

## Customer Demo Board for the WM7132P

### Features

- WM7132P MEMS microphone
  - Pressure field
  - Free field
- Plug-and-play interface to smart codec main board
  - Functional test
  - Full signal path setup with smart codec
  - System development and prototyping
  - Algorithm verification

### Description

The CDB7132P is a flexible PCB for full electrical and acoustic validation of the WM7132P MEMS microphone. The CDB7132P is designed to connect to test equipment via on board test points or via a codec main board with mating edge connector socket.

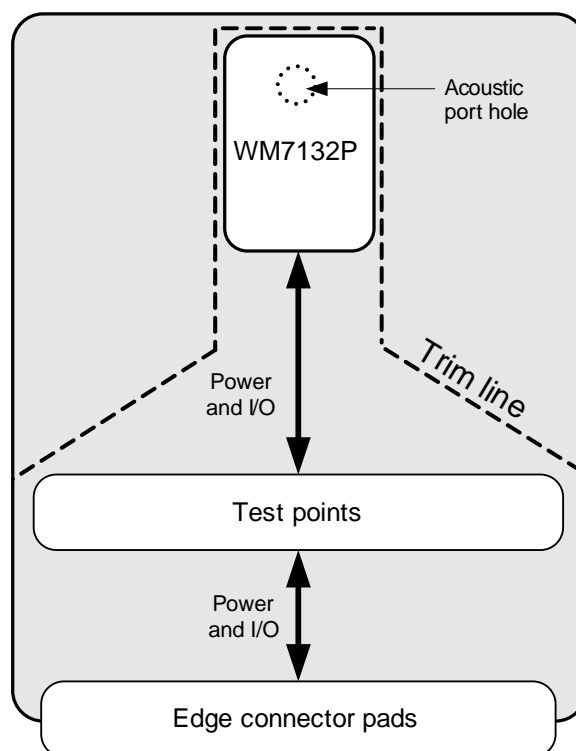
The CDB7132P is ideally suited for pressure field acoustic measurements. Furthermore, the flexible region can be trimmed to enable accurate free field measurements to be made.

The CDB7132P also serves as a component and layout reference for the WM7132P.

### Ordering Information

CDBWM7132-M-2

Customer Demo Board



---

**Table of Contents**

<b>1 System Overview</b> .....	<b>3</b>
1.1 Test Points .....	3
1.2 Edge Connector .....	3
1.3 Trim Line .....	3
<b>2 Quick Setup Guide</b> .....	<b>4</b>
2.1 Pressure field acoustic test .....	4
2.2 Free field acoustic test .....	5
<b>3 Schematic</b> .....	<b>6</b>
<b>4 Layout</b> .....	<b>7</b>
<b>5 Known Issues</b> .....	<b>7</b>
<b>6 Bill of Materials</b> .....	<b>7</b>
<b>7 Revision History</b> .....	<b>7</b>

## 1 System Overview

The CDB7132P customer demo board is a flexible PCB for evaluating the WM7132P low-profile analog silicon microphone. The following subsections describe the features of CDB7132P customer demo board in detail.

### 1.1 Test Points

Six test points are available to provide all the connections from WM7132P to standard test equipment for full acoustic measurement. Test points are described in [Table 1-1](#). The operating supply voltage of WM7132P is provided in the data sheet, which is available from Cirrus website.

**Table 1-1. Test Point signals**

Test Point	Pin	Direction	Description
TP1	VDD	Supply	Analog Supply
TP2	OP+	Output	Microphone analogue output signal
TP3	NA	NA	Not Applicable
TP4, TP5, TP6	GND	Ground reference	Analog Ground

### 1.2 Edge Connector

The J1 and J2 edge connector pads provide a pluggable connection to a codec main board with compatible edge card socket. The edge connector pin-outs are described in [Table 1-2](#) and [Table 1-3](#).

