

CX20701

Audio Cross Mixer IC

The CX20701 is a cost-effective device in the new Audio Cross Mixer IC category. The device integrates audio I/Os, CODEC, and SRC in a single package, offering the product designer unparalleled flexibility and simplicity to merge, mux, and convert audio signals from both analog and digital domains with simple register control via I²C, SPI, or USB. The CX20701 Evaluation Kit comes with simple-to-use Toolbox software with intuitive views of data path and control parameters.

The device features one 4-wire and one 5-wire digital audio interface that can be mixed or multiplexed to support dual bi-directional I²S, Pulse Code Modulation (PCM) with independent sampling rates. The digital audio interfaces can also be re-tasked to support S/PDIF-out, S/PDIF-in, single bit stream PDM input for digital microphones. The device is controlled and configured by both read and write capability through I²C and the Serial Peripheral Interface (SPI), and USB2.0 interface.

The device integrates high-performance, 102 dB SNR, 24-bit DACs, ground referenced Capless headphone driver, and single-ended/differential line-output. The analog input paths feature high-performance 24-bit ADCs supporting stereo microphones and stereo line-inputs. Different audio sampling rates ranging from 8 kHz to 96 kHz are generated directly from the master clock without the need for an external PLL. An additional Master Clock output is available to drive external CODEC in slave mode.

The CX20701 eliminates the need for a multiple-chip reference design, making it easy and economical for manufacturers to design a differentiated audio product with simplicity and turnkey solution.

The device is packaged in an environmentally-friendly, RoHS/Green-compliant 76-pin QFN (Quad Flat No leads) package.

Applications

- ◆ Gaming Audio Peripherals
- ◆ Music Instrument Mixer/Amplifiers System
- ◆ Embedded Audio System

Part Number CX20701

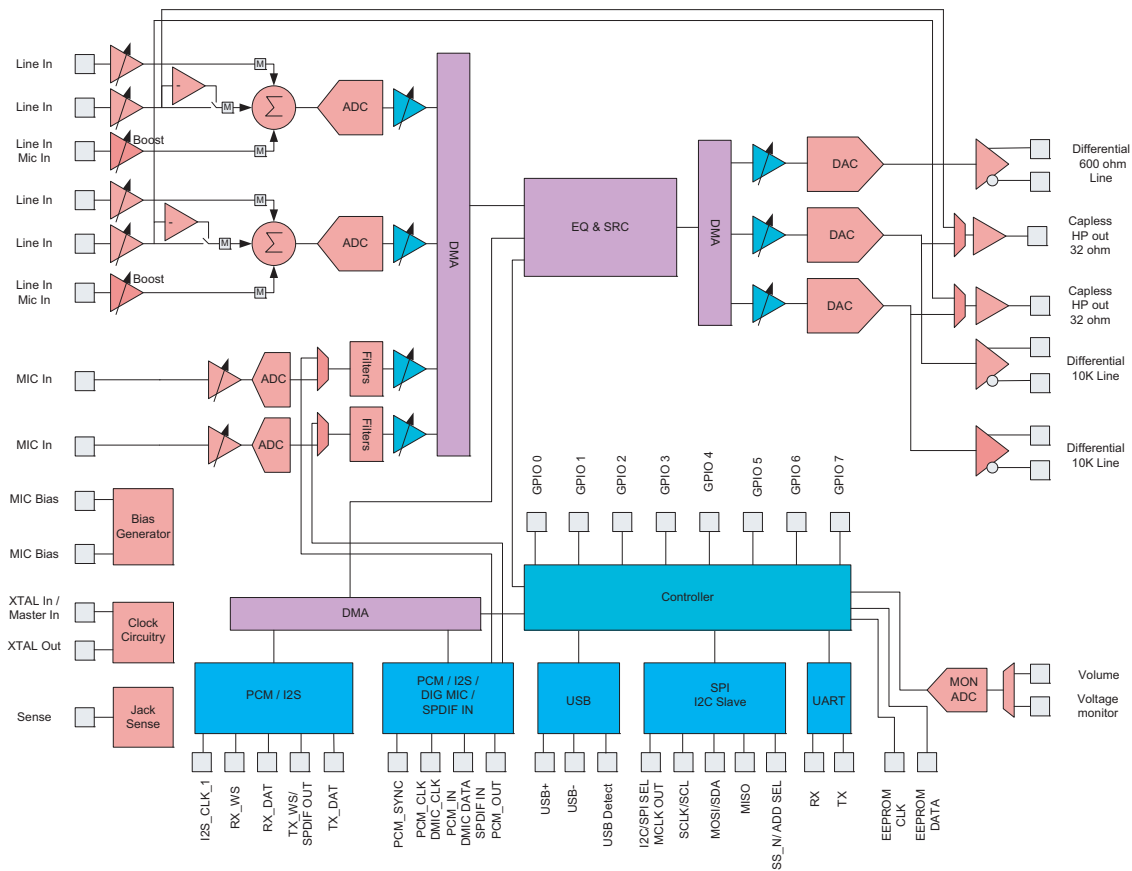
Description CX20701Audio Cross Mixer IC with I²S, Line In/Out, USB, SPDIF In, Digital Mic, and HeadPhone Driver

Key Features	Benefits
I ² S, Line In/Out, S/PDIF, USB	Generous IO for maximum data routing flexibility
DAC, ADC, Headphone driver and Microphone preamp	Integrated CODEC and amplifiers for cost and space saving
Toolbox Software	Easy to configure and set up the hardware. Intuitive data path views.

Part Number	Order Number	Package	Description
CX20701-21Z	DSAC-L701-21CH	76 QFN	Ordering Option
CX20701-EVK	CX20701-EVK		Evaluation Kit
All devices are lead-free (Pb Free) and RoHS compliant			

CX20701 Features

- ◆ 4-wire and 5-wire digital audio I/O (I²S/PCM/SPDIF), supporting full duplex independent sampling rates
- ◆ One 3-wire I²C or 4-wire SPI slave interface for external MCU
- ◆ USB 2.0 Compliant Audio Class Interface
- ◆ Eight GPIO pins
- ◆ Three single-ended line in (convertible to one stereo differential line in and one single-end)
- ◆ Up to four microphone inputs with integrated preamp and on-chip bias supply
- ◆ Integrated 50 mW Capless headphone driver with jack sense
- ◆ Analog In to Headphone direct pass-through
- ◆ Differential line out
- ◆ 24-bit DAC/ADC, SNR 102 dB, THD - 92 dB at 48 kHz 3.3 V
- ◆ Audio sample rate: 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, 48, 64, 88.2, 96 kHz
- ◆ 90 dB dynamic range with 0.01percent THD+N at 4 Ω load
- ◆ 10-bit ADC multiplexed to support analog volume potentiometer and DC level detection
- ◆ Flexible power management
- ◆ Variable master clock rates
- ◆ Master clock output



Functional Block Diagram

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www.conexant.com
 General Information:
 U.S. and Canada:
 (888) 855-4562
 International:
 1+ (949) 483-3000
 Headquarters
 4000 MacArthur Blvd.
 Newport Beach, CA 92660

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