

PCM290x Errata

Certain conditions may cause problems for the USB Audio CODEC products.

1 Products

USB Audio CODEC, PCM290X family

PCM2900, PCM2901, PCM2902, PCM2903, PCM2904, PCM2906

2 Problems, Restrictions, Workaround

2.1 1-kHz Noise During Recording

Problems

When using the Alternative setting condition (“0A”, “0B”, “0C”, “0D”, “0E”) for streaming data-in during recording, the data from the ADC is NOT transferred to the USB/PC correctly. This may result in 1-kHz noise on the transferred audio data.

There is a 5% probability that the condition will appear at the start of a recording; however, it depends on the sampling conditions.

Restrictions

The problem occurs with the following conditions:

- “0A” : 16 kHz, 16 bits, Mono
- “0B” : 16 kHz, 8 bits, Stereo
- “0C” : 16 kHz, 8 bits, Mono
- “0D” : 8 kHz, 8 bits, Stereo
- “0E” : 8 kHz, 8 bits, Mono

However, in application software using a standard API and working on a standard Windows™ system, an 8-bit data request from the application software is automatically changed to a sampling condition of 48 kHz, 16 bits, stereo. This process prevents the “8-bit request data” from creating the problem.

So, the setting of “0B” to “0E” as listed above is NOT a problem in an actual Windows™ environment. Only the “0A” (16 kHz, 16 bits, Mono mode) setting creates the noise problem.

Workaround

Since it is not possible to solve this problem by any modification of external circuit, the user must apply the setting other than “0A” to avoid the problem in application software.

TI is considering corrections to solve the problem, and will notify the user when a solution is determined.

2.2 Inter-Channel Phase Difference

Problems

The PCM290X has delay of 1 sample at each channels as follows:

- Up-stream data from ADC, S/PDIF in : Rch data delay (1 sample)
- Down-stream data to DAC, S/PDIF out : Lch data delay (1 sample)

Restrictions

Recording or playback of general audio or S/PDIF In/Out of Linear PCM, makes minimal difference to the listener. However, the critical application for the inter-channel phase difference, data transfer between USB and S/PDIF In/Out, can not be used.

Workaround

If the inter-channel difference is not allowed, the user must solve this problem in the application software. It is not possible to solve this problem by any modification of external circuit.

TI is considering corrections to solve the problem, and will notify the user when a solution is determined.

Take care to note the problems listed in this document when considering the use of these products for new projects.

For further questions, contact to Consumer Audio Products, Product Marketing group at

Telephone : +81-3-4331-2079

Email : audio-jp@list.ti.com

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products

Amplifiers	amplifier.ti.com
Data Converters	dataconverter.ti.com
DSP	dsp.ti.com
Interface	interface.ti.com
Logic	logic.ti.com
Power Mgmt	power.ti.com
Microcontrollers	microcontroller.ti.com
Low Power Wireless	www.ti.com/lpw

Applications

Audio	www.ti.com/audio
Automotive	www.ti.com/automotive
Broadband	www.ti.com/broadband
Digital Control	www.ti.com/digitalcontrol
Military	www.ti.com/military
Optical Networking	www.ti.com/opticalnetwork
Security	www.ti.com/security
Telephony	www.ti.com/telephony
Video & Imaging	www.ti.com/video
Wireless	www.ti.com/wireless

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2007, Texas Instruments Incorporated