**Table 1-2. Edge connection J1**

Pin	Pin	Direction	Description
1	OP+	Output	Microphone analogue output signal (pin 1 is marked by a small dot)
2	VDD	Supply	Analog supply from codec MICBIAS
3, 7	GND	Ground reference	Analog ground
8	—	—	Not applicable
4, 5, 6, 9, 10	NC	—	No connection

**Table 1-3. Edge connection J2**

Pin	Pin	Direction	Description
1,2,3,4,5,6,7,8,9,10	NC	NA	No Connection

### 1.3 Trim Line

To enable more accurate free field frequency responses to be obtained, the flexible region of the CDB7132P may be trimmed to reduce acoustic interactions. If required, there is a guide line on the silkscreen that can be cut along. Refer to [Fig. 4-1](#) for further details.

## 2 Quick Setup Guide

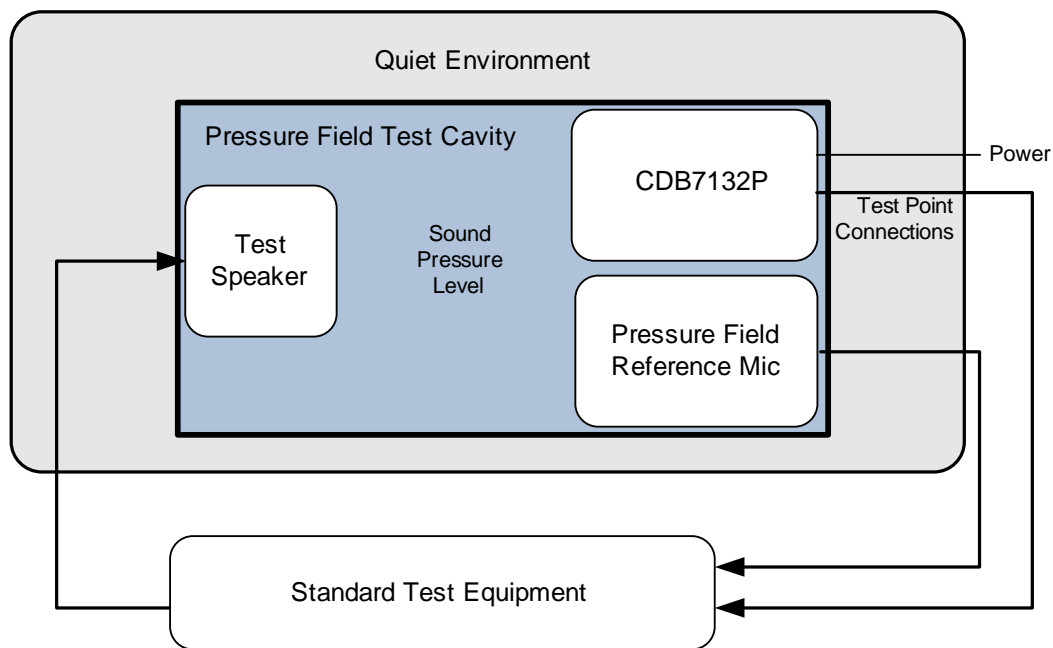
As a standalone PCB, the CDB7132P can be used in a pressure field acoustic test setup or free field acoustic test setup. It can also be connected to a compatible codec main board to enable full signal path setup within a system platform.

Acoustic measurements can be obtained using a number of different methods. Typical acoustic test setups, using a comparison method, are shown in [Section 2.1](#) and [Section 2.2](#).

### 2.1 Pressure field acoustic test

Recommendations for accurate pressure field measurements are as follows:

- Ensure calibrated test equipment is used for making measurements
- Ensure CDB7132P acoustic port hole is tightly sealed within the pressure field test cavity
- Ensure CDB7132P and reference mic are placed close together with minimum placement error
- Use a suitable test microphone—a pressure field reference microphone is recommended
- Ensure the pressure field test cavity is tightly sealed
- Measurements should be performed within a quiet environment

