PCM2900C/2902C/2906CEVM-U

User's Guide



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PCM2900C/2902C/2906CEVM-U

1 Description

The PCM2900C/2902C/2906CEVM-U (PCM290xCEVM-U) is an evaluation board for Texas Instruments' newly developed USB interface codecs, the PCM2900C, PCM2902C, and PCM2906C. The PCM2900C includes a PCM2900C device, a bus-powered USB codec without an S/PDIF interface. The PCM2902C includes a PCM2902C device, a bus-powered USB codec with an S/PDIF interface. The PCM2906C includes a PCM2906C device, a bus-powered (500 mA) USB codec with an S/PDIF interface. Each evaluation board also includes operational amplifiers for line input/output buffers, a 3.3-V regulator, and a USB connector.

For information about the differences between the PCM290xCEVM-U and the DEM-PCM290xB-EVM demonstration fixtures, see Application Report SBFA020.

The USB connector is mounted on the PCM2900C/2902C/2906C printed circuit board (PCB). Connecting a USB interface to this USB connector enables the evaluation of codec performance.

The PCM2900C/2902C/2906C operates from 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 mini-jacks.

The PCM2900C/2902B/2906B support the following USB features:

- Fully compliant with USB2.0 specification
- Full-speed transceivers
- Partially-programmable descriptors
- USB adaptive mode for playback
- USB asynchronous mode for record
- Bus-powered
- Full-speed transceivers



Description www.ti.com

1.1 Block Diagram

A block diagram of the PCM2900C/2902C/2906C is shown in Figure 1.

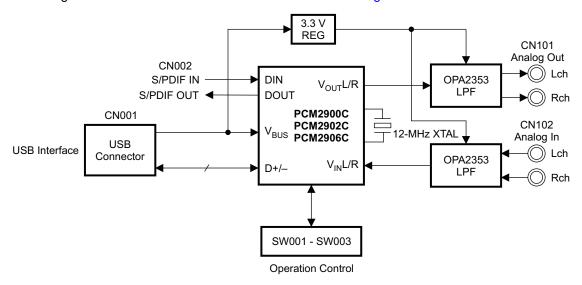


Figure 1. PCM290xCEVM-U Block Diagram

1.2 Connectors and Jumpers

Table 1 summarizes the connectors and jumpers on the PCM290xCEVM-U. Figure 2 illustrates the pinout for CN002.

Table 1. Connectors and Jumpers

Connector/Jumper	Description
CN001	USB port (series B connector); connects to a USB cable/connector
CN101	Audio LINE OUT (stereo mini-jack, 1.98 V _{PP} full-scale)
CN102	Audio LINE IN (stereo mini-jack, 1.98 V _{PP} full-scale)
CN002	S/PDIF IN/OUT for PCM2902C/PCM2906C

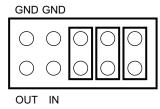


Figure 2. CN002 Pinout

1.3 Switch Settings

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

These switches should be set to logic level low when no HID is being used, or toggled high for HID control of the respective parameters.



www.ti.com Schematic and PCB

2 Schematic and PCB

This section presents the PCM290xCEVM-U PCB layout. A full-size schematic of the evaluation fixture is appended to this user guide.

