



# DEM-PCM1720 DEM-PCM1723 DEM-DAI1720 EVALUATION FIXTURE

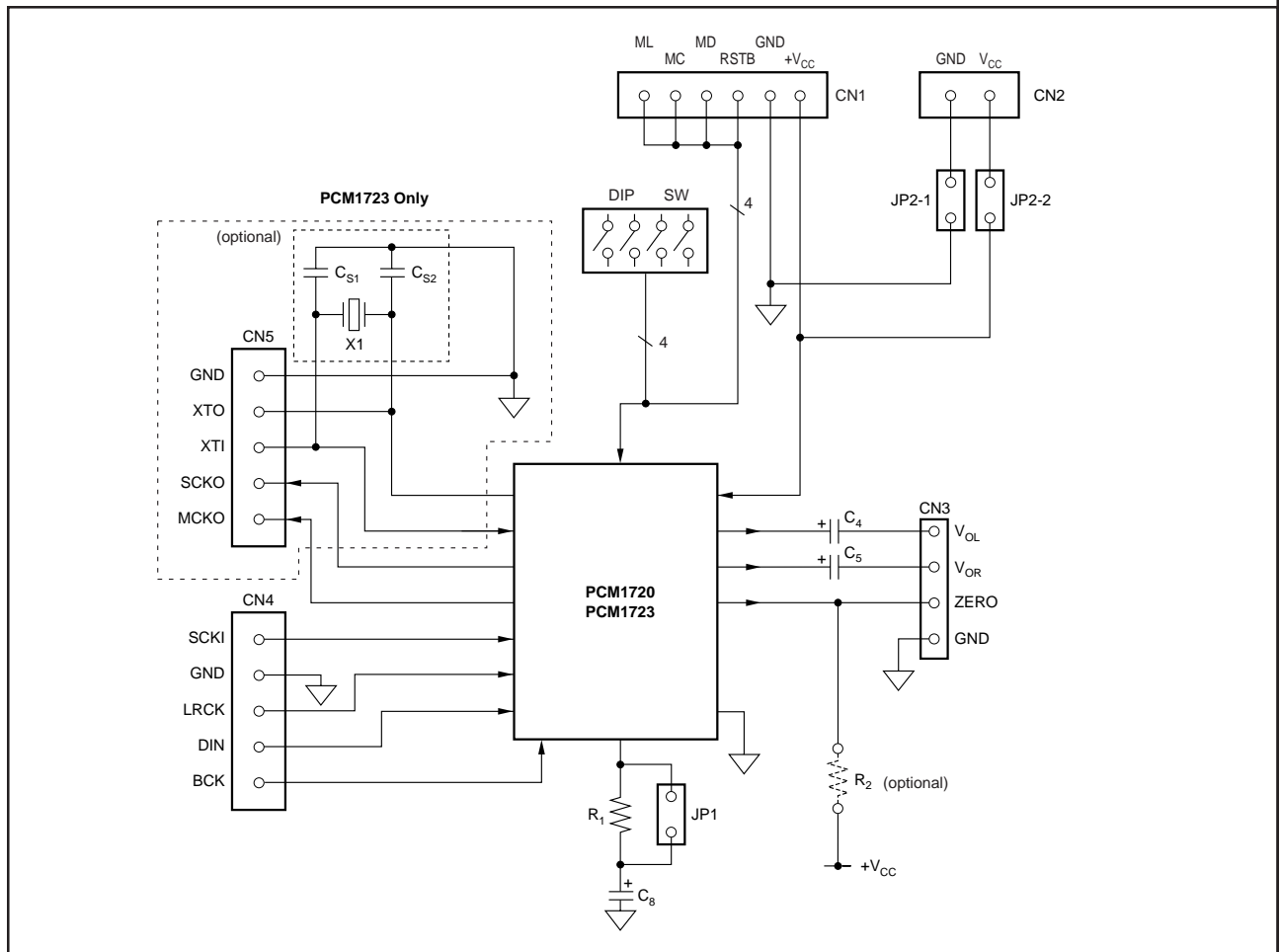
## GENERAL DESCRIPTION

The DEM-PCM1720 and DEM-PCM1723 are basic demonstration boards for the PCM1720 and PCM1723 stereo audio DACs. The demonstration board includes single-row header connectors for audio clocks and data, power supplies, and left and right audio outputs. There is also a connector for accessing the DACs three-wire serial control port, which is used to write the

internal registers of the device.

