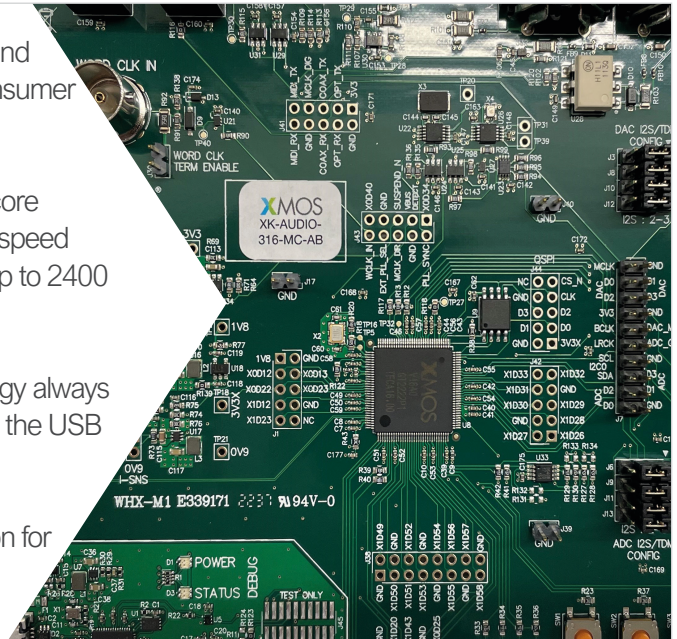# XCORE®.AI
MULTICHANNEL AUDIO PLATFORM

The xcore.ai multichannel audio platform provides a scalable and flexible hardware and software solution for a wide range of consumer and professional audio products.

The multichannel audio platform is based on an xcore.ai multicore controller; the XU316-1024-TQ128-C24, and includes a high-speed USB 2.0 PHY, flexible GPIO and 16 logical cores that deliver up to 2400 MIPS of deterministic processing power.

The guaranteed Hardware-Response™ time of xcore technology always ensures lowest latency bit perfect audio streaming to and from the USB host.

The XMOS XTC development tools enable quick customisation for product differentiating features.

FEATURE HIGHLIGHTS

USB COMPLIANT

High-speed USB 2.0 compliant device with low loopback latency.

BIT-PERFECT AUDIO TRANSFER

USB Audio Class 2.0 compliant. High resolution audio playback delivered through PCM up to 192kHz, 32 bits. Flexible clocking architecture supports multiple synchronisation configurations and low jitter, high quality audio capture and playback.

RAPID DEVELOPMENT

Source code reference software and integrated suite of development tools mean royalty-free deployment and a fast time to market.

FLEXIBLE I/O

Simultaneous multi-channel playback and record from host interface with support for over 8 channels.

Flexible, deterministic and responsive processing power, easily customisable to meet specific product requirements.
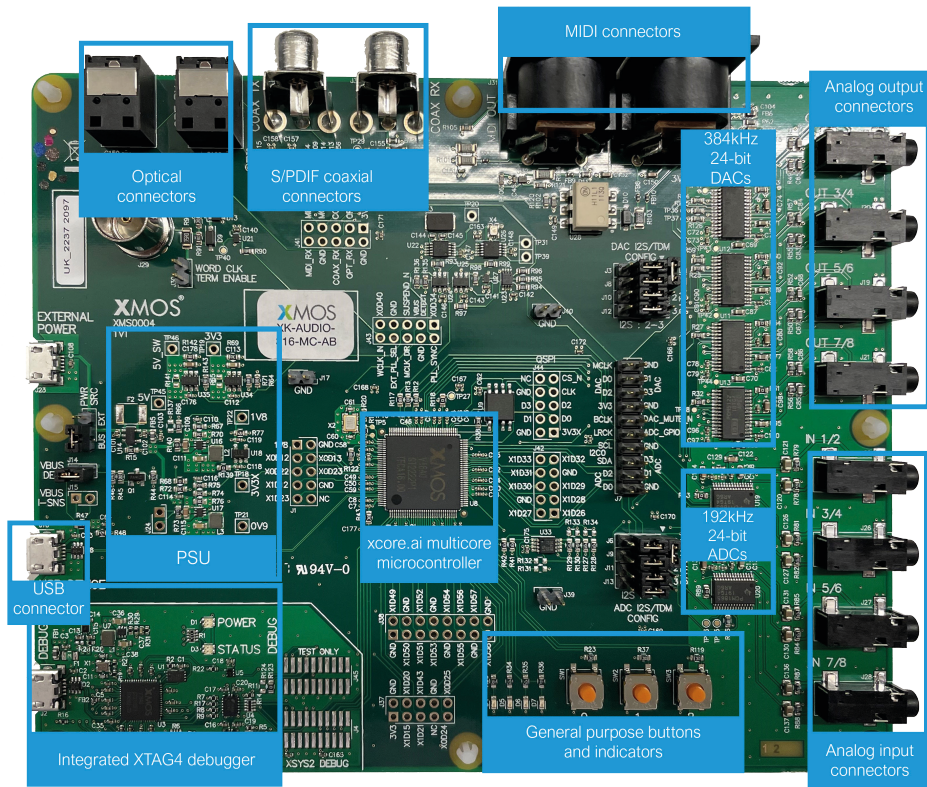
XK-AUDIO-316-MC-AB

Supports MacOS, Android and Windows

Bus-powered or self-powered

PCM up to 192kHz at 16, 24 or 32 bits

XMOS
Bringing technology to life

UNDERSTANDING THE BOARD

MIDI connectors

Optical connectors

S/PDIF coaxial connectors

Analog output connectors

384kHz 24-bit DACs

EXTERNAL POWER

USB connector

PSU

xcore.ai multicore microcontroller

192kHz 24-bit ADCs

Integrated XTAG4 debugger

General purpose buttons and indicators

Analog input connectors

XCORE.AI MULTICHANNEL AUDIO PLATFORM KIT

Available with royalty-free source code, the reference software provides a fully featured production ready solution, including support for: full and high-speed USB operation, USB Audio Class 2.0 & 1.0, MIDI, HID & DFU classes.

The board integrates four Texas Instruments PCM5122 stereo audio DACs and two Texas Instruments PCM 1865 quad channel audio ADCs along with two IEC60958 consumer mode inputs and outputs for electrical (S/PDIF) and optical interfacing and supports MIDI In and Out ports. Integrated XTAG4 enables debug with JTAG and XSCOPE.
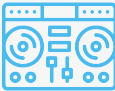
APPLICATIONS

PRO AUDIO

SPEAKERS

AMPLIFIERS

MIXING CONSOLES

AUDIO INTERFACES

CONSUMER/PROSUMER

DJ CONTROLLERS

MUSICAL INSTRUMENTS

HEADPHONE AMPS

AUDIO INTERFACES (DAC)

SILICON	DEV KIT
XU316-1024-TQ128-C24	XK-AUDIO-316-MC-AB

XMOS

Bringing technology to life

For further information, please visit xmos.ai /usb-multichannel-audio/