

Agilent 86118A Dual 70+ GHz Electrical Remote Head

Precision high-speed waveform analysis in a compact lightweight package

When measuring very high-speed electrical waveforms several elements are essential to achieving accurate results including:

- * A wide channel bandwidth
- * A well behaved frequency response
- * Short connection lengths to test devices with minimal adapters

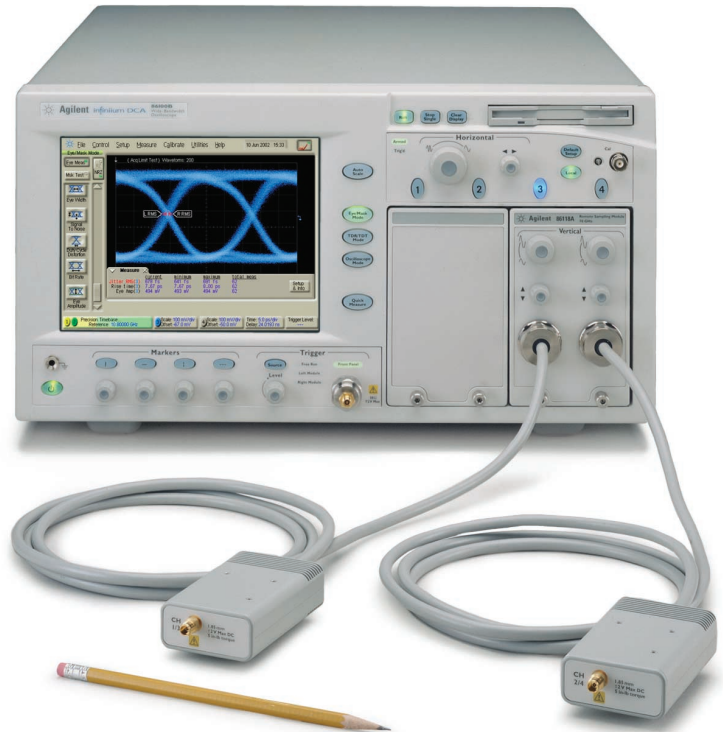
The Agilent 86118A module addresses each of these critical issues. With over 70 GHz of electrical bandwidth, the 86118A provides the fastest channel performance available today to minimize

attenuation of the signal spectrum and maintain fast edge speeds. The channel frequency response, both amplitude and phase, have been carefully designed to provide a wide bandwidth and high-fidelity time domain response.

With over 70 GHz of bandwidth, and the size of a thick credit card, the 86118A provides fast, accurate electrical waveform analysis.

To eliminate signal loss, particularly the high frequency components of the signal, cable lengths between the device under test and the oscilloscope channel must be as short as physically possible. Even a few centimeters of cabling and/or adapters can create a noticeable change in waveform shapes.

The 86118A is a unique module for the Agilent 86100A/B Infiniium digital communications analyzer



Small lightweight housing
25mm H x 53.9mm W x 89.8mm D (1" x 2.1" x 3.5")

because the sampling electronics are located in a small, lightweight housing that can be placed far from the mainframe. The 86118A sampler housings are approximately the size of a 2.5 centimeter thick credit card and are connected to their mainframe plug-in through a pair of 2 meter interface cables. Thus it is easy to make connections to probe stations or to the device under test directly with very short cables or no cabling at all. Two sampler housings are available with the 86118A, allowing independent placement of the measurement connections. The 86118A is compatible with all versions of the 86100 mainframe.



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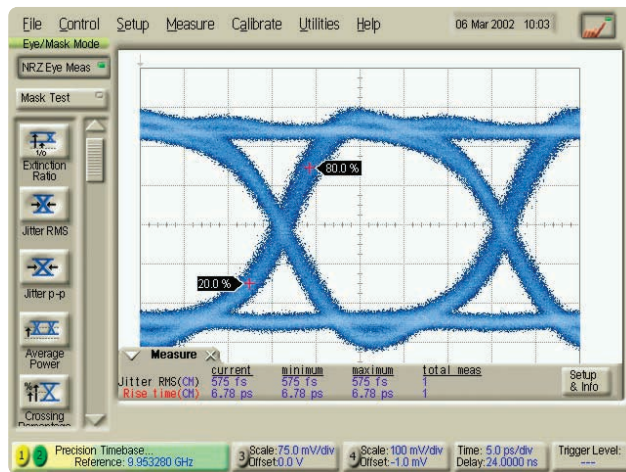


Figure 1: Measuring the same signal with a direct connection to the test device

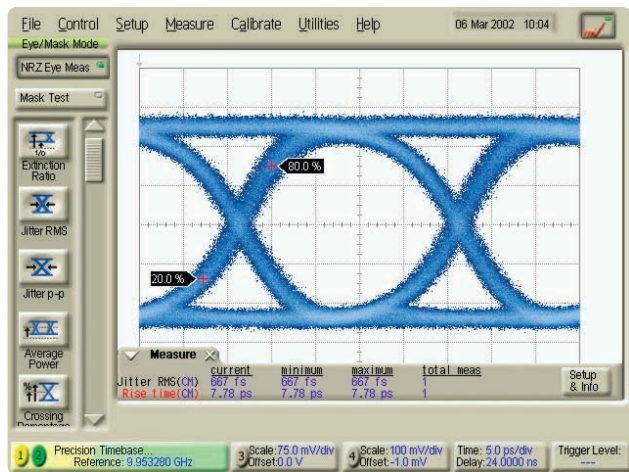


Figure 2: Measuring a 40 Gb/s signal through 1 meter of cable

When measuring 40 Gb/s signals, the effects of cabling can be significant. In figure 1 the 86118A is connected directly to the test device. In figure 2, a 1 meter length of 2.4 mm diameter cable is connected between the test device and the 86118A. Although the eye opening and edgespeeds are good in both configurations, a more accurate representation of the waveform is seen in figure 1. The extra cabling (figure 2) reduces the effective measurement bandwidth. Attenuation of the

higher frequency components give the waveform a rounded off appearance as well as degraded edgespeeds. Real features that are undesirable, such as overshoot and ringing, can be masked when long cables are used in connecting the test device

Low instrumentation jitter is achieved using the 86107A Precision Timebase Module.

By internet, phone, or fax, get assistance with all your test and measurement needs.

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