



Question: “How can I achieve optimal test time for power measurements?”

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Answer from Joe Kelly:

This seems like a basic question, but it is loaded with a lot of potential benefit. First of all, a lot of people tend to use averaging to acquire good repeatability of their measurements. This habit stems from the use of spectrum analyzers on the bench, where test time is not necessarily of concern and averaging always stabilizes the measured values. With ATE, when the goal is fast test time, averaging should be avoided as much as possible. If the signal being measured from the DUT (Device Under Test) is well above the noise floor of the ATE (automated test equipment), then likely no averaging will be necessary. Another common mistake is with relative power measurements like IP2 and IP3, where averaging is likely needed for measuring the intermodulation products. Often, people leave the same settings for measuring the intermodulation products (with large amounts of averaging) for measuring the input tones also. These tones are significantly above the noise floor of the ATE and do not need averaging.

When a test program is done with the debug stage and ready to go to production, review all of the power measurements to confirm that only the low-level power measurements are using averaging. Doing this will save you many milliseconds of test time, which translates to money at the end of the day.