

This document provides a brief introduction and instructions to install and run the MachXO2™ Pico Development Kit on Windows 7/Vista/XP/2000. Please refer to the complete documentation at www.latticesemi.com/alpha-mxo2-pico-kit.

1 Check Kit Contents

The MachXO2 Pico Development Kit contains the following items:

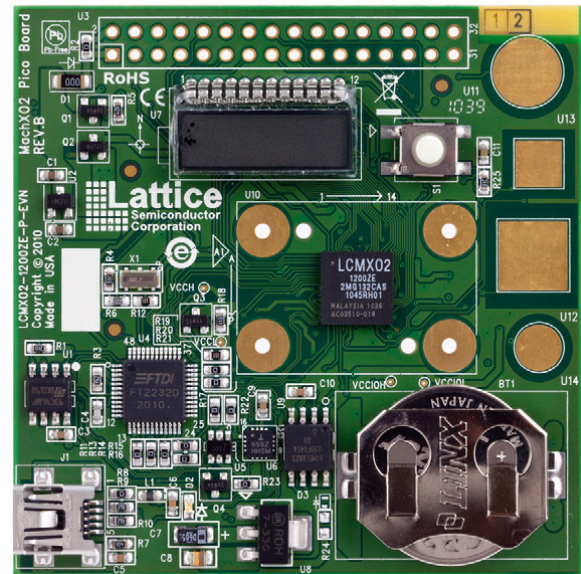
- MachXO2 Pico Evaluation Board pre-loaded with the Environment Scanning Demo
- USB cable
- QuickSTART Guide

Note: Detailed information is provided in the *MachXO2 Pico Development Kit User's Guide* at www.latticesemi.com/alpha-mxo2-pico-kit.

Storage and Handling Tips:

Static electricity can shorten the lifespan of electronic components. Please observe these tips to prevent damage that could occur from electrostatic discharge:

- Use anti-static precautions such as operating on an anti-static mat and wearing an anti-static wristband.
- Store the MachXO2 Pico Evaluation Board in the anti-static bag provided.
- Touch the metal USB housing to equalize voltage potential between you and the board.



2 Download Windows Hardware Drivers

Before you begin, you will need to obtain the necessary hardware drivers for Windows from the Lattice web site.

1. Browse to www.latticesemi.com/alpha-mxo2-pico-kit and locate the hardware device drivers for the USB interface.
2. Download the ZIP file to your system and unzip it to a location on your PC.

Linux Support:

The USB interface drivers for the evaluation board are included in Linux kernel v.2.4.20 or later, including distributions compatible with Lattice Diamond™ 1.1 and ispLEVER® 8.1 SP1 (Red Hat Enterprise v.3, v.4 or Novell SUSE Enterprise v.10).

