CDB82L41-DC High Coast System Daughter Card User Guide

Introduction

The High Coast system is a hardware platform for configuring and evaluating the Cirrus Logic CS82L4x analog front-end (AFE) devices. It comprises the High Coast motherboard (CDB82L4X-MB) and a daughter card. Separate daughter cards are available for the 1-channel (CDB82L41-DC), 4-channel (CDB82L44-DC), and 6-channel (CDB82L46-DC) products.

This document describes the features and usage of the High Coast daughtercard CDB82L41-DC. For descriptions of the CDB82L4X-MB motherboard and the other daughter cards, see the respective user guides.

The CDB82L41-DC daughter card incorporates a CS82L41 one-channel analog frontend (AFE), see Figure 1.

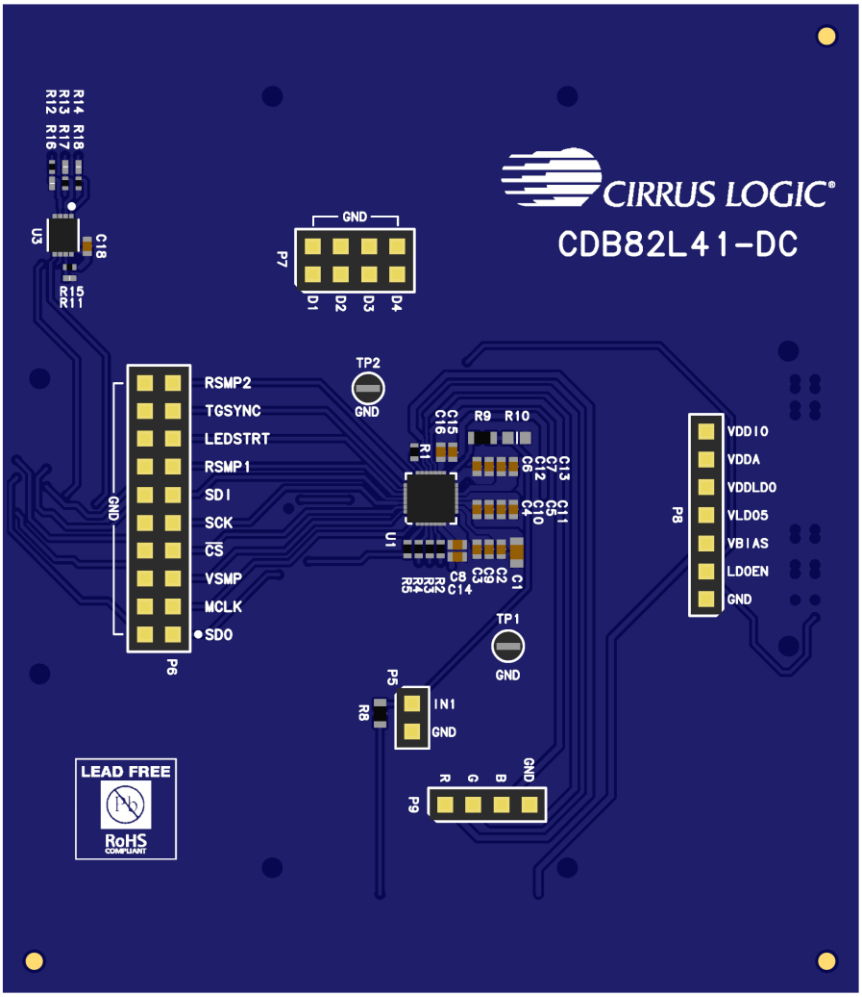

Figure 1. CDB82L41-DC Daughter Card

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1 Motherboard Connection

Caution:

The daughter card must not be inserted or removed while the High Coast system is powered. Fully disconnect or power down all external power supplies before connecting or removing a daughter card.

The CDB82L41-DC daughter card mounts to the High Coast motherboard via the DC1, DC2, DC3, and DC4 connectors. For further details, refer to the High Coast system motherboard user guide.

To mount the daughter card, ensure the DC1–DC4 connectors of the daughter card align with the respective connectors on the High Coast motherboard. Once aligned, apply downwards pressure on each side of the daughter card until seated. After mounting, device signals are accessible from the High Coast motherboard. For details on the operation of the High Coast motherboard, refer to the High Coast motherboard user guide.

The correct position and orientation of the CDB82L41-DC daughter card is shown in Figure 2.

