

RT-LAB | OP4200

Small all-purpose Rapid Control Prototyping (RCP) system



RT-LAB

Affordable entry-level solution for your RCP needs

HIGHLIGHTS

- Flexible connectivity including CAN bus and SFP optical interfacing to meet various industry needs
- High precision PWM capture and generation, and other timed signals (Encoder, Resolver, Hall Effect)

PURPOSE

Quickly move from your MATLAB/Simulink® designed control systems into real time with RT-LAB, our platform to perform your innovative industrial and research RCP tests and validation.

DESCRIPTION

The OP4200 RCP system offers Rapid Control Prototyping (RCP), data acquisition and I/O expansion capabilities in a desktop-friendly package combined with RT-LAB software. Create more advanced FPGA RCP applications by adding the RT-XSG toolbox for FPGA real-time simulation

APPLICATIONS

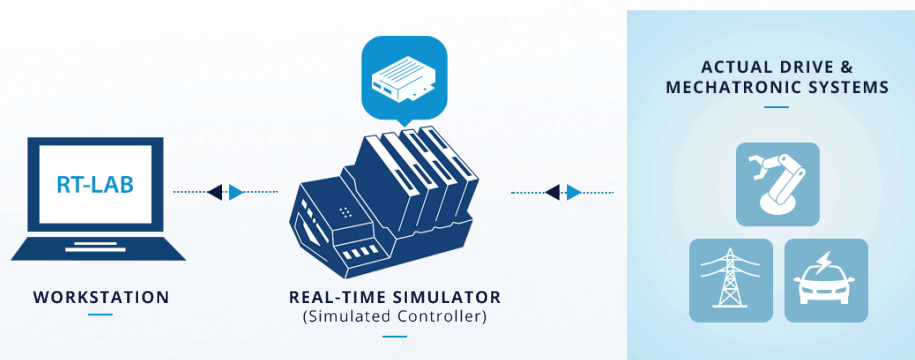
Combustion engine control, robotics, battery management system emulation, Uninterruptible Power Supply (UPS) control, motor drive controller, microgrid agent control, classroom experiments, workshops and more.

KEY PERFORMANCE SPECS

- Outer Control Loop Frequency (CPU): < 10 kHz
- Fast control loop Frequency (FPGA): < 1 MHz (option)
- Advanced PWM generation: up to 200 kHz, resolution 5 ns

TYPICAL USE CASE

RCP Process



System Configuration

HARDWARE	Baseline
OP4200 Simulator	
ARM® Cortex® A9 CPU - 2 cores - 1 GHz, Xilinx Zynq® FPGA Kintex™7 125K LUT Connectivity - Ethernet port 10/100/1000 Mbps (RJ45). RS232 (DB9), USB2.0, 5-Gbit/s high-speed fiber optic link (2x SFP)	✓
Digital Input 32 channels, 4.5V to 50V, 40 ns typical propagation delay	***
Digital Output 32 channels, 5V to 30V, 65 ns typical propagation delay	***
Analog Input 16 channels, 16 bits, 500 kS/s, +/-20V, adjustable range	***
Analog Output 16 channels, 16bits, 1 MS/s, +/-16V	***
Analog Input 16 channels, 16 bits, 2MS/s, +/-20V	***
Timed Generation and Measurement Firmware Selectable 32 timed digital inputs and 32 timed digital outputs	***
SOFTWARE	
RT-LAB Real-time Simulation Software	✓
RT-XSG RT-XSG toolbox for FPGA real-time simulation	***
COMMUNICATION PROTOCOLS	
CAN Bus interface board	***

*** Optional