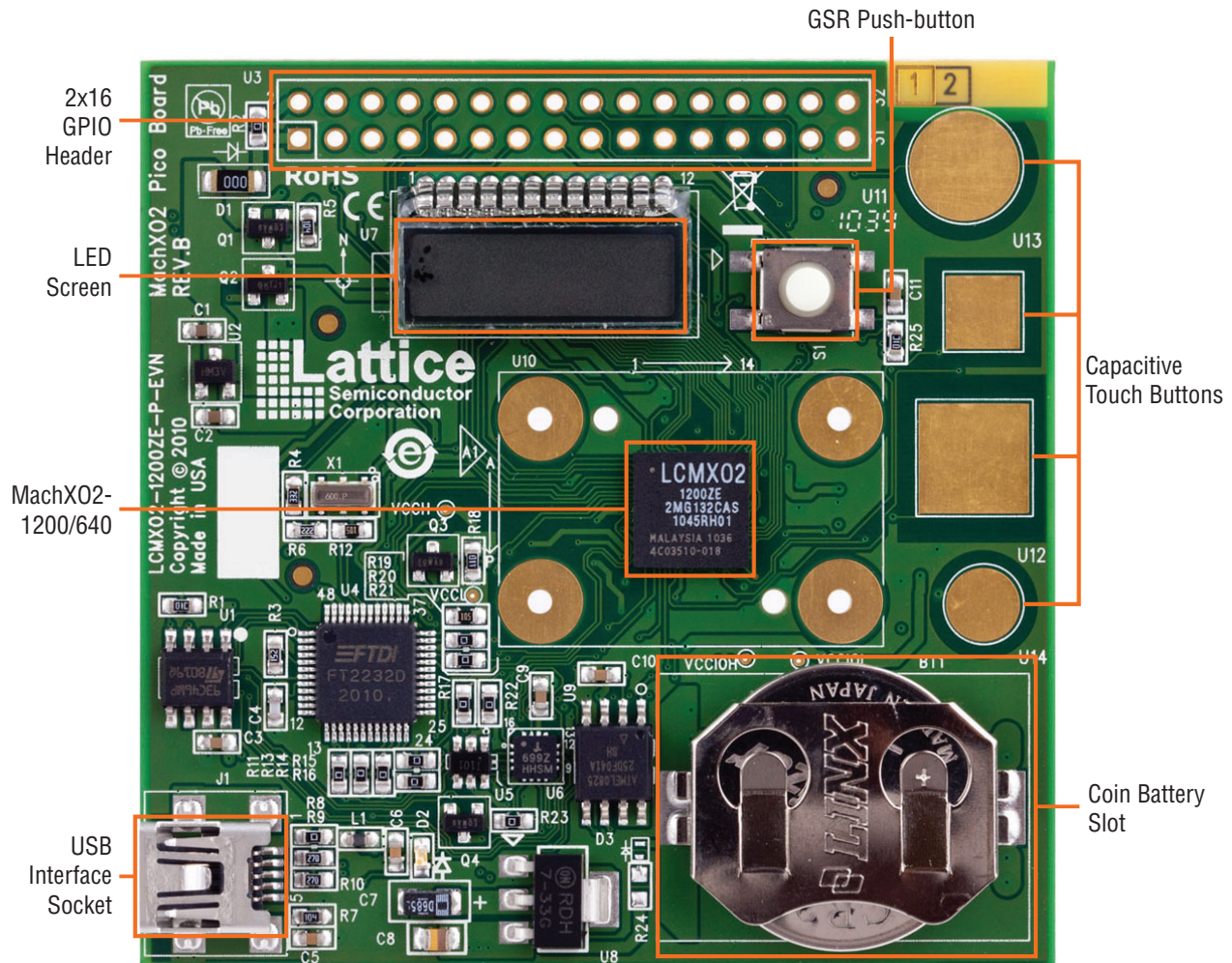
3

Assemble and Connect to the MachXO2 Pico Evaluation Board

In this step, power the board and connect it to your PC using the USB cable provided.

1. Connect the USB cable provided from a USB port on your PC to the board's USB interface socket on the bottom of the board as shown in the layout diagram below.

MachXO2 Pico Evaluation Board Layout Diagram

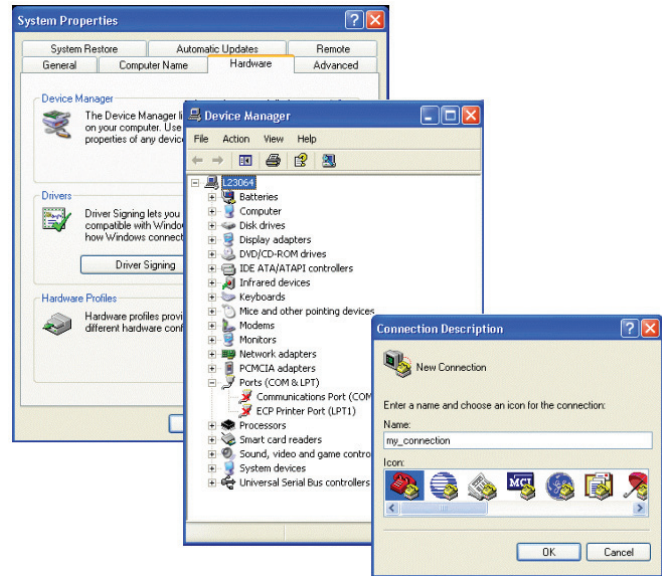


2. If you are prompted “Windows may connect to Windows Update” select **No**, **not this time** from available options and click **Next** to proceed with the installation. Choose the **Install from specific location (Advanced)** option and click **Next**.
3. Select **Search for the best driver in these locations** and click the **Browse** button to navigate to the Windows driver folder created in Step 2 of this QuickSTART Guide. Select the **CDM 2.04.06 WHQL Certified** folder and click **OK**.
4. Click **Next**. A screen will display as Windows copies the required driver files. Windows will display a message indicating that the installation was successful.
5. Click **Finish** to install the USB driver.

