiVision 6000X, Infiniium MXR, S, 9000 Series	
1134B ⁵	10:1	7 GHz	5 V single-ended, ± 2.5 V differential	InfiniiVision 6000X, Infiniium MXR, S, 9000 Series	
1168B ^{4,6}	3.45:1	10 GHz	3.3 V single-ended, ± 1.65 V differential	Infiniium MXR, 90000A Series	
1169B ^{4,6}	3.45:1	12 GHz (13 GHz typical)	3.3 V single-ended, ± 1.65 V differential	Infiniium MXR, 90000A Series	
N2830A	5:1 or 10:1	4 GHz	5 V single-ended, ± 2.5 V differential	Infiniium MXR-Series, 90000A Series	- Measure differential, single-ended and common mode with a single connection (InfiniiMode)
N2831A	5:1 or 10:1	8 GHz	5 V single-ended, ± 2.5 V differential	Infiniium MXR-Series, 90000A 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	Infiniium MXR-Series, 90000A Series	- Not compatible with 9000 and InfiniiVision Series

- Requires N2799A power supply.
- Includes one 10073D passive probe.
- Order one or more InfiniiMax probe heads or connectivity kits per amplifier.
 - E2669B InfiniiMax connectivity kit for differential/single-ended measurements
 - E2668B InfiniiMax connectivity kit for single-ended measurements
 - E2675B InfiniiMax differential browser probe head and accessories
 - E2676B InfiniiMax single-ended browser probe head and accessories
- Order one or more InfiniiMax II probe heads or connectivity kits per amplifier.
 - N5380B InfiniiMax II 12 GHz differential SMA adapter
 - N5381B InfiniiMax II differential solder-in probe head and accessories
- Order one or more probe heads. See above footnotes for available InfiniiMax probe heads and accessories.
- Not compatible with 1000X, 2000X, 3000X, 5000, 6000, or 7000 Series.
- Order one or more InfiniiMax 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
N2795A	10:1	1 GHz	0 to ± 8 Vp-p	50-Ω AutoProbe interface input, recommended for all InfiniiVision (except for 1000X, 2000X, 6000 100 MHz), Infiniium 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 1000X, 2000X, 6000 100 MHz), and Infiniium scopes or below	1-MΩ input impedance, built-in headlight, AutoProbe interface, for high-speed, general-purpose probing
N2797A	10:1	1.5 GHz	0 to ± 8 Vp-p	50-Ω AutoProbe interface input, compatible with 3000X, 4000X, 6000X, and Infiniium scopes	For extreme temperature environmental chamber testing at -40 to +85 °C
N7020A	1:1	2 GHz	0 to ± 850 mV	50-Ω AutoProbe interface input, compatible with InfiniiVision 3000X/T, 4000X, 6000X and Infiniium 9000, S, MXR-Series	

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	1 MΩ	400 Vpk	InfiniiVision and Infiniium 1 Mohm BNC input	For low-level signal probing
N2870A	1.3 m	1:1	35 MHz	1 MΩ	55 V CAT I	InfiniiVision and Infiniium 1 Mohm BNC input	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	InfiniiVision and Infiniium 1 Mohm BNC input	Low cost probe with switchable 1:1/10:1 attenuation factor
N2142A	1.2 m	1:1/10:1	75 MHz	1 MΩ, 15-30 pF	300 V CAT II	1000X	Low cost probe with switchable 1:1/10:1 attenuation factor
N2140A	1.2 m	1:1/10:1	200 MHz	1 MΩ, 15-30 pF	300 V CAT II	1000X	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	InfiniiVision and Infiniium 1 Mohm BNC input	One per scope channel shipped with 5000 500 MHz, 6000/7000 300 MHz to 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/ N2841A	1.2 m	10:1	150 MHz	1 MΩ, 5-30 pF	300 Vpk CAT II	1000, 1000X, 2000X, 3000X Series	Low cost passive probe compensating wide range of scope inputs (5-30 pF)
N2863B/ N2842A	1.2 m	10:1	300 MHz	1 MΩ, 5-30 pF	300 Vpk CAT II	1000, 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	InfiniiVision and Infiniium 1 Mohm BNC input	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	InfiniiVision and Infiniium 1 Mohm BNC input	For fine pitch component probing. Replaceable probe tip.
N7007A	2 m	10:1	400 MHz	1 MΩ, 8-16 pF	1 kV CAT II, 600V CAT III	InfiniiVision and Infiniium 1 Mohm BNC input	For extreme temperature chamber testing (-40 to +85 °C)
N2873A	1.3 m	10:1	500 MHz	1 MΩ, 10-25 pF	300 V CAT II	InfiniiVision and Infiniium 1 Mohm BNC input	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, 6000X	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 Series	For fine pitch component probing. Replaceable probe tip.
N2890A/ N2843A	1.3 m	10:1	500 MHz	1 MΩ, 5-30 pF	300 V CAT II	1000, 2000X, 3000X, 4000X, 5000X, 5000, 6000, 7000, 8000, 9000, and S-Series	Our lowest cost 500-MHz passive probe
N2874A	1.3 m	10:1	1.5 GHz	50 Ω	8.5 V CAT I	InfiniiVision 3000X, 4000X, 6000X and all Infiniium 50 Ω BNC input	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	InfiniiVision and Infiniium 1 Mohm BNC input	For fine pitch component probing. Replaceable probe tip.
N2876A	1.3 m	100:1	1.5 GHz	50 Ω	21 V CAT I	InfiniiVision 3000X, 4000X, 6000X and all Infiniium 50 Ω BNC input	For fine pitch component probing. Replaceable probe tip.
10076C	1.5 m	100:1	500 MHz	1 MΩ, 7-20 pF	4 kV CAT I, 1 kV CAT II	InfiniiVision and Infiniium 1 Mohm BNC input	For probing high-amplitude signal up to 4 kV

Current probes

Model	Probe type	Probe bandwidth	Max input current	Oscilloscope compatibility	Features, applications and use
N2820A	High-sensitivity AC/DC current, 50 μA – 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 mΩ sensor head)	3000X, 4000X, 6000X, MXR, S, 9000 only	Power/current consumption test of battery-powered devices and ICs, wide dynamic range (85 dB) with 2 channel. Not compatible with 90000 Series or higher-end Infiniium models.
N2821A	High-sensitivity AC/DC current, 50 μA – 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 mΩ sensor head)	3000X, 4000X, 6000X, MXR, S, 9000 only	Power/current consumption test of battery-powered devices and ICs, standard dynamic range (60 dB) with 1 channel. Not compatible with 90000 Series or higher-end Infiniium models.
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 ¹	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 ¹	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 ¹	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 ¹	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.
N7026A	AC/DC current, 1 V/A or 0.2 V/A	150 MHz	30 Arms continuous, 40 A peak DC + AC non-continuous (with an external adapter)	High-impedance BNC input	Motors, switching power, magnetic device, 1mA/div sensitivity measurement

1. 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/probes