The DEM-DAI1720 includes both the DEM-PCM1720 demonstration board and the DEM-DAI mother board.

## BLOCK DIAGRAM



International Airport Industrial Park • Mailing Address: PO Box 11400, Tucson, AZ 85734 • Street Address: 6730 S. Tucson Blvd., Tucson, AZ 85706 • Tel: (520) 746-1111  
Twx: 910-952-1111 • Internet: <http://www.burr-brown.com/> • Cable: BBRCORP • Telex: 066-6491 • FAX: (520) 889-1510 • Immediate Product Info: (800) 548-6132

## DEM-PCM1720/1723 HARDWARE DESCRIPTION

The DEM-PCM1720 and DEM-PCM1723 are basic demonstration boards for the PCM1720 and PCM1723 stereo audio DACs. They include connectors for interfacing to the DEM-DAI mother board or a customer's proto board. They also include a header which can be connected to the parallel port of an IBM PC for programming the PCM1720 and PCM1723 internal registers. This header may also be used to interface to a customer-specific host controller.

### Figures

The front page of this data sheet shows the overall functional block diagram of the DEM-PCM1720/1723 demonstration board. Figure 1 shows the configuration diagram when using the PCM1720. Figure 2 shows the configuration diagram when using the PCM1723 with an external clock. Figure 3 shows the configuration diagram when using the PCM1723 with the on-chip crystal oscillator. Figure 4 shows the demonstration board schematic.

### Connectors

CN1 is used for interfacing to an external controller, such as the PC parallel port when using the supplied interface cable and demonstration software. The +5V power supply and ground can also be supplied at this connector.

CN2 is used for the +5V power supply and ground connections when not using CN1 for this function.

CN3 provides access to the DAC's left and right audio outputs,  $V_{OL}$  and  $V_{OR}$ , as well as the ZERO output pin. An analog ground connection is also provided.

CN4 is used to supply the audio data and clocks for both the PCM1720 and PCM1723. It also provides access to the PCM1720's system clock (SCKI) input.

CN5 is used only for the PCM1723. It provides access to the XTI, XTO, SCKO, and MCKO pins. This connector is used for both external clock or crystal oscillator operation (see Figures 2 and 3).

### Jumpers

JP1 is used to bypass  $R_1$  when using the PCM1723. This jumper should be left open when using the PCM1720.

Jumpers JP2-1 and JP2-2 are used to enable or disable connection of the +5V power supply and ground through connector CN2.

When using the PCM1723 with an external clock (see Figure 2), the XTO and GND pins on connector CN5 should be connected together.

### DIP Switch

The ML, MC, and MD pins are to be set in their open, or "OFF" position. This allows the user to program the DAC via connector CN1, or simply leave these pins to float and accept the reset default setup. See Table II in the PCM1720 data sheet for reset defaults. See Table III in the PCM1723 data sheet for reset defaults.

### Optional Components

Resistor  $R_2$  is provided for insertion of a 10k $\Omega$  pull-up resistor for the ZERO pin. When using the ZERO output, make sure to install  $R_2$ .

$X1$ ,  $C_{S1}$ , and  $C_{S2}$  are provided for insertion of a crystal and its accompanying capacitors when using the PCM1723's on-chip crystal oscillator (see Figure 3).  $C_{S1}$  and  $C_{S2}$  should be from 10pF to 33pF in value, with 22pF shown in Figure 4 as a typical value.

