

Avnet Design Services Evaluation Kits Make It Easy to Design with Xilinx Products

New kits for Spartan-II, Virtex-E, and CoolRunner architectures enable you to prototype and evaluate your designs quickly and easily.

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Whether it's consumer applications using the low power CoolRunner™ family, high-volume communications gear using the low cost Spartan™-II family, or network switching infrastructure using the high-capacity Virtex™-E family, Avnet Design Services (ADS) provides an evaluation kit that is right for virtually any application using Xilinx FPGAs and software.

Spartan-II and Virtex-E Evaluation Kits

Both the Spartan-II and Virtex-E development boards feature a Xilinx XC18V01 serial PROM (SPROM), a digital thermometer, and a variety

of I/O and breakout connectors. A demonstration program uses the digital thermometer to display the temperature in binary code on the boards' eight LEDs.

Also included in the kits are all the schematics, design files, demonstration code, and even the bill of materials used to create the evaluation board. This documentation shows the power-up circuitry, interconnect to ISPROMs, JTAG, and mode-selection pins – all the details you need to know to incorporate the evaluation board into your overall application design.

You can create your design on a PC and download it to either the FPGA or the SPROMs via a JTAG port download cable. This hands-on approach to familiarizing yourself with Xilinx FPGA architectures and products allows you to build confidence in your design and to verify that the parts you have selected will meet the goals of your application.

Special connectors have been added to the boards so you can access key portions of your application to interface, test, and verify your design. Three AMP Mictor connectors, compatible with Tektronix logic analyzers, provide high-speed signals you can use as stimulus and response to specific FPGA I/Os. Used in conjunction with the Xilinx ChipScope Integrated Logic Analyzer™ tool, these test points can display internal as well as external signals, making debugging even complex designs easier than ever.

Two 50-pin general-purpose header connectors provide access to additional signals and can be used to attach special purpose hardware to customize the boards for specific applications. You can use ribbon cables to connect the boards to additional data sources or destinations – or you can attach daughtercards directly to the Spartan-II or Virtex-E motherboards if signal integrity is important.

A 140-pin AVE (Avnet Vertical Expansion) bus connector on each board provides a way to attach the evaluation boards to other AVE-compliant boards. This allows a building block approach to hardware development. (See accompanying sidebar "AVE Bus Sets a Standard for Modular Design.")

The Spartan-II Evaluation Kit (Figure 1) hosts a Xilinx XC2S100-5PQ208 Spartan-II device. The Spartan-II kit costs US\$249.



Figure 1 - Spartan-II Evaluation Kit



Figure 2 - Virtex-E Evaluation Kit

The Virtex-E Development System kit (Figure 2) uses a Xilinx Virtex-E XCV100E-6PQ240 device. The Virtex-E board also comes with a two-digit seven-segment liquid crystal display (LCD). The Virtex-E board with Xilinx Alliance Series™ software costs US\$1,495. With Xilinx Foundation Series™ software, the Virtex-E board costs US\$2,495.

CoolRunner XPLA3 Evaluation Kit

The ultra low power CoolRunner family of FPGAs achieved fame and credibility in the programmable logic industry for their ability to function solely on the electricity generated by six grapefruit. The ADS kit fully supports a grapefruit power supply.

Because CoolRunner FPGAs consume so little power, the design of the development board is significantly different from the Spartan-II and Virtex-E kits. The ADS XPLA3™ Evaluation Kit (Figure 3) hosts a CoolRunner XCR3256XL-7TQ144 device, a low-power two-digit seven-segment LCD, a location for a 9V transistor battery (if grapefruit are out of season), JTAG programming header, and a prototype area. The kit comes with complete documentation, demonstration code, and a bill of materials for the board. The XPLA3 Evaluation Kit costs US\$89.95.

Other Complementary Kits from Avnet Design Services

Avnet Design Services also fabricates evaluation kits for popular microprocessors and microcomputers. The Intel StrongARM® develop-

ment kit includes everything required to develop an Internet appliance. It contains a Xilinx Spartan-II FPGA that contains the Xilinx PCI core adapted by ADS to interface directly with the StrongARM processor bus.

Other ADS evaluation kits feature Motorola microprocessors, such as the 68HC908JL3 and 68HC908GP32. These complementary kits can be used in applications that require an “off-FPGA” processor for configuration or housekeeping control.

Conclusion

The Xilinx-based evaluation kits from ADS provide a complete suite of hardware platforms for selecting, evaluating, and designing with any Xilinx FPGA family. And, to make it even easier, Avnet Design Services offers customer-training workshops on how to use the Xilinx evaluation kits and software. Visit the Avnet Design Services website at www.ads.avnet.com to find the costs, times, and places of workshops most convenient for you.

Avnet Design Services is the technical organization of Avnet, Inc, a leading global electronics distributor based in Phoenix, Arizona, United States. A Fortune 300 company, Avnet is one of the world's largest distributors of semiconductors, interconnects, passive and electromechanical components, and computer products from leading manufacturers, including Xilinx.

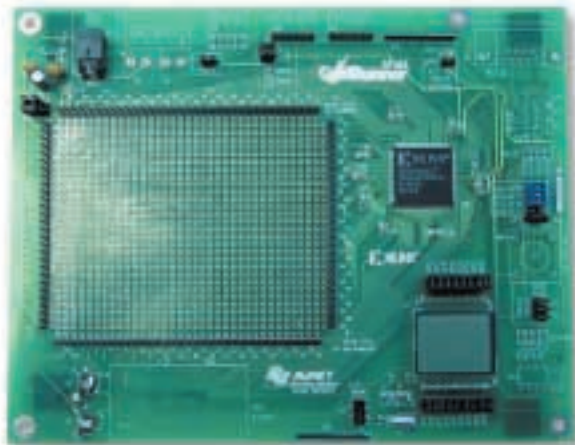


Figure 3 - CoolRunner XPLA3 Evaluation Kit

AVE Bus Sets a Standard for Modular Design

The Spartan™ -II and Virtex™ -E evaluation kits are compatible with the AVE (Avnet Vertical Extension) bus standard. This standard allows all AVE-compliant boards to interconnect using a high-performance “daughtercard” style connection. Boards can be added, like building blocks, to configure the exact platform required to develop even the most complicated design.

Avnet Design Services created the Virtex-E System Development Platform to serve as the motherboard to host this configuration of connectable hardware modules. The platform contains most of the major building blocks that applications require: Xilinx Virtex-E XCV1000E-6 logic device, 64-bit/33 MHz PCI connector (3.3V), PCI Mezzanine card, 64 MB Micron SDRAM, 32 MB flash memory, USB 2.0 PHY and connector, RS232 connector, controller area network (CAN) bus, 10/100 Ethernet PHY and connector, video encoder and decoder, and 24-bit stereo DAC.

Using an ADS evaluation kit with an AVE bus, you can:

- Plug in modules to provide processors, additional memory, modem, or DSP functions.
- Develop applications code and FPGA designs in parallel.
- Evaluate, integrate, and test complex IP cores, including multiple cores at the same time.

By customizing your own unique development platform with AVE-compliant boards, you can cut development time and accelerate time to market. For the most up-to-date information on this development methodology, visit the Avnet Design Services website at www.ads.avnet.com.