

## SIA-4000 Getting to the numbers

Did you know:

The SIA-4000 has a dual engine architecture: one dedicated for time (jitter) measurements and the other for amplitude (oscilloscope) measurements?

The time measurement engine is the portion of the SIA-4000 that does all of the time and jitter measurements on the data signal including DJ, RJ, PJ and TJ measurements - up to 12.5Gb/s. **The performance of the SIA-4000 time measurement engine is equivalent to >35GHz oscilloscope bandwidth.**

Oscilloscope bandwidth is important when making DCD/ISI (DDJ) measurements. The oscilloscope's ability to measure fast rise/fall times has an impact on the DCD/ISI measurement noise floor as shown in Fig. 1 below.

Comparison of DCD/ISI measurements from a 12.5 Gb/s pattern generator using 20GHz and 40GHz bandwidth scopes and the SIA-4000.

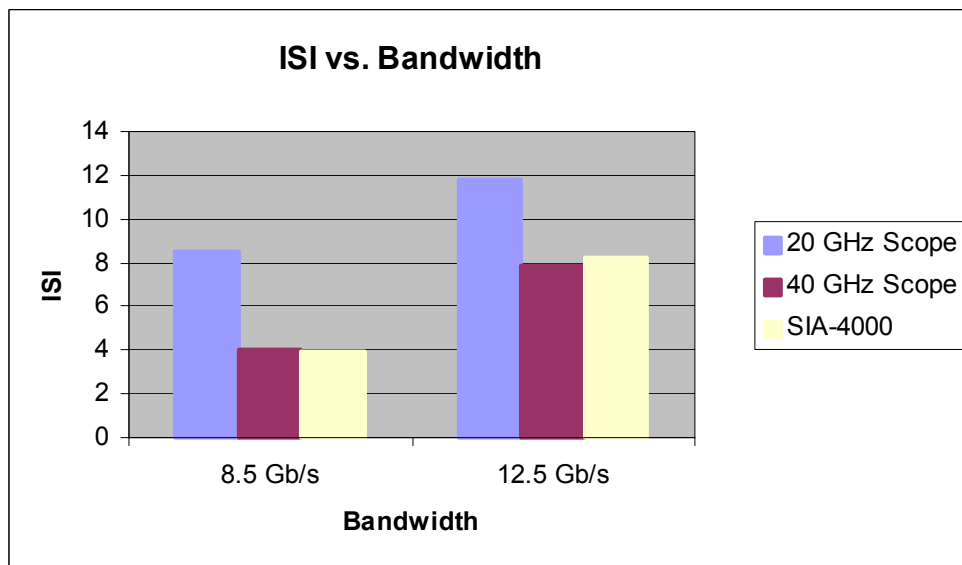


Figure 1

The chart shows how the DCD/ISI measurement is higher on a 20GHz bandwidth sampling scope than the 40GHz. In other words, a higher bandwidth instrument enables you to more accurately measure lower DCD/ISI measurements. Notice how the time measurement performance of the SIA-4000 is equivalent to a 40 GHz scope.

Unless your instrument has an effective bandwidth of over 35GHz you will be limiting your ability to accurately measure the DCD/ISI (DDJ) of your high speed data signals.