2.1 PCM290xCEVM-U PCB

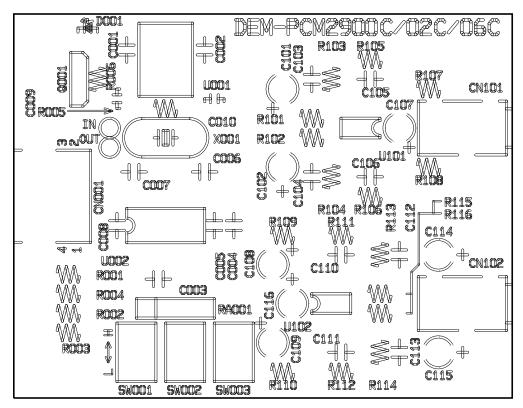


Figure 3. PCM2900CEVM/2902CEVM/2906CEVM-U Silkscreen



Schematic and PCB www.ti.com

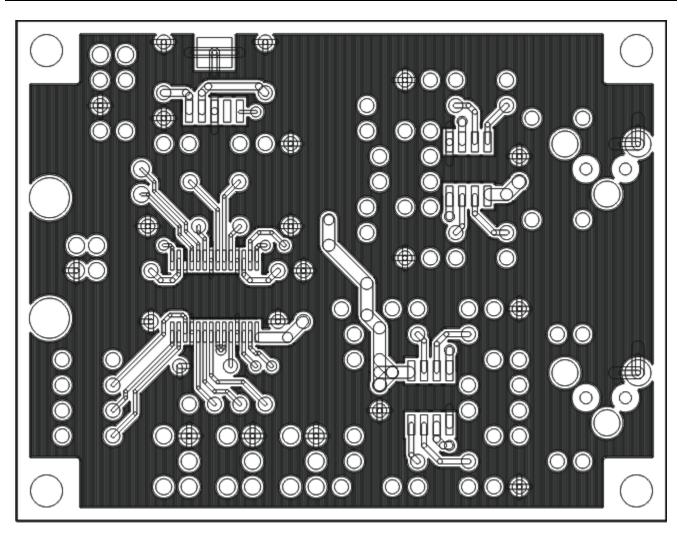


Figure 4. PCM2900CEVM/2902CEVM/2906CEVM-U Top View



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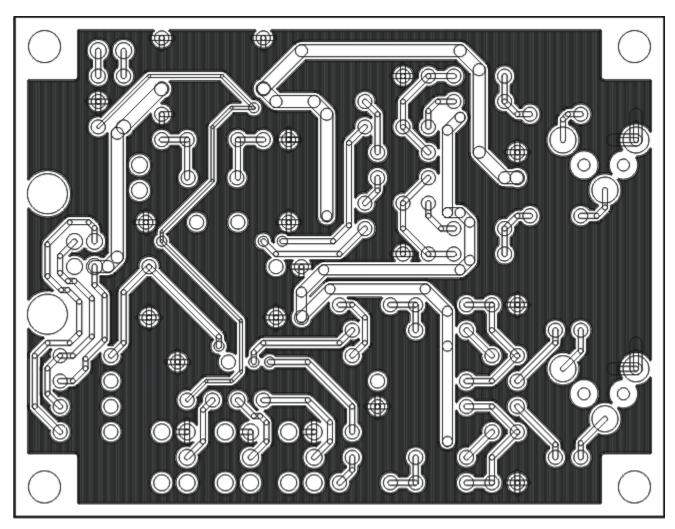
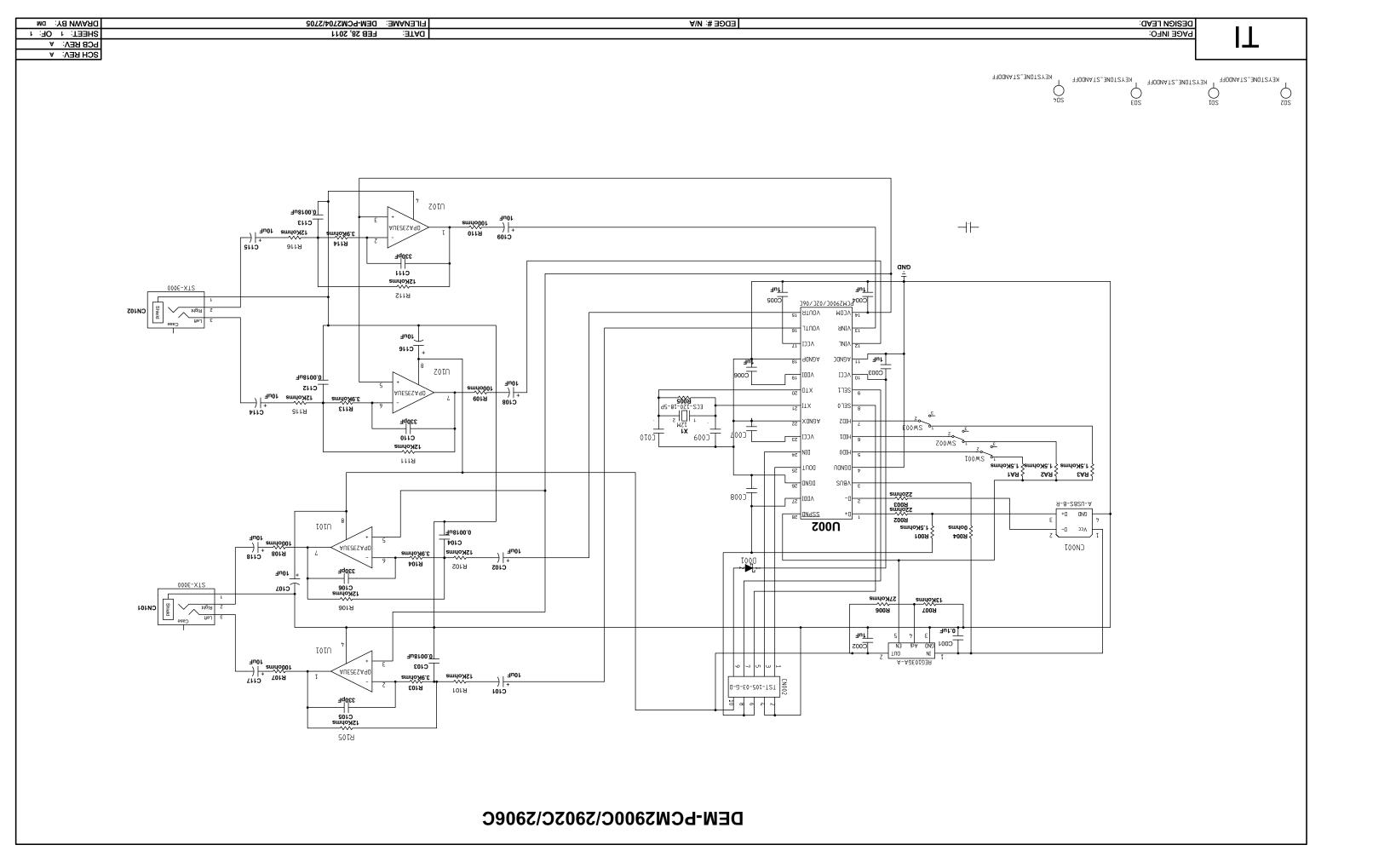


Figure 5. PCM2900CEVM/2902CEVM/2906CEVM-U Bottom View



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EVM Warnings and Restrictions

It is important to operate this EVM within the input voltage range of 0 V to +5 V and the output voltage range of 0 V to +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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