

USB Audio 2.0 Reference Design XS1-L1 Quick Start

Version 1.0



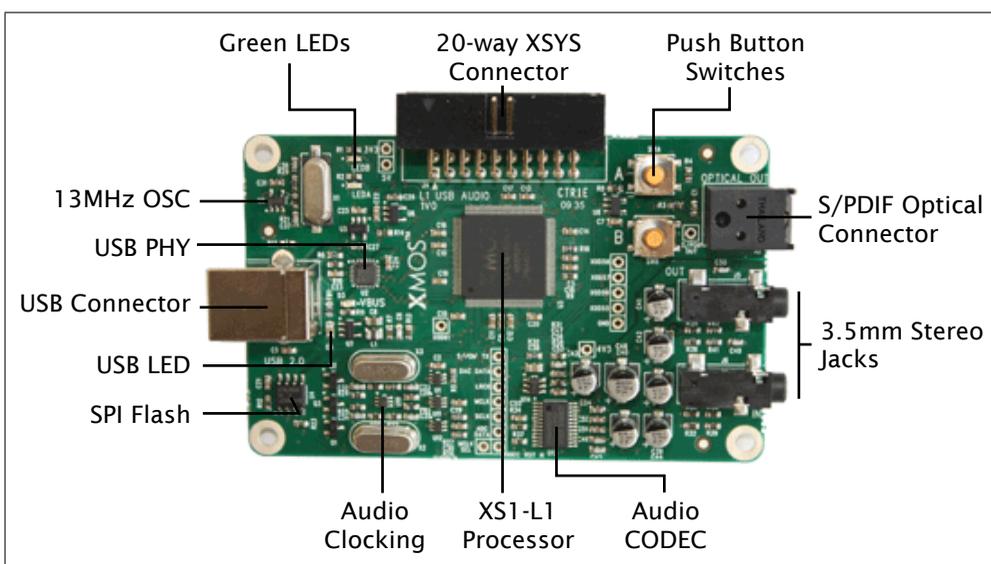
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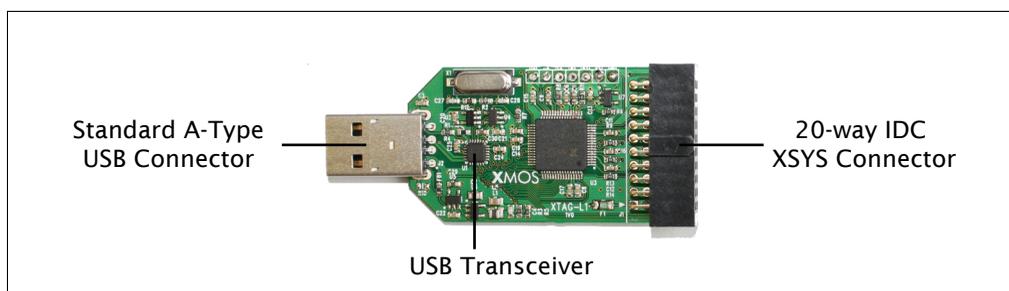
1 Introduction

The USB Audio 2.0 Reference Design (XS1-L1) board is a reference design for production audio products that need to implement USB Audio Class 2.0. The board is available with a software framework that provides USB High Speed and Audio Class 2.0, with options to add additional audio processing, interfaces and peripherals.

The development board, which is powered directly from the USB connection, comprises a single XS1-L1 device, 1Mbit SPI FLASH memory, a 24-bit 192kHz stereo CODEC, USB Standard A Type connector, In/Out 3.5mm stereo jacks and an optical S/PDIF connector. Two LEDs and two push-button switches are provided.



An XTAG-2 debug adapter can be connected to the development board to provide a JTAG interface from your development system. To program the board you need to download a set of free Design Tools from the X MOS website.



2 Playing audio using the board



The USB Audio 2.0 Reference Design board requires a USB Audio 2.0 class compliant driver available on the host. This functionality is built into Mac OS 10.6 or later. For Windows driver availability, please contact your local sales representative: <http://www.xmos.com/products/distributors>.

1. Connect the board to your USB Audio 2.0 compliant host computer using a high speed USB 2.0 cable.
The USB LED on the USB Audio 2.0 card is lit when the device is correctly connected.
2. Connect your audio output device (speakers or headphones) to the 3.5mm stereo jacks or optical S/PDIF connector on the board.
3. In your audio application, select the USB Audio 2.0 device.
4. Start playing and recording.

3 Programming the board

The XTAG-2 debug adapter supplied with the kit can be connected to the board to provide a JTAG interface from your development system that you can use to load and debug software. You need to install a set of drivers for the XTAG-2 debug adapter and download a set of free Design Tools from the XMOS website (version 9.9 or later).

3.1 Mac OSX Users

1. Connect the board to your system

- Connect the 20-way IDC header on the XTAG-2 to the XSYS connector on the board.
- Plug the XTAG-2 into your development system.
The board starts up and flashes the LEDs on the card.

2. Download and install the tools

- Go to: <http://www.xmos.com/downloads> and download the Design Tools.
- Double-click the downloaded DMG file to open it, and then drag the XMOS icon into your Applications folder.
- When the tools have been installed, eject the DMG file (CMD+E) and drag it to the Trash to delete it.

3. Start the tools

- Run the *XDE.app* file from *Finder* (in the installation directory) to start the Design Tools.
- Click OK when prompted to select a workspace.

You are now ready to import the USB Audio 2.0 Reference Design Software. See Section 4.

3.2 Windows Users

1. Connect the board to your system

- Connect the 20-way IDC header on the XTAG-2 to the XSYS connector on the board.
- Plug the XTAG-2 into your development system.
- Click **No** when the *New Hardware* prompt is displayed on screen asking you to connect to Windows Update.
- Click **Next** .
- Select *Install from list* and then click **Advanced** .
- Browse to the drivers installation directory (default *Program Files/XMOS/Desktop Tools/version/drivers/xtag2*) and select the XTAG-2 file.
- Click **Next** and follow the instructions on screen.
- Click **Finish** to complete the driver installation.

2. Download and install the tools

- Go to: <http://www.xmos.com/downloads> and download the Tools.
- Run the Windows Installer to install the tools. Follow the instructions on screen.

3. Start the tools

- Select **Start ▶ Programs ▶ XMOS ▶ Desktop Tools ▶ version ▶ XMOS Development Environment** to start the Tools.
- Click **OK** when prompted to select a workspace.

You are now ready to import the USB Audio 2.0 Reference Design Software. See Section 4.

4 The USB Audio 2.0 Reference Design Software

The USB Audio 2.0 Reference Design software is available from XMOS. Please contact your local sales representative for further details:

<http://www.xmos.com/products/distributors>

The software is distributed as an Eclipse archive that you can import into the XDE.

1. Import the software

- Start the Tools and select a workspace.
- Choose **File ► Import**.
- Double-click the **General** folder, select the **Existing Projects into Workspace** option and click **Next** .
- Double-click the **General** option, select **Existing Projects into Workspace** and click **Next** . (Do not select the **Archive File** option as this results in different behaviour.)
- Browse to the USB Audio 2.0 Reference Design Software archive (ZIP file) and click **Open** to import the source code.

2. Build and run the source code on the board

- Click the **Build** button to compile the project.
- Click the **Run** button to load the compiled project onto the attached board.

Further details on how to build the project, load it onto the board and debug the code is contained in the [XMOS Tools User Guide](#).

5 Next Steps

Further information on using the board and Tools is available from:

www.xmos.com/usbaudio2

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