## DEM-DAI1720

The DEM-DAI1720 includes both the DEM-PCM1720 demonstration board and the DEM-DAI mother board. For more information regarding the use and configuration of the DEM-DAI mother board, consult the product data sheet.

## ORDERING INFORMATION

PRODUCT	DESCRIPTION
DEM-PCM1720	Basic Demonstration Board for the PCM1720.
DEM-PCM1720-1	Same as the DEM-PCM1720, plus Interface Cable and Demonstration Software.
DEM-DAI1720	Evaluation Kit, Including the DEM-PCM1720 and the DEM-DAI Board.
DEM-DAI1720-1	Same as the DEM-DAI1720, plus Interface Cable and Demonstration Software.
DEM-PCM1723	Basic Demonstration Board for the PCM1723.
DEM-PCM1723-1	Same as the DEM-PCM1723, plus Interface Cable and Demonstration Software.

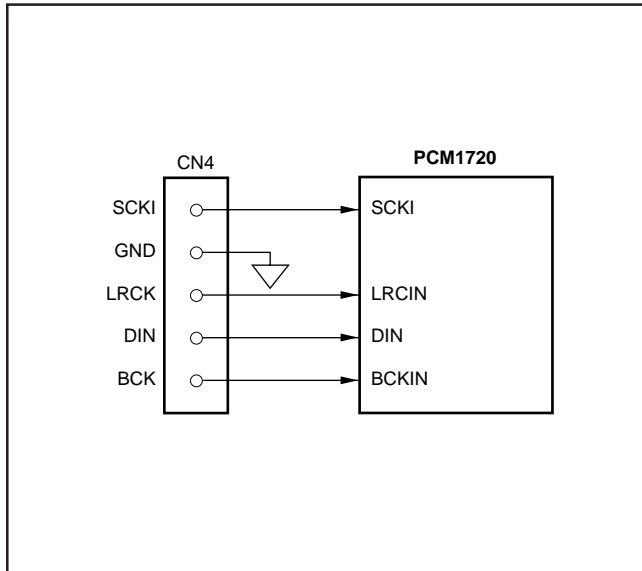


FIGURE 1. PCM1720 Configuration.

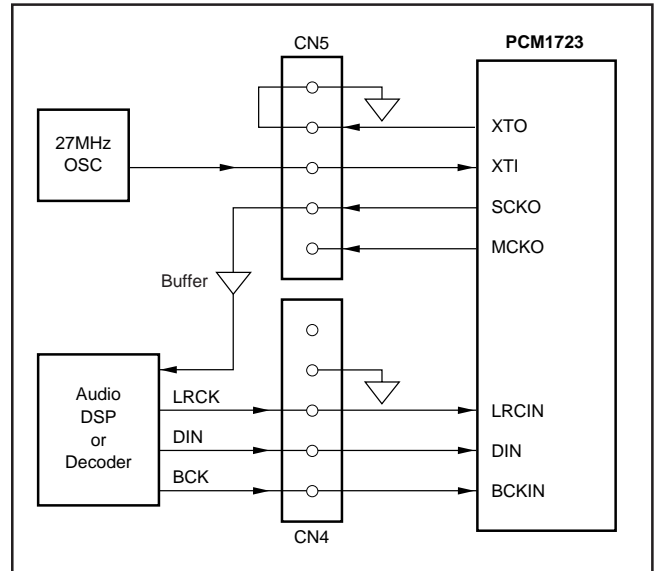


FIGURE 2. PCM1723 External Clock Configuration.

