TEXAS INSTRUMENTS

DEM-PCM2900/2902 EVM

User's Guide

March 2007

Audio Converter Products, Digital Audio

SLEU024A

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EVM WARNINGS AND RESTRICTIONS

It is important to operate this EVM within the input voltage range of 5 V and the output voltage range of 5 V.

Exceeding the specified input range may cause unexpected operation and/or irreversible damage to the EVM. If there are questions concerning the input range, please contact a TI field representative prior to connecting the input power.

Applying loads outside of the specified output range may result in unintended operation and/or possible permanent damage to the EVM. Please consult the EVM User's Guide prior to connecting any load to the EVM output. If there is uncertainty as to the load specification, please contact a TI field representative.

During normal operation, some circuit components may have case temperatures greater than 55°C. The EVM is designed to operate properly with certain components above 55°C as long as the input and output ranges are maintained. These components include but are not limited to linear regulators, switching transistors, pass transistors, and current sense resistors. These types of devices can be identified using the EVM schematic located in the EVM User's Guide. When placing measurement probes near these devices during operation, please be aware that these devices may be very warm to the touch.

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Chapter 1

Description

The DEM-PCM2900 and DEM-PCM2902 are evaluation boards for the newly developed Texas Instruments USB interface codecs, PCM2900 and PCM2902. The DEM-PCM2900 includes a PCM2900. It is a bus-powered USB codec without an S/PDIF interface. The DEM-PCM2902 includes a PCM2902. It is a bus-powered USB codec with an S/PDIF interface.

A USB connector is mounted on DEM-PCM2900/2902. Connecting a USB interface to this connector enables the evaluation of codec performance.

The DEM-PCM2900/2902 is operated by the 5-V bus power supply of the USB. A 3.3-V IC regulator is mounted on the board to provide power for analog circuitry and optionally for the codec.

Stereo audio output and input are available on two stereo minijacks.

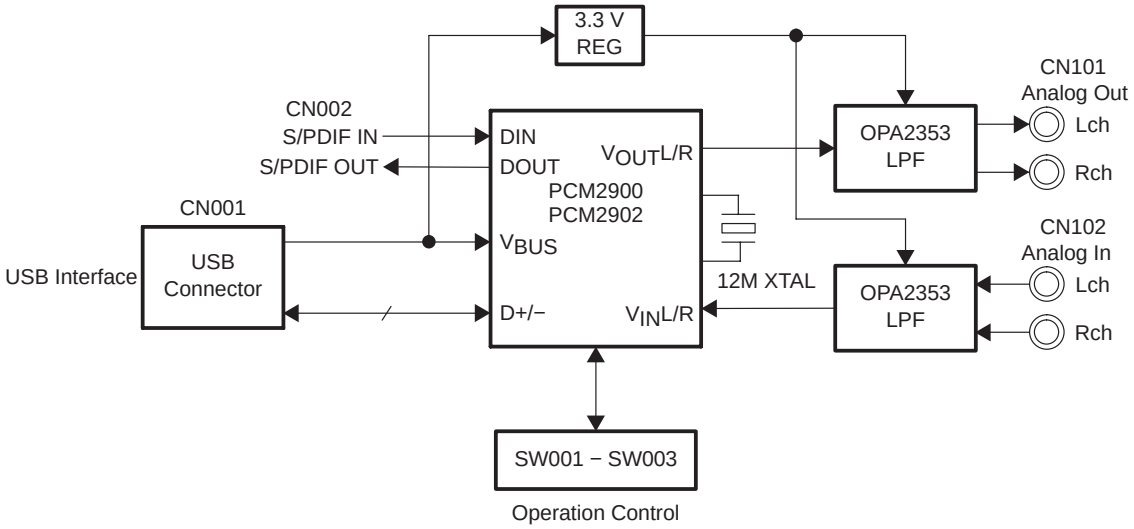
The PCM2900/2902 supports the following USB features:

- ❏ Fully compliant with the USB 1.1 specification
- ❏ Partially programmable descriptors
- ❏ USB adaptive mode for playback
- ❏ USB asynchronous mode for record
- ❏ Bus powered
- ❏ Full-speed transceivers

Topic **Page**

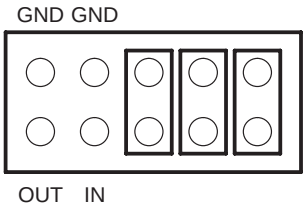
1.1 Block Diagram

Figure 1−1. DEM-PCM2900/2902 Block Diagram



1.2 Connection Setting

- ❏ CN001 : USB port (series B connector), connects to a USB cable/ connector
- ❏ CN101 : Audio LINE OUT (stereo minijack, 1.98 V_{PP} full scale)
- ❏ CN102 : Audio LINE IN (stereo minijack, 1.98 V_{PP} full scale)
- ❏ CN002 : S/PDIF IN/OUT for DEM-PCM2902



1.3 Switch Settings

- ❏ SW001: Human interface devide (HID) key state (mute)
- ❏ SW002: HID key state (volume up)
- ❏ SW003: HID key state (volume down)

These switches should be set to LOW logic level when no HID is being used, or toggled HIGH for HID control of their respective parameters.

Chapter 2

Schematic and Printed-Circuit Board

This chapter presents the DEM-PCM2900/2902 printed-circuit board and schematic.

