

Agilent 86117A Dual 50 GHz Electrical Module Agilent 86117B Dual 65 GHz Electrical Module

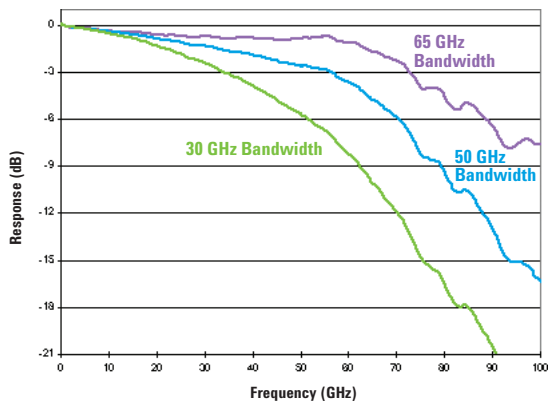
Wide Bandwidth Electrical Modules
for Testing 40 Gb/s Devices

The Agilent 86117A/B Infiniium DCA plug-in modules provide designers and manufacturers with a cost-effective solution for testing 40 Gb/s electrical signals.

High-speed digital designs are pushing the limits of today's test equipment. With the ongoing development of 40 Gb/s systems,

designers need to measure ultra-fast electrical edge speeds. In an oscilloscope, significant bandwidth and pulse fidelity is required to accurately display and measure the waveform under test. Agilent Technologies has developed two wide-bandwidth test solutions for these demanding applications.

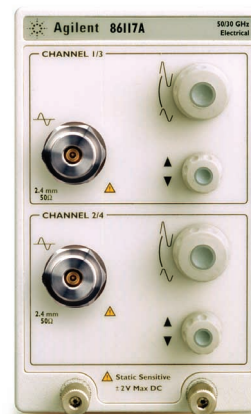
The Agilent 86117A/B are dual electrical channel plug-in modules that integrate with the 86100A/B Infiniium Digital Communications Analyzer (DCA). The 86117A has 50 and 30 GHz bandwidth



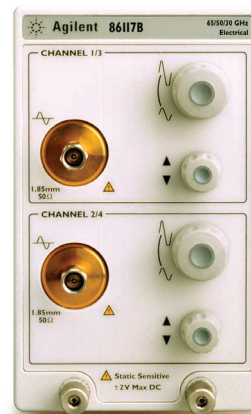
The 86117B frequency response at three different bandwidths.

settings available on each electrical channel, with 2.4 mm male electrical connectors. The 86117B has 65, 50, and 30 GHz bandwidth settings available on each electrical channel, with 1.85 mm male electrical connectors. The 86117A with its 50 GHz bandwidth provides a risetime of 7 ps, and the 86117B with its 65 GHz bandwidth provides a faster risetime of 5.3 ps. The frequency response of both modules has been carefully designed in order to provide the best time domain response possible. Minimal aberrations in the pulse response allow the design engineer to see eye diagram measurements indicative of the device-under-test, not the test equipment.

The 86117A/B modules provide vertical scale and offset adjustment knobs for easy, intuitive operation, and two measurement channels with user selectable bandwidths. The highest bandwidths provide high fidelity display and measurement of very high-speed waveforms. The lower bandwidth modes provide



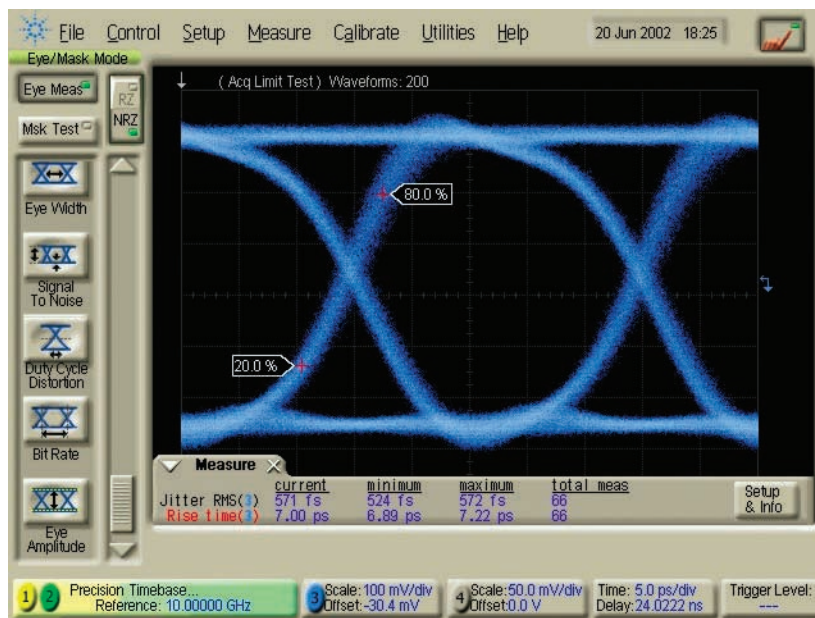
86117A¹
Bandwidth 50 GHz/30 GHz
Electrical risetime²
 7.0 ps (50 GHz)
 11.7 ps (30 GHz)
Electrical noise³
 Specification/characteristic
 < 0.7 mV / 0.4 mV (30 GHz)
 < 1.0 mV / 0.6 mV (50 GHz)



86117B¹
Bandwidth 65/50/30 GHz
Electrical risetime²
 5.3 ps (65 GHz)
 7.0 ps (50 GHz)
 11.7 ps (30 GHz)
Electrical noise³
 Specification/characteristic
 < 0.7 mV / 0.4 mV (30 GHz)
 < 1.0 mV / 0.6 mV (50 GHz)
 < 1.5 mV / 1.0 mV (65 GHz)



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Typical NRZ eye diagram.

excellent oscilloscope noise performance for accurate measurement of low-level signals.

The 86100A/B Infiniium DCA has a large family of plug-in modules designed for a broad range of data rates for optical and electrical

waveforms. The 86100B can hold up to two modules for a total of four measurement channels. The 86107A precision timebase reference module can be used for applications requiring extremely low jitter measurements.

1. Specifications describe warranted performance over the temperature range +10°C to +40°C unless otherwise noted. Characteristics provide useful, non-warranted information about the functions and performance of the instrument. Characteristics are printed in italics.
2. Electrical risetime is a calculated value; risetime = 0.35/bandwidth
3. The noise specification is over the full temperature range of +10°C to +40°C. The characteristic noise represents typical module performance.

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