4 Set Up a Terminal Program

You will use a terminal program to communicate with the evaluation board. The following instructions describe the Windows HyperTerminal program which is found on most Windows PCs. You may use another terminal program but setup will be different. Note that Windows 7 does not include HyperTerminal. Tera Term has been verified to work with Windows 7. For Linux, Minicom is a good alternative.

Note: This step uses the procedure for Windows XP users. Steps may vary slightly if using another Windows version.



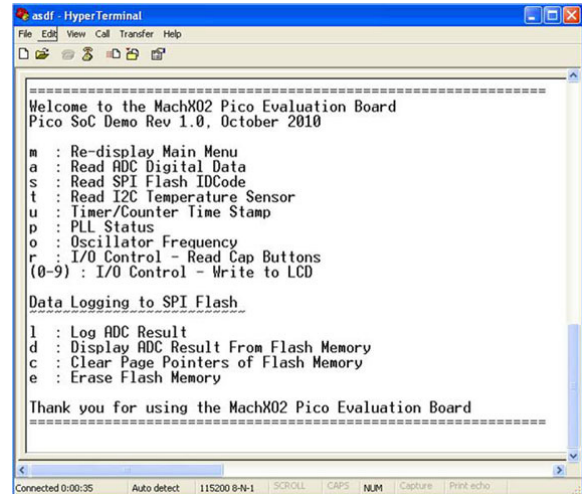
1. From the **Start** menu, select **Control Panel > System**. The “System Properties” dialog appears.
2. Select the **Hardware** tab and click **Device Manager**. The “Device Manager” dialog appears.
3. Expand the **Ports (COM & LPT)** entry and note the COM port number for the USB Serial Port.
4. From the **Start** menu, select **Programs > Accessories > Communications > HyperTerminal**. The HyperTerminal application and a “Connection Description” dialog appear.
5. Specify a Name and Icon for the new connection. Click **OK**. The “Connect To” dialog appears.
6. Select the COM port identified in Step 3 from the Connect using: list. Click **OK**.
7. The “COMn Properties” dialog appears where n is the COM port selected from the list.
8. Select the following Port Settings and click **OK**:

Bits per second: 115200
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None

The HyperTerminal window appears.

5 Running the Environment Scanning Demo

1. In the terminal window, press 'm' on the keyboard to display the menu. The Environment Scanning Demo main menu appears in HyperTerminal. *Note: Press 'm' to redisplay the menu if it scrolls off the screen. Refer to the MachXO2 Pico Development Kit User's Guide for main menu command usage.*
2. In the terminal window, press 'l' (lower case 'L' character). A data point from the current monitoring ADC will be saved in page 0 of the SPI Flash device on the board. Repeat logging a few more times.
3. In the terminal window, press 'd'. The first logged data point will be read on page 0 of the SPI Flash device and displayed on the HyperTerminal. You can display additionally logged data points until a "No More Data" message is displayed.
4. To display the logged data again, press 'c'. This will clear the page address pointers and data will be read beginning with page 0 of the SPI Flash.
5. Press 'e' to erase the content of the SPI Flash device.



```
asdf - HyperTerminal
File Edit View Call Transfer Help
-----
Welcome to the MachXO2 Pico Evaluation Board
Pico SoC Demo Rev 1.0, October 2010

m : Re-display Main Menu
a : Read ADC Digital Data
s : Read SPI Flash IDCode
t : Read I2C Temperature Sensor
u : Timer/Counter Time Stamp
p : PLL Status
o : Oscillator Frequency
r : I/O Control - Read Cap Buttons
(0-9) : I/O Control - Write to LCD

Data Logging to SPI Flash

l : Log ADC Result
d : Display ADC Result From Flash Memory
c : Clear Page Pointers of Flash Memory
e : Erase Flash Memory

Thank you for using the MachXO2 Pico Evaluation Board
-----
Connected 0:00:35  Auto detect  115200 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

6 Done!

Congratulations! You have successfully connected and demonstrated the MachXO2 Pico Development Kit. Please refer to the *MachXO2 Pico Development Kit User's Guide* available on the Lattice web site at www.latticesemi.com/alpha-mxo2-pico-kit for the following:

- Running advanced demos
- Details on additional evaluation board features and operation
- Programming the MachXO2 Pico Evaluation Board with the USB cable
- Modifying and generating the demo bitstreams from the Diamond project source files
- Schematics

Technical Support

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