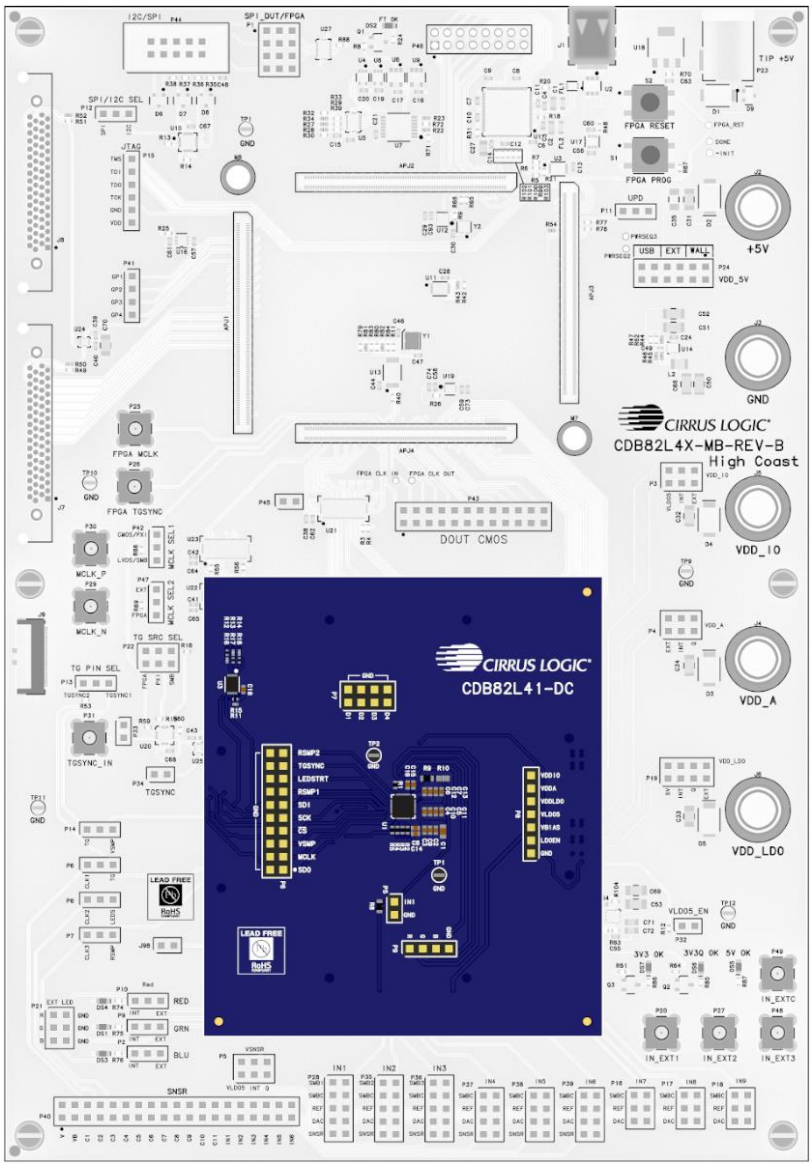

Figure 2. Motherboard Connection

2 Test Points

The CDB82L41-DC daughter card provides a comprehensive set of test points for monitoring device signals. The test points are grouped by function, as shown in Figure 3. Note that oscilloscope probe ground leads can be connected to hoop test points TP1 and TP2.