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2.1 DEM-PCM2900/2902 Printed-Circuit Board

Figure 2−1. DEM-PCM2900/2902 Silkscreen

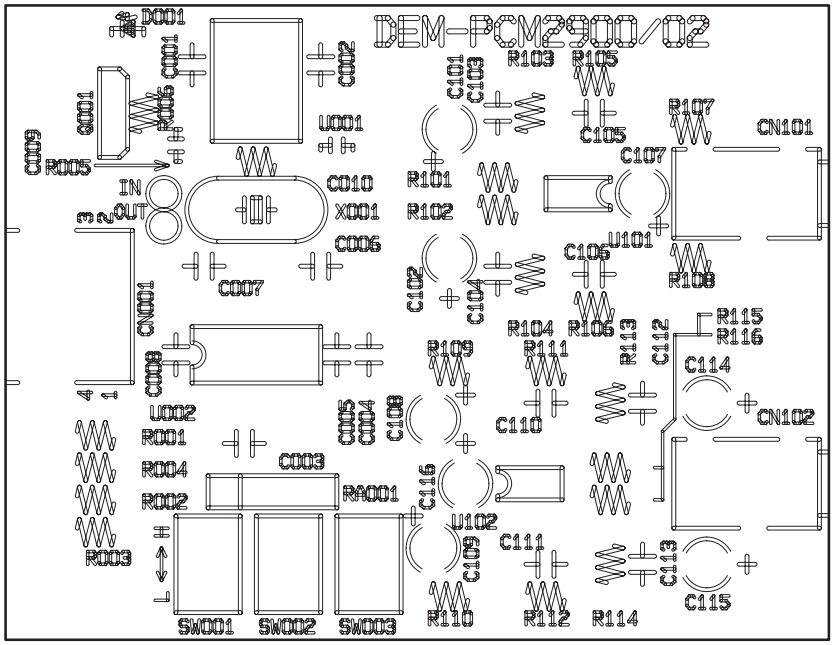


Figure 2−2. DEM-PCM2900/2902 Top View

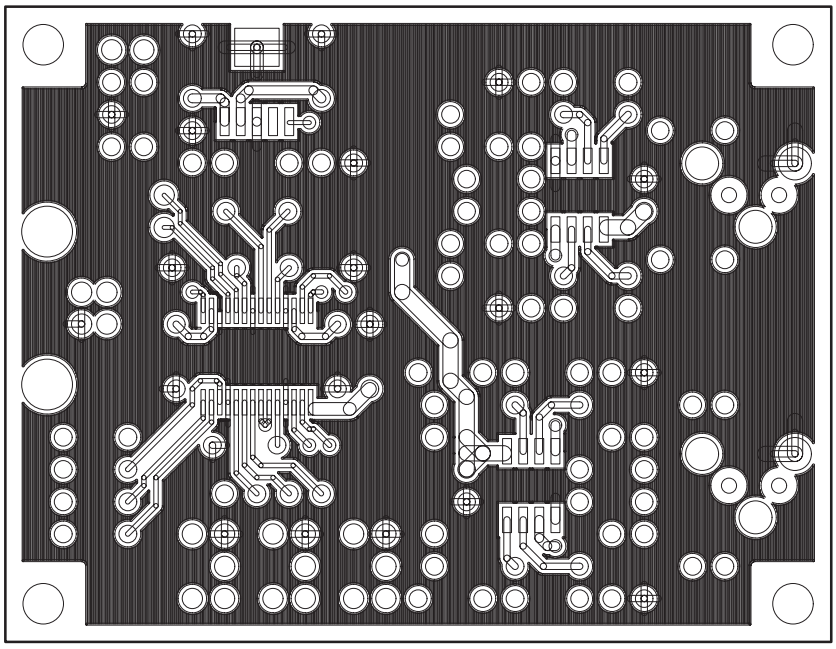
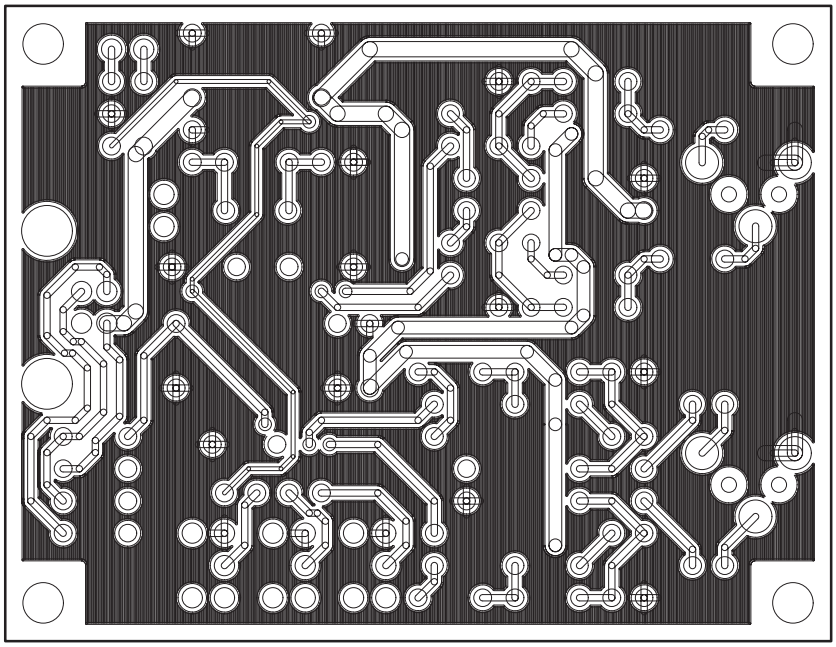


Figure 2−3. DEM-PCM2900/2902 Bottom View



2.2 DEM-PCM2900/2902 Schematic

Figure 2−4. DEM-PCM2900/2902 Schematic