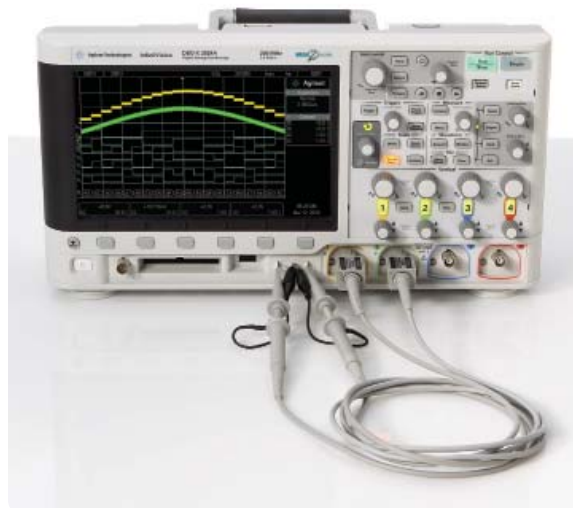


# N2862B/N2863B/N2889A/N2890A Passive Probes

Data Sheet



The Agilent N2862B, N2863B, N2889A and N2890A low-cost, general-purpose passive probes provide up to 500 MHz bandwidth and feature a high input resistance of 10 M $\Omega$  for low probe loading. These probes provide a 10:1 attenuation ratio except for the N2889A which provides a switch in the probe handle for switching the attenuation ratio between 1:1 and 10:1.

The probes are compatible with Agilent InfiniiVision and Infiniium Series oscilloscopes with 1 M $\Omega$  input.

## Characteristics

Probe characteristics	N2862B	N2863B	N2889A	N2890A
Bandwidth (-3 dB)	150 MHz	300 MHz	350MHz (@10:1), 10MHz (@1:1)	500 MHz
Rise time (10% - 90%)	2.33 nsec	1.16 nsec	1 nsec (@10:1), 35 nsec (@1:1)	700 psec
Attenuation ratio	10:1	10:1	1:1/10:1 (switchable)	10:1
Input resistance (when terminated into 1 M $\Omega$ )	10 M $\Omega$	10 M $\Omega$	10 M $\Omega$ (@10:1), 1 M $\Omega$ (@1:1)	10 M $\Omega$
Maximum input voltage	300 V RMS (or >400Vpk) CAT I and CAT II		300 VRMS (or >400Vpk) CAT I/II (@10:1), 150 V RMS CAT I/II (@1:1)	300 V RMS (or >400Vpk) CAT I and CAT II
Scope compensation range	5-30 pF	5-30 pF	5-30 pF (@10:1)	5-30 pF
Probe ID	Yes	Yes	No	Yes
Cable length	1.2 m	1.2 m	1.3 m	1.3 m
Safety	Conformance to IEC-61010-031:2002			
Operating Temperature	0 to 50 °C, 80% RH			
Storage Temperature	0 to 50 °C, 80% RH			



**Agilent Technologies**

# Compensation Adjustments

These probes can be adjusted for low-frequency and high-frequency compensation. For the best measurement results you should compensate your probe to match its characteristics to the oscilloscope. A poorly compensated probe can introduce measurement errors. Low-frequency compensation should be performed before performing high-frequency compensation.

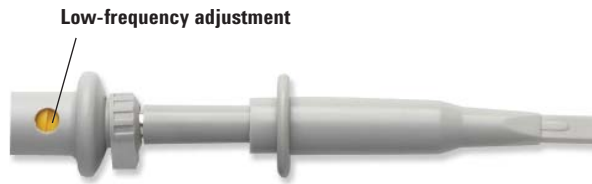


Figure 1. Low-frequency compensation adjustment.

## Low-frequency compensation

1. Connect the probe from the appropriate oscilloscope channel to the 1-kHz square wave source.
2. Press Autoscale. Adjust the oscilloscope to display two to three cycles of the waveform over two to six vertical divisions.
3. Set the low-frequency compensation adjustment on the probe for the flattest pulse possible (see Figure 2).

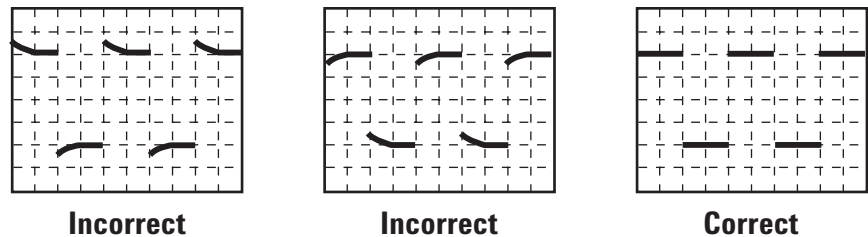


Figure 2.

## High-frequency compensation

1. Using the BNC adapter, connect the probe to a square wave generator operating between 10-kHz and 1-MHz, and terminated into 50-Ω.
2. Press Autoscale. Adjust the oscilloscope to display one cycle of the waveform over two to six vertical divisions.
3. Set the high-frequency compensation adjustment on the probe for the flattest, most square, and most horizontal pulse possible (see Figure 4).

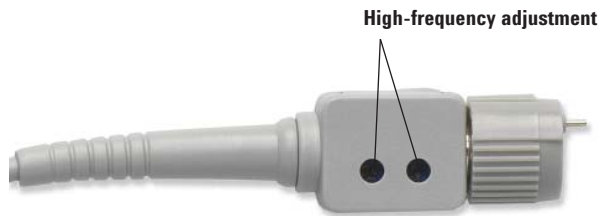


Figure 3. High-frequency compensation adjustment.

