

# Understanding the PCI-SIG Compliance Program

This program is the key to the successful launch of any product that incorporates PCI-SIG technologies such as PCI, PCI-X, or PCI Express.

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The PCI-SIG Compliance Program, which is open to all members of the PCI-SIG, seeks to encourage and achieve the highest degree of voluntary compliance with PCI-SIG specifications where PCI-SIG technologies are used. The ultimate goal is to foster the development of high-quality products that offer reliable and hassle-free operation.

For most, the ultimate goal of participation is inclusion on the PCI-SIG Integrators List, which is a “quality pedigree” for a product. As a participant, you may elect to follow through to completion, or stop at any point along the way. The three parts of the program are:

- The Compliance Checklist
- The Compliance Workshop
- The Integrators List

In this article, I will present the utility of each of these steps to help you understand why the PCI-SIG Compliance Program should be an integral part of your product development.



ware test platform available from PCI-SIG. The link and transaction protocol tests require a specific Agilent protocol test card.

A complete lab setup might run close to \$150,000. Some of us are fortunate to have employers with this kind of capital equipment. If you do not have access to suitable test equipment, consider designing with transceivers and IP cores that have already passed these tests; you can participate in the focused compliance testing with confidence, even if you do not have the ability to perform it in advance.

The interoperability test sessions are less exacting than the focused tests. However, they are no less important, as they provide advance warning of problems

ity “report card” that is used for reporting results.) In the event that problems arise, I have observed that participants are highly motivated to resolve interoperability issues – often, someone with test or analysis equipment at the event is willing to help debug the issue and isolate the root cause.

The PCI-SIG recognizes that participants may bring designs that are not fully compliant, or have unknown or undisclosed bugs. For this reason, to pass the interoperability tests, you must only demonstrate a success rate of 80%. If you have also passed the PCI-SIG focused tests, you have met the additional requirements to have your device included on the

compliance, the annual PCI-SIG Developer’s Conference, and frequent technical training events. Compared to many other standards organizations, membership in the PCI-SIG is very affordable.

### The Integrators List

After you have successfully completed a Compliance Workshop and submitted a Compliance Checklist for your device, the PCI-SIG reviews the material and adds your device to the Integrators List under the appropriate category. Categories include components (silicon and IP cores), BIOS firmware, add-in cards, and PC-AT motherboards and systems. The Integrators List is your proof that your product passed the rigorous PCI-SIG tests and demonstrated interoperability with others.

This list is a valuable tool. As a developer, you might find yourself in the role of a customer, searching for silicon and IP cores that have been rigorously tested. Xilinx, as a vendor of silicon and IP cores, is proud to have a number of entries on the Integrators List. The low-cost Xilinx® LogiCORE™ PCI Express x1 Endpoint with PIPE Interface for Spartan™-3 devices is on the Integrators List. As of this writing, the Xilinx LogiCORE PCI Express x8 Endpoint for Virtex™-4 FX devices has passed the Compliance Workshop and Xilinx has submitted a Compliance Checklist for this product. By the time you read this, it should be on the Integrators List as well.

Similarly, if you are developing products that implement PCI-SIG technologies, you should make an effort to add your products to the Integrators List. Then, refer your customers to the list. Most customers welcome additional information to make intelligent purchases. Some discerning customers might even refuse to buy products that are not on the list.

If you are planning a product that integrates PCI, PCI-X, or PCI Express interfaces, join the PCI-SIG, participate in the Compliance Program, and get your product on the Integrators List. The success of your product may depend on it. For more information, visit the PCI-SIG website at [www.pcisig.com](http://www.pcisig.com).

Figure 2 – PCI-SIG interoperability testing results report (published with permission from PCI-SIG)

your customers might encounter with your product. During these sessions, the participants set their own test procedure and must agree on what constitutes a pass or a fail. Generally, it is expected that you demonstrate some degree of functionality to substantiate that your interface is functional. (Figure 2 shows the interoperabil-

Integrators List. Should you fail, you can repeat the Compliance Workshop as many times as necessary.

Now, about this free lunch... technically, it is not free, because you must be a PCI-SIG member, which currently costs \$3,000 per year per company. Membership also includes access to all the PCI-SIG specifi-