LATTICE SEMICONDUCTOR™

MachXO2 Pico Development Kit

Easy-to-Use Low-Cost Platform for Consumer Applications

The MachXO2™ Pico Development Kit is a low-cost, easy-to-use platform for evaluating and designing with MachXO2 ultra-low density FPGAs. The kit is based on a small form factor evaluation board that features the MachXO2 LCMXO2-1200ZE device, an LCD panel and an expansion header.

Speed Time-to-Market with Environment Scanning SoC Design

The MachXO2 FPGA on the Pico Evaluation Board comes pre-programmed with the Environment Scanning system-on-chip (SoC) design. This demo integrates multiple Lattice reference designs including the LatticeMico8™ microcontroller, WISHBONE interconnect, UART, and peripheral controllers for SPI and I²C. The board can be controlled with capacitive touch sense buttons and a menu-driven interface via a Windows or Linux terminal program over an RS-232/USB link.

After you check out the pre-programmed demo running on the board, you can easily access the reference design source code including the HDL, firmware and design tools required to quickly modify it for your own application. For more information go to www.latticesemi.com/ip.

MachXO2 Pico Eval Board Block Diagram
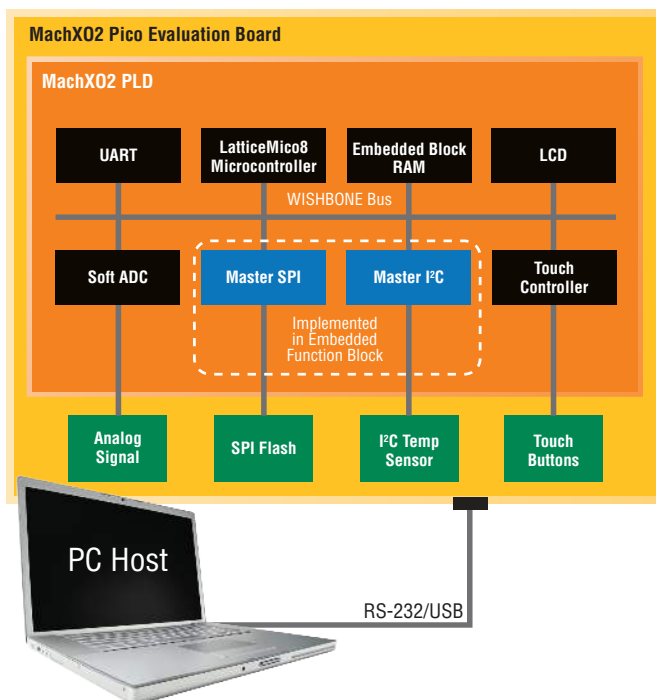
Key Features

- **MachXO2 PLD: LCMXO2-1200ZE-MG132CR1**
- **4-Character, 7-Segment LCD Display**
- **4 Capacitive Touch Sense Buttons**
- **1Mbit SPI Flash**
- **I²C Temperature Sensor**
- **Power Measurement via Delta Sigma Analog-to-Digital Conversion Using the MachXO2 Device**
- **RS-232/USB Interface**
- **JTAG Interface**
- **SPI Interface**
- **I²C Interface**
- **2x16 Expansion Header**
- **Programmed via Standard USB Cable**
- **QuickSTART Guide**
- **Marked for CE, China RoHS Environment-Friendly Use Period (EFUP) and Waste Electrical and Electronic Equipment (WEEE) Directives**

Ordering Information

Product	Description	Ordering Part #
MachXO2 Pico Development Kit	MachXO2 Pico Evaluation Board with LCMX02-1200ZE-MG132CR1 device, USB cable, QuickSTART guide, and demonstration design	LCMXO2-1200ZE-P-EVN

Optimize Power – Three Different Modes

The Environment Scanning SoC demo uses multiple operating modes to optimize power consumption. These operating modes use MachXO2 device features such as the Power Controller and I/O Bank Controller to reduce standby current dramatically during periods of system inactivity.
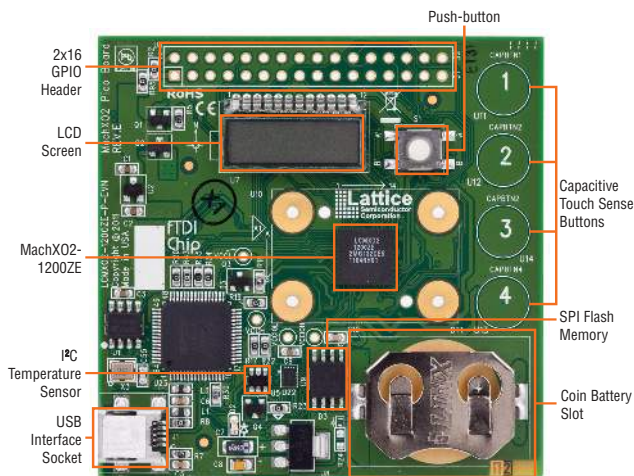
Standby

Time-out

Operate

Capacitive Touch Sense Buttons Simplify User Interface

The MachXO2 Pico Evaluation Board has four capacitive touch sense buttons. These buttons are used in the pre-programmed demo design to provide user input.

Capacitive touch sense buttons simplify the user interface. They can be implemented using MachXO2 devices without any additional active components. For more details, refer to the demo source code on the Lattice website.

Additional Information

Documentation including reference design source, sub-system descriptions, and schematics are available at www.latticesemi.com/mxo2-pico-kit.

Easy-to-Use Lattice Software FREE

Lattice Diamond® design software offers a comprehensive design environment for the MachXO2 architecture and other select PLD families. Featuring design exploration, ease of use, improved design flow, and numerous other enhancements, Diamond is the next generation replacement for ispLEVER®. The combination of new and enhanced features allows you to complete designs faster, easier, and with better results than ever before.

Reference Design Portfolio

Lattice offers an expanding portfolio of IP cores and reference designs targeted for system applications. Optimized for the MachXO2 architecture, these include I^2C, SPI, UART and PCI. The reference designs, source codes and documentation can be downloaded for free from the Lattice website. For more information, go to www.latticesemi.com/ip.

MachXO2 Pico Eval Board Top View

Push-button

2x16 GPIO Header

LCD Screen

MachXO2-1200ZE

I^2C Temperature Sensor

USB Interface Socket

Capacitive Touch Sense Buttons

SPI Flash Memory

Coin Battery Slot

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Order #: I0218A

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