

# Xilinx Launches Signal Integrity Website

Xilinx recently introduced the first website dedicated to solving signal integrity problems.

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You face far more difficult engineering challenges today than you did just a few years ago. Feature size reduction and the need for reduced power consumption have driven device core voltages down from 5V to 1.5V and below. This change in voltage and signal frequency content requires us to use new design practices and take into account electrical effects that could previously be ignored. Xilinx is addressing these technical issues to help you get over the technical hurdles and complete your designs quickly, by providing an online reference for information on the fundamentals of signal integrity, PC board design and power supply considerations, simulation tools, and thermal characteristics.

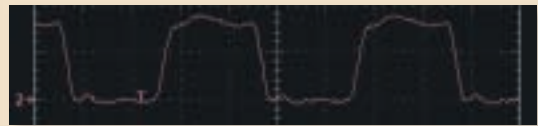
Signal integrity issues in high performance designs have become a major concern in many companies. With frequencies above 300 MHz and rise times of a few hundred picoseconds, you face noise and signal reflections that severely complicate PC board design. These noisy signals affect performance, system development, and product introduction schedules. Without proper signal termination, you can experience a lot of ringing and reflection such as that shown in Figure 1.

To help solve these signal integrity problems, Xilinx offers the unique Digitally

Figure 1 - Noisy signal without Xilinx DCI (Digitally Controlled Impedance)



Figure 2 - Clean signal resulting from the use of DCI



Controlled Impedance Technology (DCI) in the Virtex-II FPGA family. DCI allows you to attain far higher signal integrity with far fewer external resistors. With DCI implemented in Virtex™-II FPGAs, the signal shown in Figure 1 can look much cleaner, like the one shown in Figure 2. DCI eliminates most of the cumbersome termination resistors in your design and automatically adjusts to impedance mismatches caused by temperature and voltage fluctuations.

On the Xilinx Signal Integrity Central website, you'll find a wealth of information, including:

- A tutorial on signal integrity
- A glossary about signal integrity
- Information on IBIS models

- Information on simulation tool vendors
- Information on high-density fine-pitch BGA packages
- Information on how to route the I/O
- Information on power supplies, bypassing, heat sinks
- Power estimators
- Information on multi-gigabit signaling
- And much much more.

## Conclusion

Xilinx DCI technology will make your PC boards easier to develop, less expensive, and more reliable. Visit the Xilinx Signal Integrity Central website at: [www.xilinx.com/xlnx/xil\\_prodcat\\_landingpage.jsp?title=Signal+Integrity](http://www.xilinx.com/xlnx/xil_prodcat_landingpage.jsp?title=Signal+Integrity)