CX20873 Dolby Headphone Decoder IC

Features

- High Speed USB2.0 Device, supporting up to eight endpoint
- Quad Digital microphone PDM interface
- SPDIF Transmitter and SPDIF receiver
- Full duplex stereo I^2S/PCM
- Six 32-bit timers/counters
- Serial peripheral interface (SPI) Master and Slave
- Inter-Integrated Circuit (I^2C) Master and Slave
- 1 UART interface
- Dedicated peripheral and memory-to-memory DMAs
- Interrupt controller
- 13 FlexIOs fully programmable through PIC processor
- 2 sets of Tri-color PWM LED drivers
- 6 dedicated general-purpose I/Os (GPIOs),
- Debug/JTAG interface and On chip logic analyzer
- On-chip programmable PLLs
- Advanced power management allowing USB suspend mode to meet 2.3 mA using off chip converter 5V/3.3 V
- Package 116p Dual Row QFN

Firmware Features

- Conexant proprietary algorithms available for voice and audio processing
- Supports integration of 3rd party algorithms e.g. Dolby Digital Plus decoder, Dolby Headphone, Dolby Prologic, Speech Recognition and Synthesis

Applications

USB Headset, USB Headphones, Docks & SoundBar, Gaming Consoles, DVD players, Automotive, DSP off load applications in Ultrabooks, Ultrathins, and more

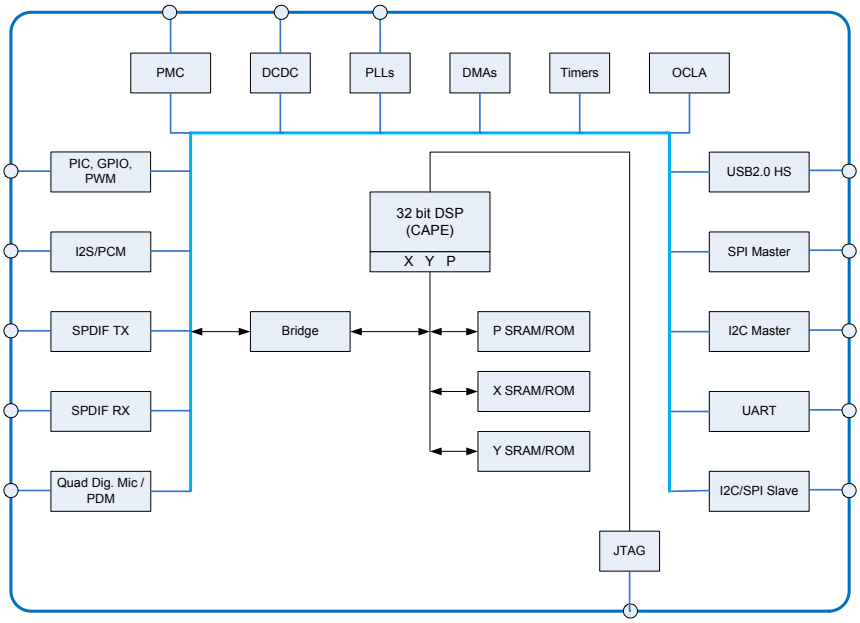
Overview

The CX20873 device family from Conexant provides a turnkey Dolby Headphone and Headset solution for customers. Conexant provides optimized implementation of Dolby Digital Plus Decoder, Dolby Headphone, and Dolby Prologic II algorithms (royalties applicable).

Dolby Headphone technology allows users to simulate a highly realistic 5.1/7.1 surround sound listening environment from stereo transducer headphones. CX20873 allows users to combines Dolby Headphone technology with either Pro Logic IIx or Pro Logic IIz processing while simultaneously decoding multi-channel encoded streams received from an external source over SPDIF or a USB 2.0 interface.

CX20873 provides a similar turnkey solution for headset customers and includes Conexant Voice Processing Algorithms coupled with the Dolby algorithms. The Conexant VPA offers advanced in-band microphone noise reduction, 3D sound effects, sub-band Acoustic Echo Cancellation, and Automatic Gain Control features. A Configuration Toolbox allows for fast configuration of the various signal processing algorithms and optimizes performance.

Block Diagram



Part Number CX20873

Description Dolby Headphone Decoder IC

Electrical Characteristics

Parameter	Minimum	Nominal	Maximum	Unit	Comments
1.0 V Supply Voltage	-0.4		1.02	V	VDD, PSUP_1V0, VDD_SW
1.8 V Supply Voltage	-0.4		1.98	V	VDDO_1, VDDO_3, VDDO_4. VDDO_5, VDDO_6, VDDO_7
3.3 Supply Voltage	-0.4		3.60	V	VDDA3V3, VDDO_1, VDDO_3, VDDO_4,VDDO_5, VDDO_6, VDDO_7, PSUP3V3
Storage Temperature Range	-40		150	^{o}C	Non-operating temperature
Operating Temperature Range	-40		85	^{o}C	
Temperature	-40	27	125	^{o}C	Junction temperature

Ordering Guide

Ordering Number	Part Number	Descriptin	Package
TBD	CX20873-11z	Dolby Headset Decoder IC	9x9 mm^2 DRQFN

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