



XEM3001 - Xilinx FPGA Integration Module

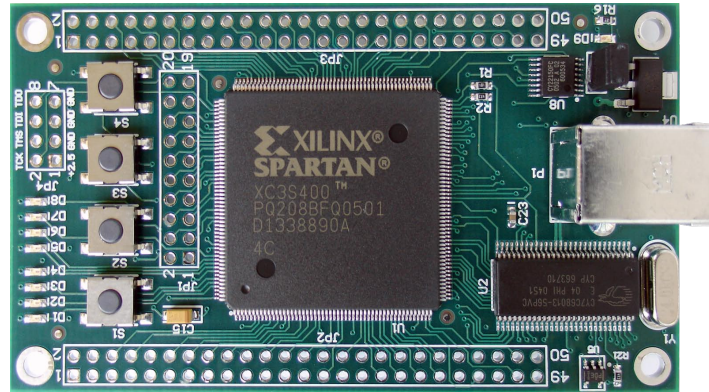
Simple and Powerful

The XEM3001 FPGA integration module from Opal Kelly is a tiny FPGA module incorporating just the essentials for hardware experimentation - the new Spartan 3 FPGA from Xilinx, a blazing USB 2.0 interface, a flexible clock generation chip, a handful of LEDs and pushbuttons, and loads of direct access pins to the FPGA.

All of this is neatly arranged on a tiny business-card-sized board ready for stand-alone use or to be integrated into your application.

Highlighted features include:

- Spartan 3 (XC3S400) FPGA.
- Business card size (3.5" x 2.0").
- High-speed USB 2.0 interface.
- Bus-powered for easy use with the option of self-powering.
- On-board multi-output clock generation for frequencies from 1 - 150 MHz.
- On-board EEPROM for storing clock generator parameters and firmware.
- 100-mil headers conveniently spaced for use on standard protoboards.
- Access to 90 FPGA I/O pins including four clock pins.
- Eight (8) LEDs.
- Four (4) tactile pushbuttons.



XEM3001 shown actual size (3.5" x 2.0")

(XML) to be easy-to-read and portable. You can choose common components including switches, pushbuttons, LEDs, and hexadecimal displays, and arrange them in any manner or even across multiple windows.

FrontPanel lets you exceed the limitations of I/O boards and doesn't waste valuable FPGA pins. Use hundreds of virtual wires without consuming a single additional pin!

Thorough documentation and several examples are included to help you get started.

Spartan 3 Integration

Utilizing the latest low-cost FPGA from Xilinx, the XEM3001 is well-suited for small to medium FPGA designs including signal processing, microprocessor emulation, and general purpose hardware interfaces.

The XEM3001 has a 400,000-gate Spartan 3 FPGA with four digital clock multipliers, 16 dedicated 18x18 multipliers, 288-kbits of block RAM, and over 8,000 logic cells.

The XEM3001 is fully compatible with Xilinx's free ISE WebPack design tools, including VHDL and Verilog synthesis, so no additional costs are involved in getting started on your design.

Programmer's Interface

Opal Kelly provides easy-to-use C++ and Python programmer's interfaces for use in both Windows or Linux programming environments. The interface includes methods

to reset and download designs to the module, program the on-board clock generator, and interface with your design through the USB port. You don't need any knowledge of the USB protocols or drivers -- we've taken care of that for you so you can get down to business.

Simple methods are available to transfer asynchronous and synchronous data between your hardware design and software application. With the XEM3001 and FrontPanel programmer's interface, software interaction with your design is simple yet powerful.

OEM Solution

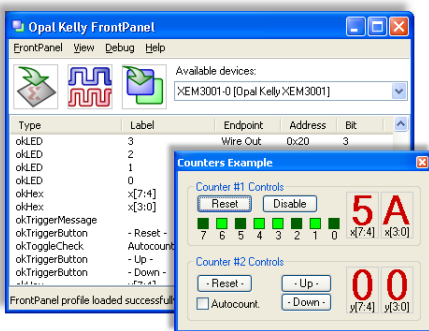
The XEM3001 and FrontPanel software make a great OEM solution, providing cookbook USB capability and flexible hardware interfacing to OEM designs such as evaluation boards or end-user products.

More Information

For additional information on the XEM3001, FrontPanel, and several FrontPanel examples, please visit us online at

<http://www.opalkelly.com>

In addition to several examples available for our all products, our online community forums provide an excellent way for you to communicate with other users and directly with our technical staff.



FrontPanel Software

With Opal Kelly's innovative FrontPanel software, you can design a tailored virtual front-panel user interface for your projects. The user interfaces are written in the industry-standard eXtensible Markup Language

