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", "0"C", "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.

Windows is a trademark of Microsoft.

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