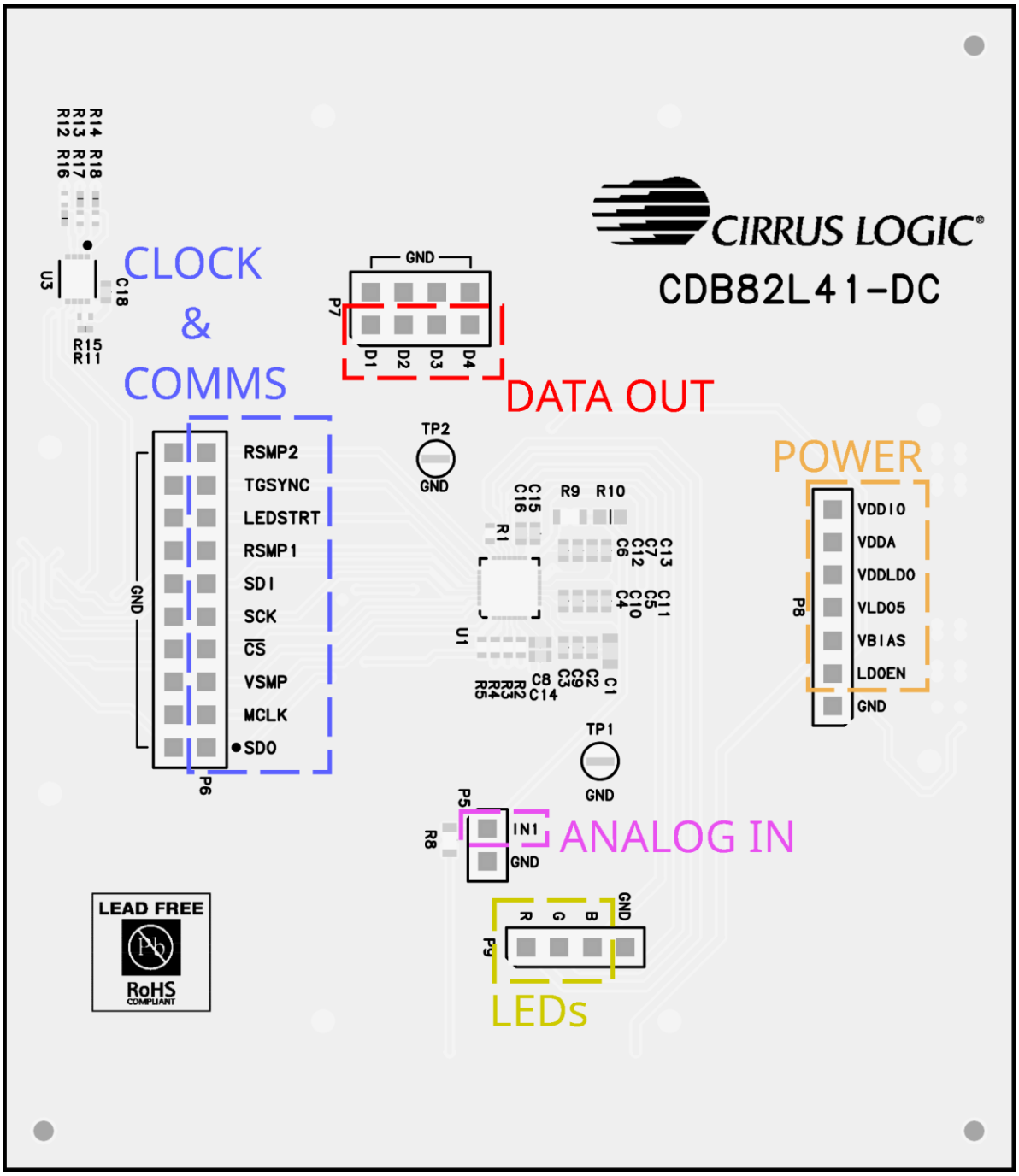

Figure 3. Test Points

All test points are labeled on the daughter card. The mapping between the daughter-card label and CS82L41 pin is shown in Table 1.

Table 1. Test Point Mapping

Daughter Card Label	CS82L41 Pin Name	Notes
RSMP2	RSMP_EXT2/GPIO4	
TGSYNC	LEDR_EN/TGSYNC/GPIO1	
LEDSTRT	LEDG_EN/LEDSTART/GPIO2	
RSMP1	LEDB_EN/RSMP_EXT1/GPIO3	
SDI	SPI_SDI	
SCK	SPI_SCK	
$\overline{CS}$	$\overline{SPI\_CS}$	
VSMP	VSMP_EXT	
MCLK	MCLK_EXT	
SDO	DOUT4/SPI_SDO	Includes fanout buffer.
D1	DOUT1	
D2	DOUT2	
D3	DOUT3	
D4	DOUT4/SPI_SDO	Includes fanout buffer.
R	ILED_R	
G	ILED_G	
B	ILED_B	
IN1	IN1	
VDDIO	VDD_IO	
VDDA	VDD_A	
VDDLDO	VDD_LDO	
VLDO5	VLDO5	
VBIAS	VBIAS	
LDOEN	LDO_EN	
GND	GND	

3 Analog Input

3.1 Analog Input DC/AC Coupling

By default, the analog input (IN1) is DC coupled to the CS82L41 through the 0 Ω resistor R9. The resistor site is highlighted in red in Figure 5.