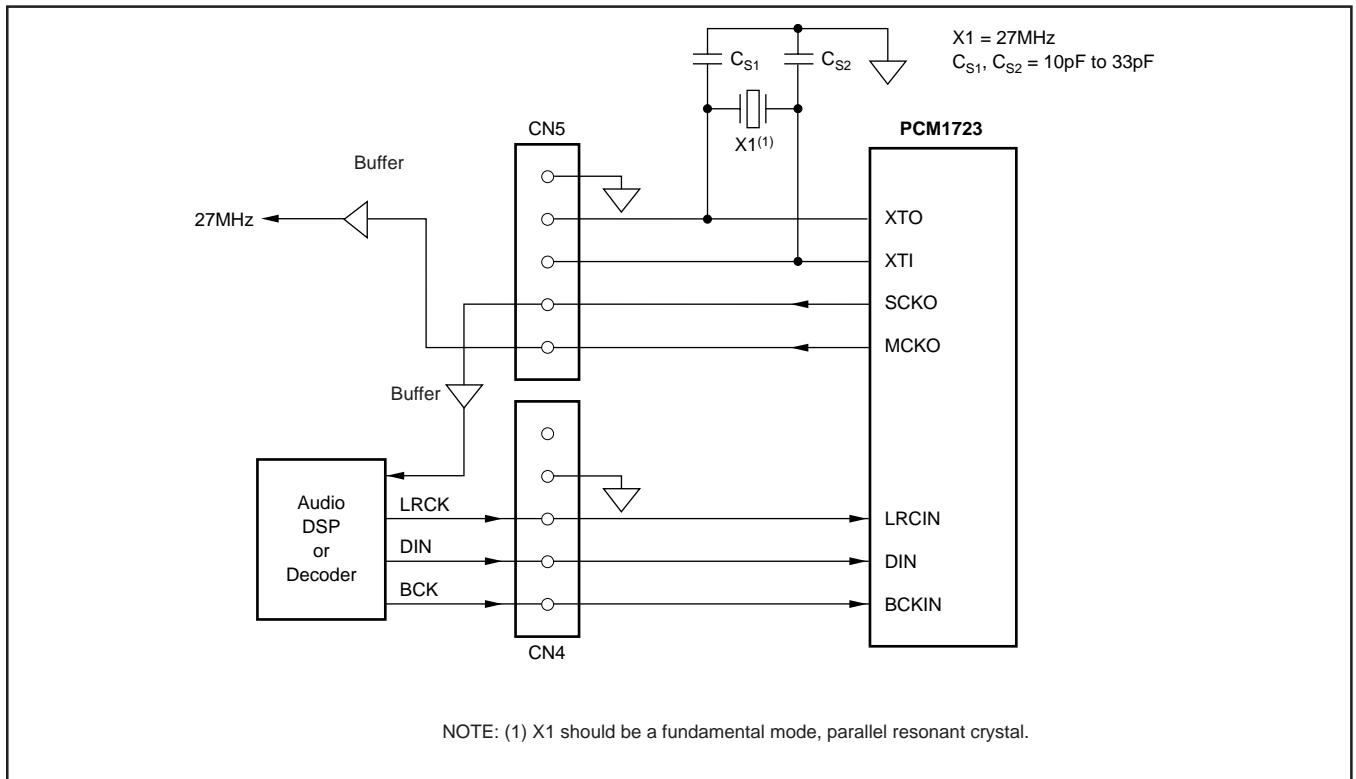


FIGURE 3. PCM1723 Crystal Oscillator Configuration.

