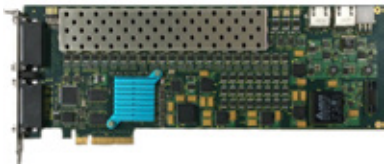
FPGA Workbench

FPGA Workbench™ provides a complete development environment for building customized solutions based on Concurrent Real-Time's programmable FPGA cards. FPGA Workbench includes a powerful GUI for selecting and configuring a wide range of pre-developed data acquisition and industry-specific modules to meet your application requirements. The library of functional IP modules includes pulse width modulation, analog I/O, digital I/O, SENT protocol, encoder, ignition, injection, crank/cam shaft, wheel speed sensor and change-of-state.



More Information:

concurrent-rt.com
wiki.simwb.com
info@concurrent-rt.com
800.666.4544
954.974.1700

Programmable FPGA Cards

Concurrent Real-Time's family of programmable FPGA PCIe cards feature a powerful field programmable gate array that supports both digital and analog I/O. The cards can control up to 96 digital I/O signals along with 16 analog inputs and 16 analog outputs. Each card's I/O functionality is fully customizable by the user by means of the FPGA Workbench tools. The cards feature isolated I/O power, high-speed digital isolators and multi-board synchronization. Optional NIST traceable calibration is available for the analog section. The cards are available with 362K or 504K logic elements.

Intel Altera Quartus Prime Standard Edition for Aria V Development

Available with FPGA Workbench is the Altera Quartus Prime Standard Edition for Aria V Development software that makes it easy to customize a card to meet your exact I/O requirements. Altera tools allow users to develop and integrate their custom HDL code targeted for the Aria V FPGA on the Concurrent Real-Time FPGA boards. Altera's Qsys tool eliminates manual system integration tasks and allows you to focus on designing the custom I/O functionality you need. The Qsys system integration tool saves design time and improves productivity by automatically generating interconnect logic to connect intellectual property (IP) functions and subsystems.

FPGA Card Features:

- 96-channel Digital I/O
  - 5V 4mA TTL (3.3V Available)
  - Digital I/O Direction per Nibble
  - High Speed Digital Isolators
- 16-channel 16-bit D-to-A Conversion
  - Single-ended Output
  - 0 to +10V, +/-5V or +/-10V Output Range Selection
  - 10 Milliamp Output Drive
  - 100 K Updates Per Second Per Channel
- 16-channel 16-bit A-to-D Conversion
  - Differential or Single-ended Input
  - +/-5V or +/-10V Input Range
  - 300K Updates Per Second Per Channel
- Altera Arria V Family FPGA
  - Up to 504K Logic Elements Available
- 1GB DRAM
- TCXO Clock Source
- 8-output Programmable Clock Generator
- Industry Standard SCSI 68-pin VHD Connectors for I/O
- RJ-45 Connectors for Multi-board Synchronization
- PCI Express x4 Revision 1.0a
- Isolated Power on all I/O
- Optional NIST Traceable Calibration

Specifications:

PACKAGING

- Full Height Full Length PCI Express (12.3" long x 3.8" high)

POWER REQUIREMENTS

- Approximately 50 watts (12VDC @ 4 Amp) with external power connector

ENVIRONMENTAL

- Operating: 10° to 40° C
- Storage: -40° to 65°C
- Relative Humidity: 10 to 80% non-condensing
- Cooling: Forced Air Required
- ROHS Compliant

Ordering Information:

- CP-FPGA-2
  Programmable FPGA card with 362K logic elements
- CP-FPGA-3
  Programmable FPGA card with 504K logic elements
- WC-CP-FIO
  FPGA Driver for RedHawk™ Linux®
- WU8021-300
  FPGA Workbench Software
- WU-ALT-DEV
  Altera FPGA Development Tool Kit
- ICS-SWB-1276
  License for Programmable FPGA card use under SIMulation Workbench

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Functional Module Licenses

Model Number	Module Type	Lines per License
ICS-FPGA-2000	Analog I/O	1
ICS-FPGA-2001	Digital I/O	1
ICS-FPGA-2002	User Programmable HDL Module	1
ICS-FPGA-2007	Crank/Cam Shaft	4
ICS-FPGA-2008	Ignition/Injection	1
ICS-FPGA-2009	PWM In	1
ICS-FPGA-2010	PWM Out	1
ICS-FPGA-2011	Wheel Sensor	1
ICS-FPGA-2012	Change-of-State	32
ICS-FPGA-2013	SENT Receiver	1
ICS-FPGA-2014	SENT Transmitter	1
ICS-FPGA-2015	Angular Encoder	1
ICS-FPGA-2016	Angular Decoder	1
ICS-FPGA-2017	Waveform Output	1
ICS-FPGA-2018	Analog Threshold	1