

FreeForm/104

FPGA for Reconfigurable Computing

FreeForm/104

Features

- Customizable PC/104 board based on Xilinx's Spartan 3E - 500,000 gates
- FPGA configurable through JTAG or SPI flash (4Mb)
- Reprogrammable in the field for standard and custom designs
- External 5V power connection for stand alone usage
- Four user configurable LEDs and on-board reset switch
- Eight position rotary switch connected to FPGA

Standard Configurations

- Digital I/O:
96 digital I/O (8255 compatible), 6 x 8254 counter/timers
- Digital I/O Opto-22:
48 Opto-22 (8255 compatible), 6 x 8254 counter/timers
- Stand Alone Controller:
8 bit I/O PC/104 Master

Custom Configurations

- Custom configurations can be easily developed by user or through Connect Tech's engineering services



FreeForm/104 is a PC/104 based card that features a reconfigurable FPGA for digital I/O and control applications.

Based on Xilinx's Spartan 3E, Connect Tech's FreeForm/104 offers off-the-shelf flexibility. The FPGA is stored on-board in flash memory, allowing users to accommodate design changes at run time making it ideal for high speed, compute-intensive, reconfigurable applications.

Customized FPGA configurations can be developed easily by the user with Xilinx's free ISE Webpack software at, http://www.xilinx.com/ise/logic_design_prod/webpack.htm or through Connect Tech's engineering services.

The versatility, high speed processing core and less than 25 ns transfer function of FreeForm/104 makes it ideal for applications including; DSP, software defined radio, aerospace, defense systems, computer hardware emulation, production or laboratory testing and industrial process monitoring and control.

Specifications

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|-----------------------------|--|
| Programmable FPGA | Xilinx Spartan 3E - 500,000 gates, 360K RAM |
| Input Clock | 66 MHz, internally scaleable |
| FPGA Code Storage | 4 Mbit SPI Flash |
| Connectors | 2 x 50 pin header - 48 reprogrammable 5V buffered I/O +/- 24mA drive current, each connector has 5V power and a ground pin 1 x 26 pin header - 6 bi-directional pins, 12 input pins, 6 ground pins, unbuffered 5V TTL PC/104 header - fully bi-directional, configurable as a master or a slave, 8 bit I/O, 12 address bits, all IRQ's are connected, DMA's 0-3 |
| Programmable I/O | 96 high current TTL/CMOS (48 per 50 pin connector), 6 TTL (26 pin connector) |
| Fixed I/O | 12 TTL inputs (26 pin connector) |
| Interrupts | All PC/104 interrupts are connected to the FPGA |
| Environmental | Operating Temperature (standard): 0° C to 70° C (32° F to 158° F) Industrial Temperature: -40° C to 85° C (-40° F to 185° F) Humidity: 95% non-condensing |
| Power Requirements | +5 V DC (+/- 5%) |
| Dimensions | Length: 9.5885 cm/3.775" Width: 9.017 cm/3.55" |
| Bus | PC/104 compatible or stand alone |
| Transfer Function | Less than 25 ns |
| System Requirements | Varies by configuration |
| Warranty and Support | Lifetime warranty and free technical support |



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