



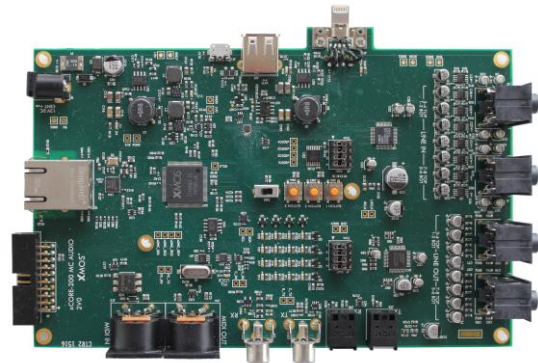
xCORE-200 MULTICHANNEL AUDIO PLATFORM

Audio development platform for USB (PC, OS X, iOS, Android) and networked audio designs

FEATURES

- **USB compliant device**
 - USB Audio Class 2.0 device
Optional Audio Class 1.0 fall-back
 - Low loopback latency: 3 ms
 - Self-powered (with Apple charging) or bus-powered
- **Bit perfect USB audio transfer**
 - Asynchronous Isochronous from/to host
 - PCM \leq 384kHz at 16, 24 or 32bits
 - Native DSD64 and DSD128
 - DoP64 and DoP128
 - Local crystal low-jitter audio clocking
- **AVB standards compliant**
 - 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
- **10/100/1000Mbit Ethernet connectivity**
 - Simultaneous talker and listener
- **Flexible I/O**
 - Up to 32 in / 32 out channels via TDM
 - 8-channel analog input and output
 - S/PDIF optical/coaxial optical input and output
 - ADAT input and output
 - MIDI input and output
 - 16 x 16 channel mixer
- **Multiple OS support:**
 - Windows
 - Mac OSX
 - Apple iOS^{1,2}
 - Android

1. Apple Device Mode, with Role Switch to Apple Host Mode
2. Apple Host Mode via Lightning connector



The xCORE-200 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-200 multicore microcontroller; the XE216-512-TQ128 includes an integrated 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.

Delivered as 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, Apple Device Mode with Role Switch to Host Mode operation and Apple Host Mode directly, as well as fully compliant Ethernet AVB products.

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.

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 for customer specific, product differentiating features.

TARGET APPLICATIONS

Pro Audio

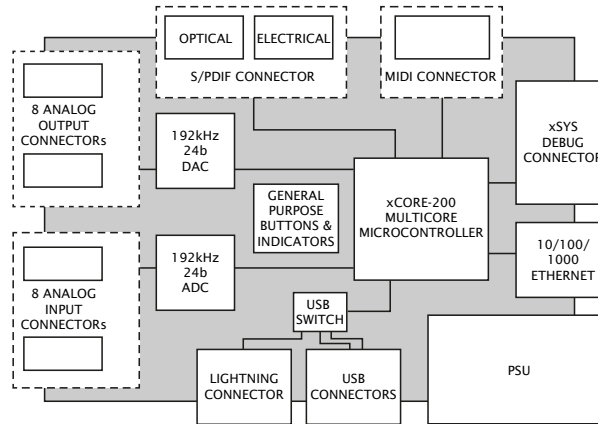
- Speakers
- Amplifiers
- Mixing Consoles
- Audio Interfaces

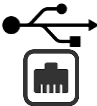







Consumer/Prosumer

- DJ Controllers
- Headphone Amplifiers
- Audio Interfaces (DACs)
- iOS Accessories
- Musical instruments



xCORE-200 MULTICHANNEL AUDIO PLATFORM BLOCK DIAGRAM



	Feature	Benefit
	Full-speed USB embedded host ¹ High-speed USB 2.0 device 10/100/1000 Mbps Ethernet connection	Plug-and-play operation USB-A connector for Apple devices ² with 2.4A charging USB-B connector for PC, Mac and Android hosts Lightning connector for Apple devices ⁴ with 2.4A charging
	USB Audio Class 2.0 compliant AVB standard compliant endpoint	Driverless operation with Mac OS X ³ , iOS ⁴ and Android ⁵ Multiple driver vendors for Windows ⁶ AVnu plugfest proven interoperability with other vendors
	PCM up to 384kHz ⁷ 32bits ⁸ DSD up to x128 DoP (DSD over PCM) up to x128 ⁹	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 (<3ms achievable)
	Flexible hardware & software platform	Predefined feature set reference software Easily customisable to meet specific product requirements
	Source code reference software Integrated development tools suite	Rapid development and code reuse Royalty-free deployment Fast time to market

1,2: Apple Device Mode with Role Switch to Host Mode using standard USB-A to Lightning.

3: Mac OS X v10.6.4 and later provides native USB Audio Class 2.0 support.

4: Apple iOS support only available to Apple MFi licensees.

5: Requires that Android device is USB host with USB Audio Class support. Tested against: Samsung Galaxy S3, S4, Note, Sony Xperia Z1, HTC One.

6: USB Audio Class 2.0 support under Windows requires a 3rd party driver.

7, 8, 9: The MFA reference software supports PCM audio up to 384kHz at 16, 24 or 32bits. The MFA hardware (ADC & DAC) supports 24bit PCM audio at up to 192kHz. Support for 384kHz PCM, 32bit PCM and DoP128 is therefore disabled in the reference software by default

ORDERING INFORMATION

Available to order from mfi.avnet.com.

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

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Third party trademarks are hereby acknowledged.
This is a preliminary product brief, contents are subject to change.

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