

# RT-LAB | OP4200

Small all-purpose rapid control prototyping (RCP) system

BDL42-100

AFFORDABLE ENTRY-  
LEVEL SOLUTION FOR  
YOUR RCP/HIL NEEDS



Dimensions: 11.2 "(W) x 8.7 "(D) x 9,75" (H)

## HIGHLIGHTS

- Unsurpassed 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).

## 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.

## PURPOSE

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

## 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

### Baseline

#### HARDWARE

**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 for OP4200

#### SOFTWARE

RT-LAB | Real-time Simulation Software

RT-XSG | RT-XSG toolbox for FPGA real-time simulation

#### COMMUNICATION PROTOCOLS

CAN bus interface board

SFP | RS-232 | optical synchronization link | USB | JTAG | RJ45 Ethernet port

✓

\*\*\*

\*\*\*

\*\*\*

\*\*\*

\*\*\*

\*\*\*

✓

\*\*\*

\*\*\*

✓