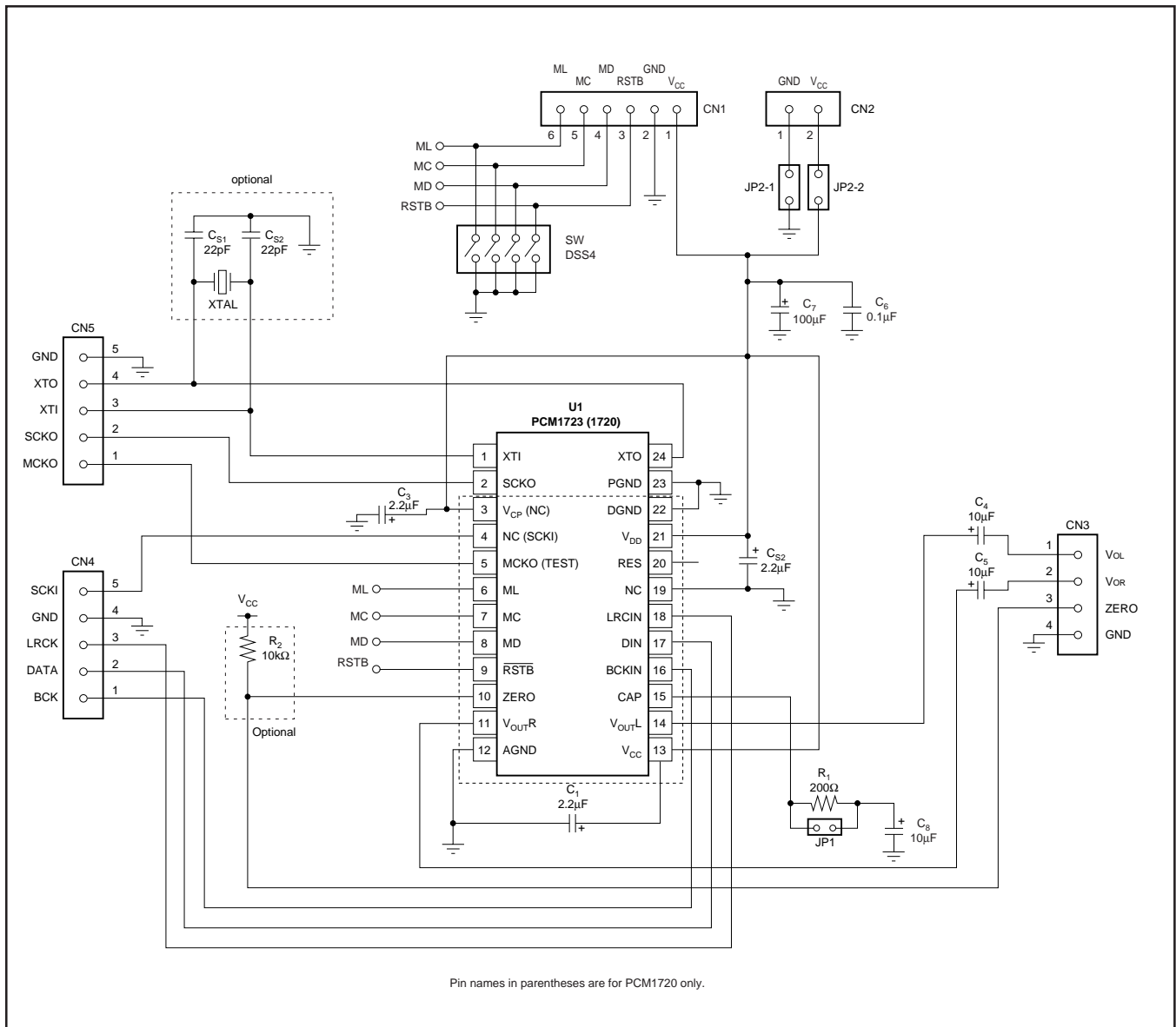


FIGURE 4. Demonstration Board Schematic.

## **IMPORTANT NOTICE**

Texas Instruments and its subsidiaries (TI) reserve the right to make changes to their products or to discontinue any product or service without notice, and advise customers to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgment, including those pertaining to warranty, patent infringement, and limitation of liability.

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

Customers are responsible for their applications using TI components.

In order to minimize risks associated with the customer's applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards.

TI assumes no liability for applications assistance or customer product design. TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of TI covering or relating to any combination, machine, or process in which such semiconductor products or services might be or are used. TI's publication of information regarding any third party's products or services does not constitute TI's approval, warranty or endorsement thereof.