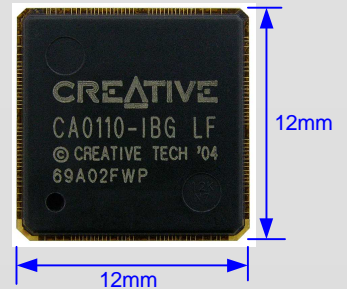


CA0110 Audio Processor "Tina 3"

Overview

The Tina3 is a high quality Creative PCI Express audio processor in HD Audio mode (compliant to Microsoft UAA) available in 0.13µm BGA package size 12mm by 12mm. Integrated with cutting edge technology from Creative experience in PC audio and Sound Blaster X-Fi Xtreme Audio, Tina3 audio processor provides revolutionary entertainment in the personal computer, Sound Card and Audio ExpressCard.

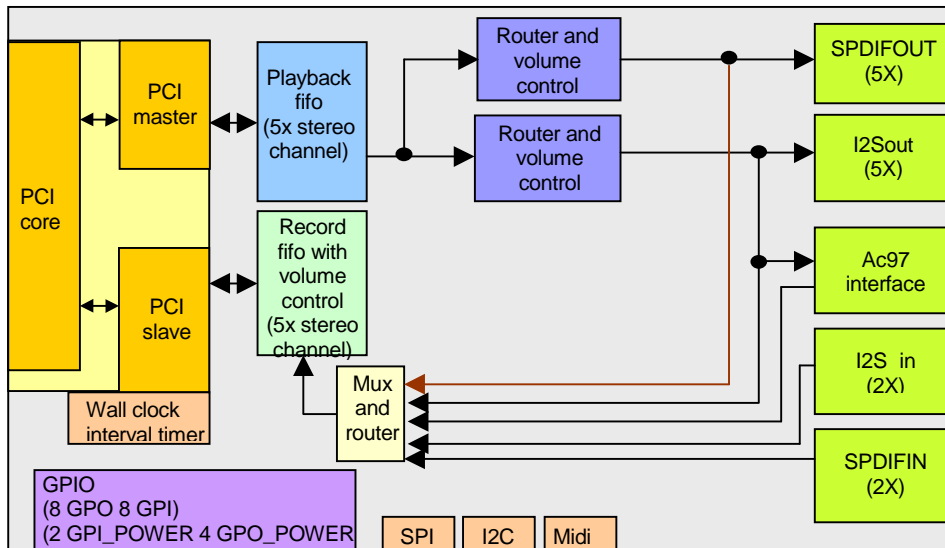
The X-Fi audio enhancement algorithm is integrated into the Tina3 audio processor to extend the X-Fi enjoyment to the customers. As the next generation high-resolution audio processor, Tina3 provides dramatic improvements to enhance listening experiences for movies and improves the capabilities, performance and quality of audio. The enhanced sound quality makes movies more realistic. Users can truly immerse themselves in scenes like underwater, volcano eruption, war zone etc. while enjoying the enhanced sound effect at home. The X-Fi module gives you an experience beyond studio quality. Users can enjoy the live concert experience in their own comfortable surroundings.



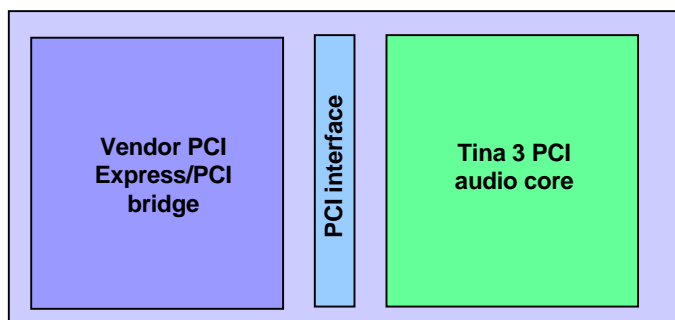
Applications

- ❑ High-quality PCI Express sound card
- ❑ Media Center PC
- ❑ Desktop PC Motherboards
- ❑ Notebook PCs
- ❑ Audio ExpressCard
- ❑ General Purpose multi-channel I/O

Architecture of Tina3 PCI Audio Core



Tina 3 PCI Express Chip



Key Features

- ❑ X-Fi CMSS-3D
- ❑ X-Fi Crystalizer™
- ❑ EAX® 4.0 Advanced HD for games
- ❑ 10 Band Multi-channel Equalizer
- ❑ UAA v1.0 Compliance
- ❑ OpenAL Support
- ❑ Creative ALchemy
- ❑ Vista Premium Logo Compliance



Key Features

- Universal Audio Architecture (UAA) v1.0 compliance in HD Audio mode
- PCI Express to PCI bridge
- PCI specification 2.3 compliant. EEPROM interface to support up to 4Kbytes of EEPROM
- Playback of 5x stereo audio channels of sample rate up to 192 kHz 24/16-bit data, via PCI bus interface (access latency @ 192kHz is 160us)
- Support 3 independent HD DMA channels
- 4 stereo output, 1 stereo HP out and 1 stereo digital channel
- Support Microsoft 'out-of-the-box' HAD driver
- 5 I2S outputs (4x I2S outputs at one sample rate and 1xI2S output supports an independent sample rate)
- I2S out supports 44.1kHz/48kHz/96kHz/192kHz sampling rate
- Single SPDIF output
- 1 Stereo Line In with support in 48kHz/96kHz/192kHz sampling rate
- 1 Stereo Mic In with support in 48kHz/96kHz/192kHz sampling rate
- 2 SPDIF In with support in 44.1kHz/48kHz/96kHz sampling rate
- Router Module
- Volume Control Module
- 2 MIDI UART interface
- 2 Interval timer
- 2 22-bit wall clock counter
- General Purpose I/O Register
- 8 GPO and 8 GPI pins with de-bouncing (default) and 2 GPI_POWER and 4 GPO_POWER
- 1 serial SPI interface
- 2 serial I2C interface

Audio Enhancement

- **X-Fi audio enhancement algorithm**
 - **X-Fi CMSS-3D Surround**
 - Stereo Xpand for stereo to multi-channel upmix with ambient extraction and voice centering
 - Stereo Surround for duplicating of stereo over multi-channel
 - **X-Fi CMSS-3D Headphone Expander** for externalization of stereo content and very accurate HRTF for 3D positioning
 - **X-Fi CMSS-3D Virtual** for audio virtualization and enhancements over 2 loudspeakers. Stereo Surround mode
 - **X-Fi Crystalizer™**
 - Enhances musical dynamics by emphasizing sharp percussive sounds and transients
 - Creating a "puncher" and more dynamic listening experience
- **Highest Quality Audio**
 - 24-bit/96kHz recording
 - 24-bit/96kHz 7.1 playback, 24-bit/192kHz Stereo playback
- **10-Band, Multi-Channel Graphics Equalizer** support presets and custom preset
- **EAX® ADVANCED HD™ 4.0 & 3.0 Technologies**
 - **Multi-Environments™**
 - **EAX ExtendedFX™**
 - **Environment Morphing™**
 - **Environment Filtering™**
 - **Environment Panning™**
 - **Environment Reflections™**
- **OpenAL Support**
- **Creative ALchemy**
Provides multi-channel audio for legacy game titles running on Windows Vista™
- **Creative SoundFont®** and SoundFont® Bank Manager Support

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