xCORE-200 Multichannel Audio Platform

DEVELOPMENT PLATFORM FOR USB AUDIO AND NETWORKED AUDIO DESIGNS

FEATURES

Audio

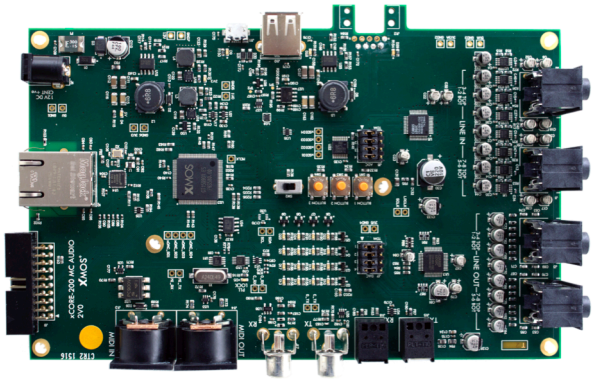
- Up to 32 in / 32 out channels via TDM
- 16 x 16 channel mixer
- 8-channel analog input and output
- S/PDIF optical/coaxial input and output
- ADAT input and output
- MIDI input and output
- Supported sample rates
  - PCM ≤192kHz at 16, 24 or 32bits
  - Native DSD64 and DSD128

USB

- High Speed USB device
  - USB Audio Class 2.0 device
    Optional Audio Class 1.0 fall-back
  - Low loopback latency: 3 ms
  - Self-powered or bus-powered
- Bit perfect USB audio transfer
  - Asynchronous Isochronous from/to host
  - DoP64 and DoP128
  - Local crystal low-jitter audio clocking
- Multiple OS support:
  - Windows
  - Mac OS X
  - Android

Network

- Gigabit Ethernet connectivity:
  Simultaneous talker & listener
- AVnu certified AVB endpoint
  - Time synchronization: 802.1AS
  - Traffic shaping: 802.1Qav
  - Bandwidth reservation: 802.1Qat
  - Media transport: IEEE 1722
  - Discovery and management: 1722.1
- Bit perfect network audio transfer
  - PLL recovery of AVB clock
- OS support:
  - Mac OS X



The xCORE-200 Multichannel Audio Platform and XMOS reference software provide a scalable and flexible solution for a wide range of consumer and professional audio products.

The Multichannel Audio Platform is based on an xCORE-200 multicore microcontroller; the XE216-512-TQ128 includes a High Speed USB 2.0 PHY, RGMII Interface, high speed flexible GPIO and 16 logical cores that deliver up to 2000 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 or Ethernet network.

Delivered as source code, the reference software provides fully featured production ready solutions for USB Audio 2.0 and Ethernet AVB products.

The highly configurable xCORE technology delivers very high levels of product differentiation, and fastest time to market.

The XMOS xTIMEcomposer™ development tools provide a feature-rich software development environment with quick and easy customization of the reference software for customer specific, product differentiating features.

TARGET APPLICATIONS

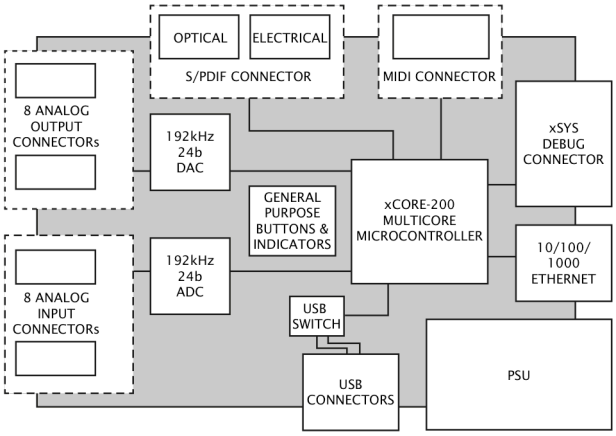
Pro Audio

- Speakers
- Amplifiers
- Mixing Consoles
- Audio Interfaces

Consumer/Prosumer

- DJ Controllers
- Headphone Amplifiers
- Audio Interfaces (DACs)
- Musical instruments
  (Keyboards, Guitars)

xCORE-200 MULTICHANNEL AUDIO PLATFORM BLOCK DIAGRAM



	Feature	Benefit
	High-speed USB 2.0 device 10/100/1000 Mbps Ethernet connection	Plug-and-play operation Bus- or self-powered
	USB Audio Class 2.0 compliant AVB standard compliant endpoint	Driverless operation with Mac OS X[1], and Android[2] Multiple driver vendors for Windows[3] AVnu plugfest proven interoperability with other vendors
Hi-Res AUDIO	PCM up to 384kHz[4] 32bits[5] DSD up to x128 DoP (DSD over PCM) up to x128[6]	High resolution stereo audio playback
	8-channel streaming to & from host	Simultaneous quad stereo record and playback
	Local clocking Asynchronous USB audio transfer PLL network clock recovery	Low jitter, high quality audio capture and playback
	Powered by xCORE-200 multicore microcontroller	Flexible, deterministic and responsive processing power Lowest audio round trip latency
	Flexible hardware & software platform	Predefined feature set reference software Easily customisable to meet specific product requirements
xTIMEcomposer	Source code reference software Integrated development tools suite	Rapid development and code reuse Royalty-free deployment Fast time to market

1: Mac OS X v10.6.4 and later provides native USB Audio Class 2.0 support.
2: Requires that Android device is USB host with USB Audio Class support. Tested against: Samsung Galaxy S3, S4, Note, Sony Xperia Z1, HTC One.
3: USB Audio Class 2.0 support under Windows requires a 3rd party driver.
4, 5: Software capable of 384 kHz.
6: Mac OS X v10.6.4 and later provides native USB Audio Class 2.0 support.

ORDERING INFORMATION

For a list of XMOS distributors, please visit www.xmos.com/support/distributors.

Part number	Contents
XK-AUDIO-216-MC-AB	XE216 board: XK-AUDIO-216-MC-AB xTAG debugger: XA-XTAG 12V PSU, USB cable, Ethernet cable