To configure the board for AC-coupled input, replace the 0 Ω resistor with a capacitor, as illustrated in Figure 4. The required capacitor package size is 0603 (1608 metric).

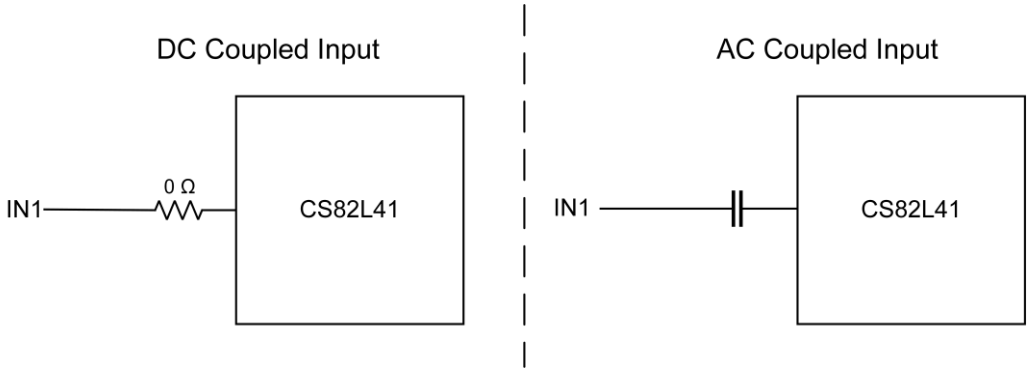

Figure 4. DC/AC Coupled Input

3.2 Analog Input Termination

The CS82L41 provides a high-impedance termination for the analog input (IN1). If required, a parallel termination resistor can be incorporated by populating R10. The resistor site is highlighted in blue in Figure 5.

The recommended termination resistor value is 49.9 Ω, to match the 50 Ω controlled impedance of the analog input traces on the PCB. The required termination resistor package size is 0603 (1608 metric).

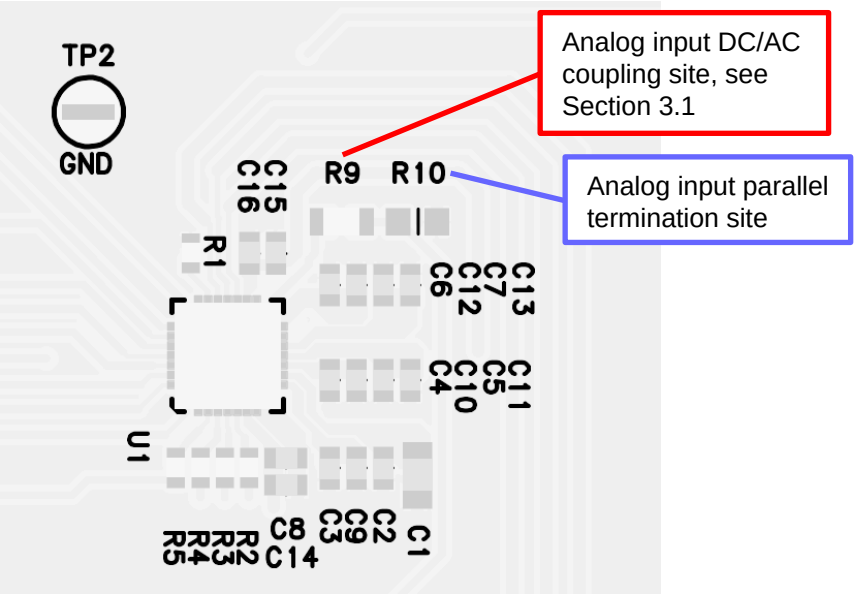

Figure 5. Analog Input Coupling and Termination

4 SoundClear Studio Support

SoundClear® Studio (SCS) is a Windows®/MacOS® application used to configure Cirrus Logic devices. SCS provides support for evaluation and development and can be used to communicate with the CDB82L41-DC daughter card when it is mounted on a High Coast motherboard. When SCS is launched, it automatically detects the CDB82L41-DC board and loads the register map for the CS82L41 device.

For download and installation details, including script execution, refer to the High Coast (CDB82L4X-MB) motherboard user guide.

5 Revision History

Revision History

Revision	Changes
R1 MAY 2025	• Initial version.

Contacting Cirrus Logic Support

For all product questions and inquiries, contact a Cirrus Logic Sales Representative.
To find the one nearest you, go to www.cirrus.com.