

Conexant Introduces New Low-Power, High-Definition Audio Codecs for Mobile Applications

Conexant Systems Inc., a leading supplier of innovative semiconductor solutions for imaging, audio, embedded modem, and video surveillance applications, today announced the CX20752 and CX20754 – two low-power, HD audio codecs aimed at delivering high-quality audio for the mobile PC market, including notebooks, ultrabooks and tablets.

Compliant with Intel's high-definition audio specification 1.1, the CX20752 and CX20754 have audio fidelity exceeding Microsoft WLP 4.0 desktop and notebook premium logo requirements. With two 24-bits stereo DACs operating at sampling frequencies up to 192 kHz and two 24-bits stereo ADCs operating at sampling frequencies up to 96 kHz, both codecs can support multi-streaming and real-time communications applications. By combining these hardware features with Conexant's proprietary Voice Processing Algorithms, the new codecs offer ideal solutions for platforms needing Microsoft Lync and Skype certification.

The CX20752 and CX20754 have integrated stereo filter-less class-D amplifier with patented Common Mode Scrambling technology capable of driving 2W-rms per channel at 1% THD+N into 4 ohm load. Devices and speakers are protected with DC detection at the load, high pass filter, short circuit, over current, over temperature protections and more.

Built-in 5-band hardware Equalizer (EQ) and dynamic range compression (DRC) for optimizing speaker loudness without distortion enable a high-quality audio experience from the mobile PC's internal speakers independent of driver and operating system. Lock protection provides speaker and microphone safeguards to prevent disabling from hackers.

The ProCoustic capless headphone driver produces a full-range frequency response and further eliminates external FETS for a supporting headset and headphones. Push button command sensing is included, which enables control of third-party applications directly from the headset, including Skype, Media Player and iTunes. A PDM single-bit stream interface allows for the support of two digital microphones for dual microphone array implementations.

Conexant's PopShield technology suppresses pops and clicks during all transition states, and includes active DC offset removal and an innovative Vref ramping scheme. D3-Live allows external audio devices to play through internal speakers with full speaker frequency response compensation while in system stand-by. This mode offers a loopback from stereo line in to class-D speaker-out including EQ and DRC while HD-Audio BUS is in shut down state. D3-Live is supported with a minimum external BOM cost and does not require extra crystal to clock the chip.

The CX20752 and CX20754 have D-Flex power management that exceeds Intel's ECR 15B requirements to achieve maximum power savings and allows for the powering down of DAC, ADC and amplifiers without pops and clicks. CX20754 has an added I2S audio interface for digital docking I/O expansion, digital audio processing, or digital amplifier with external audio devices.

"Consumers are relying more and more on mobile PCs for audio critical applications such as gaming, movies and music, and their tastes are shifting from traditional notebooks to ultrabooks and tablets with slim form factors and longer battery life," said Sailesh Chittipeddi, Ph.D., president and chief executive officer for Conexant. "With Conexant's newest HD-audio codecs the CX20752 and the CX20754, audio functions and quality don't need to be sacrificed. Moreover, a low-power, high-definition audio experience is available at a fraction of the system BOM cost of alternative solutions."

Key features include:

- Two pairs of independent DACs and ADCs; supports audio formats ranging from 16-24 bit, 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
- Stereo class-D amplifier providing 2W-rms per channel at 1% THD+N, and up to 2.8W-rms per channel at 10% THD+N into 4 ohm load with Spread Spectrum and Common Mode Scrambling
- ProCoustic capless stereo headphone driver eliminates need for an external amplifier
- Integrated capless headset with auto detect and switch between GND and Mic pins
- Digital microphone PDM interface with boost supporting two digital microphone elements
- I2S input and output interface available on CX20754
- Microphone security control prevents unwanted recordings from any or all input ports
- EQ and playback security control prevents unwanted coefficient loading and playback to speakers
- PopShield enhances pop and click suppression
- Hardware EQ & DRC with D3-Live allows external audio devices to play through internal speakers with full speaker frequency response compensation while in system stand-by
- D-Flex enhanced power management features wake-on-beep
- Compatible with Windows Vista, Windows 7 and the new Windows 8 Operation Systems. ALSA Linux audio driver compatible.
- Compliant with Intel high definition audio specification rev. 1.1
- Package CX20752 40pin 5x5mm QFN
- Package CX20754 48pin 6x6mm QFN

This week at the 2012 International CES in Las Vegas, Conexant will be demonstrating its expansive embedded audio solutions in a variety of end user applications including interactive Smart TV, 3D headsets and tablets.

Pricing for the CX20752 and CX20754 start at \$1.24 and \$1.54, respectively, in 10 K quantities.

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