

Q&A - Teradyne Web Seminar March 31, 2004

[Impact of Low-Voltage Devices on Test and Inspection](#)
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Q: Are there any negative affects with various types of vector-less test?

A: Yes, because some of them use voltages that exceed device's specs, and even though they're not powered, chance to damage the devices exists. Especially since vector-less test takes a long time to execute.

Q: I am curious as to how much progress the ICT test machine providers such as Teradyne, Agilent, Etc are tracking with low-voltage device testing, and when a more versatile test platform can be expected. Also, how likely it is that CM's will embrace the test machine improvement...

A: Teradyne has been deploying systems with SafeTest technologies, that solves the problems of testing low voltage devices, for the last 3 years. Many CM's and OEM's have already invested in this technology to protect low voltage parts.

Q: Does Teradyne have any tools to deal with multiple logic levels?

A: As part of the SafeTest package of hardware and software currently the new TestStation's can deal with 26 different logic levels per test.

Q: Is back-drive going to become a major sin, already not allowed for with germanium devices. What are alternatives to back drive?

A: Back-driving is not obsolete but you need to understand how long and at what current you are back-driving. You really need to disable the entire board and be able to verify that you are not back-driving. You need closed-loop pin electronics to control and measure current and voltage and apply the necessary limits.

Q: It's hard to assess whether ground-bounce occurs or not, in case of boundary scan especially in designs. EDA vendors don't seem to provide tools.

A: Agreed. With tighter voltages, then ground bounce will be more of a problem and I no of no tools that will analyze this problem. Rather than a manual system, we need good software to analyze the outputs that are changing as part of the design process.