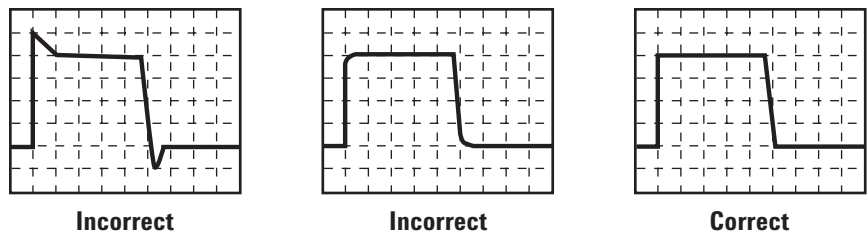


Figure 4.

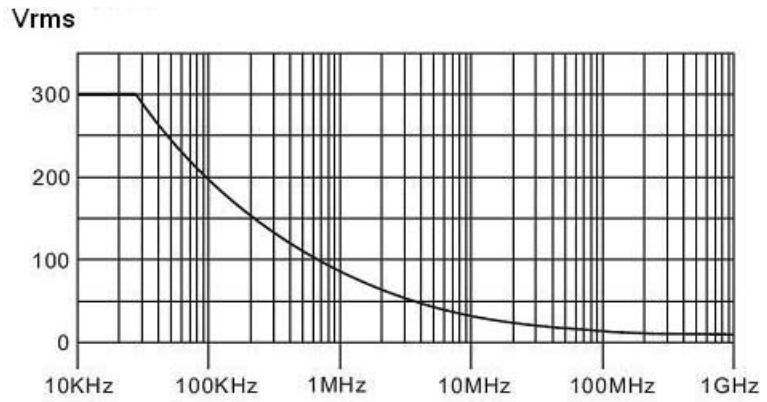
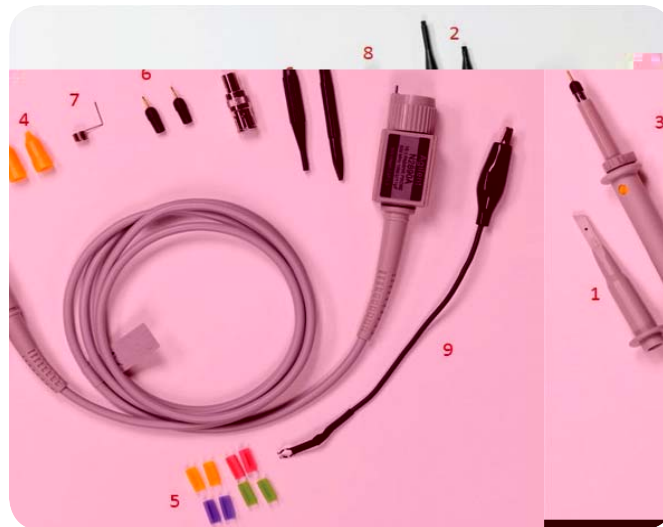


Figure 5. N2862B/63B/89A/90A voltage derating curve



### Standard Accessories

Item	Description	Quantity
1	Retractable hook	1
2	Adjustment tools	2 (with N2889A/90A) 1 (with N2862B/63B)
3	Insulating cap	1
4	IC insulating cap	1
5	Identification tags (green,yellow, purple and pink)	2 each
6	Probe tip	2
7	Ground spring	1
8	BNC adapter	1
9	Ground lead (black 12 cm)	1

### Replacement accessories

- 0960-2900 Retractable hook tips
- 0960-2922 PCB socket adapter
- 0960-2923 Dual-lead adapter



### Agilent Email Updates

[www.agilent.com/find/emailupdates](http://www.agilent.com/find/emailupdates)

Get the latest information on the products and applications you select.



[www.lxistandard.org](http://www.lxistandard.org)

LAN eXtensions for Instruments puts the power of Ethernet and the Web inside your test systems. Agilent is a founding member of the LXI consortium.

### Agilent Channel Partners

[www.agilent.com/find/channelpartners](http://www.agilent.com/find/channelpartners)

Get the best of both worlds: Agilent's measurement expertise and product breadth, combined with channel partner convenience.



Agilent Advantage Services is committed to your success throughout your equipment's lifetime. We share measurement and service expertise to help you create the products that change our world. To keep you competitive, we continually invest in tools and processes that speed up calibration and repair, reduce your cost of ownership, and move us ahead of your development curve.

[www.agilent.com/find/advantageservices](http://www.agilent.com/find/advantageservices)



[www.agilent.com/quality](http://www.agilent.com/quality)

[www.agilent.com](http://www.agilent.com)  
[www.agilent.com/find/probes](http://www.agilent.com/find/probes)

For more information on Agilent Technologies' products, applications or services, please contact your local Agilent office. The complete list is available at:

[www.agilent.com/find/contactus](http://www.agilent.com/find/contactus)

#### Americas

Canada	(877) 894 4414
Brazil	(11) 4197 3500
Mexico	01800 5064 800
United States	(800) 829 4444

#### Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Other AP Countries	(65) 375 8100

#### Europe & Middle East

Belgium	32 (0) 2 404 93 40
Denmark	45 70 13 15 15
Finland	358 (0) 10 855 2100
France	0825 010 700*
	*0.125 €/minute
Germany	49 (0) 7031 464 6333
Ireland	1890 924 204
Israel	972-3-9288-504/544
Italy	39 02 92 60 8484
Netherlands	31 (0) 20 547 2111
Spain	34 (91) 631 3300
Sweden	0200-88 22 55
United Kingdom	44 (0) 118 9276201

*For other unlisted Countries:*

[www.agilent.com/find/contactus](http://www.agilent.com/find/contactus)

Revised: October 14, 2010

Product specifications and descriptions in this document subject to change without notice.

© Agilent Technologies, Inc. 2011  
Printed in USA, February 1, 2011  
5990-7111EN



Agilent Technologies