EDN INNOVATION Honoring Excellence in Electronics FINALIST 2009

GOLDEN MOUSETRAP Best New Products AWARDS FINALIST 2010

CONEXANT

Dolby® Headphone Reference Design

Cost-effective dual-chip solution enables superior audio and voice quality

Solution based on Conexant's CX20702 and Freescale's DSP56371

Conexant Systems, Inc. and Freescale Semiconductor have jointly developed this Dolby headphone reference design that supports Dolby's headphone surround sound algorithm. This reference design is a high performance and cost-effective two-chip solution featuring Conexant's CX20702 Speakers-on-a-Chip with On-chip Voice/Audio Digital Signal Processor (DSP) and Integrated Codec device and Freescale's DSP56371 24-bit Audio Digital Signal Processor chip. The combination delivers a unique premium headset for multiple gaming consoles, including Xbox, PS3™, and PC.

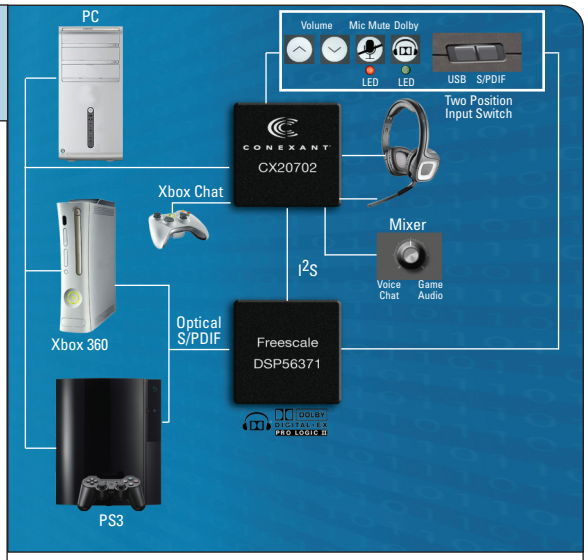
Conexant's CX20702's device is part of an award-wining product family and is a highly integrated audio codec with voice enhancement with USB, I^2S, I^2C, analog I/O, and headphone drivers. The on-chip DSP controller handles the game audio and voice communication mixer ratio control. The DSP runs an innovative suite of Conexant proprietary voice and audio post-processing effects that dramatically improves sound quality. Key audio innovations include Subband Acoustic Echo Cancellation, Dynamic Range Control, advanced In-band Microphone Noise Reduction, Stereo Beam-forming, Equalizer, Digital Crossover, 3D Phantom Speakers, and 3D Immersion. GPIO controls such as headphone volume control and microphone mute functions are also included. The embedded SPoC Configuration Toolbox allows for fast configuration and performance optimization.

Freescale's DSP56371 device contains the Dolby processing IP. The DSP56371 uses less than half of the DSP's computing capability with its higher core frequency, larger amount of on-chip static random access memory, and enhanced filter coprocessor.

The combination of the CX20702 and DSP56371 chips provide audio manufacturers with the perfect solution for Dolby headphones. A complete evaluation kit with reference schematics and all the necessary documents and software is provided by Conexant to customers.

Feature Comparison

Feature	Xbox 360	PS3	PC
Game and System Audio	Console S/PDIF out	Console S/PDIF out	USB
Voice Chat	2.5mm jack on controller	USB	USB
Power	USB	USB	USB



Distinguishing Features

- Single headset support both XBOX 360, PS3, and PC
- Freescale DSP to support Dolby headphone and DTS® effects
- High quality digital game audio via S/PDIF
- Configurable on-chip voice processor using TIA-920 grade AEC
- Game audio and voice chat mixer control
- Simplified cabling for ease of use
- USB powered without need for external power

© 2010 Conexant Systems, Inc. All Rights Reserved. Conexant and the Conexant logo are registered trademarks of Conexant Systems, Inc. All other trademarks are owned by their respective owners. Although Conexant strives for accuracy in all its publications, this material may contain errors or omissions and is subject to change without notice. **THIS MATERIAL IS PROVIDED AS IS AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.** Conexant shall not be liable for any special, indirect, incidental or consequential damages as a result of its use.

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

Doc# RED-202715

Part Number

Description Dolby Headphone Reference Design