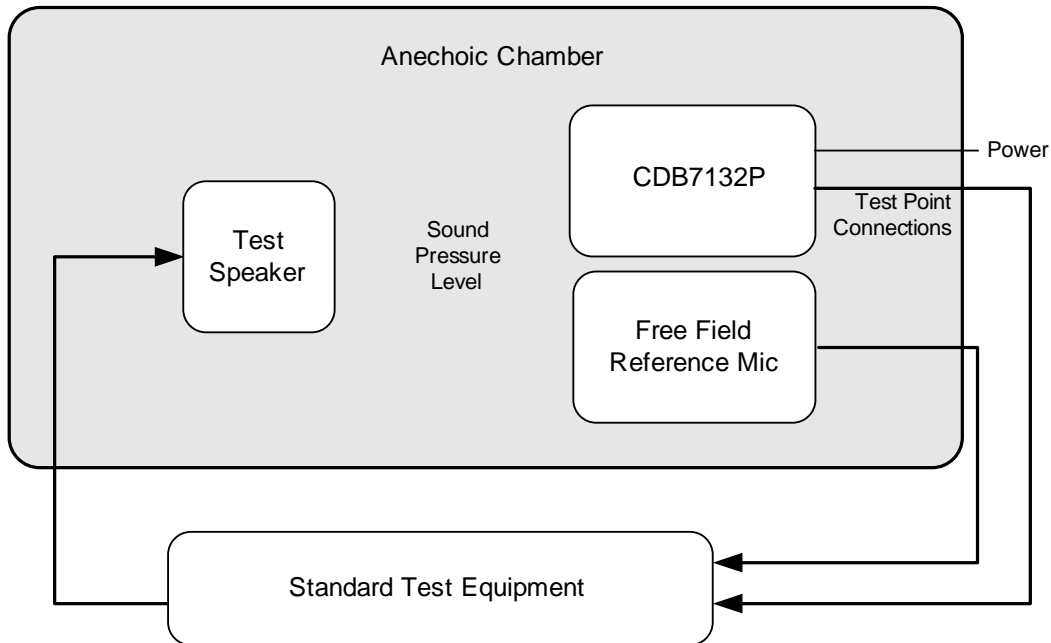


**Figure 2-1. Pressure field test setup with CDB7132P**

## 2.2 Free field acoustic test

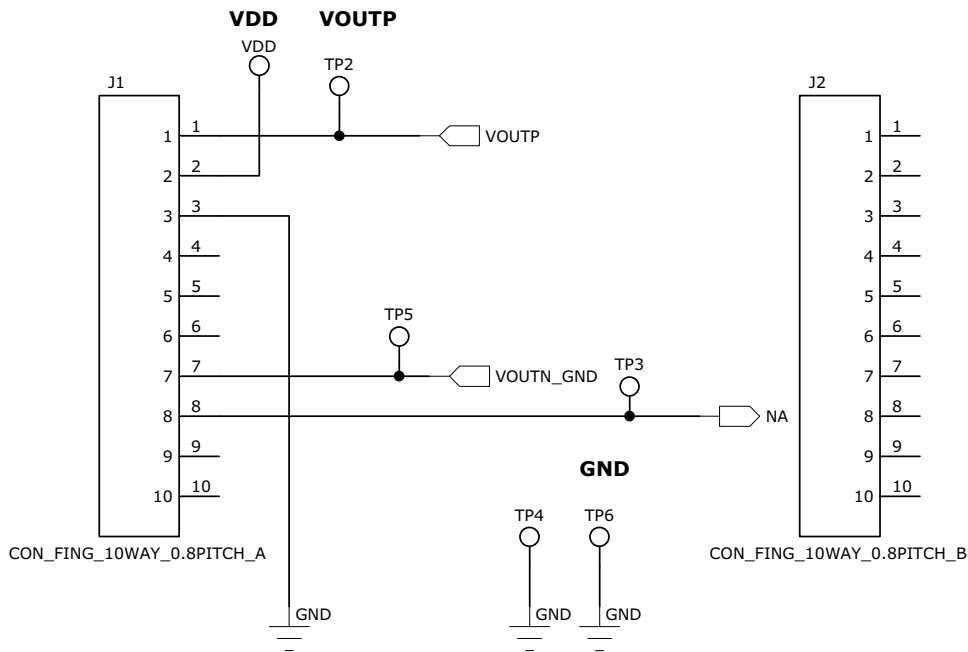
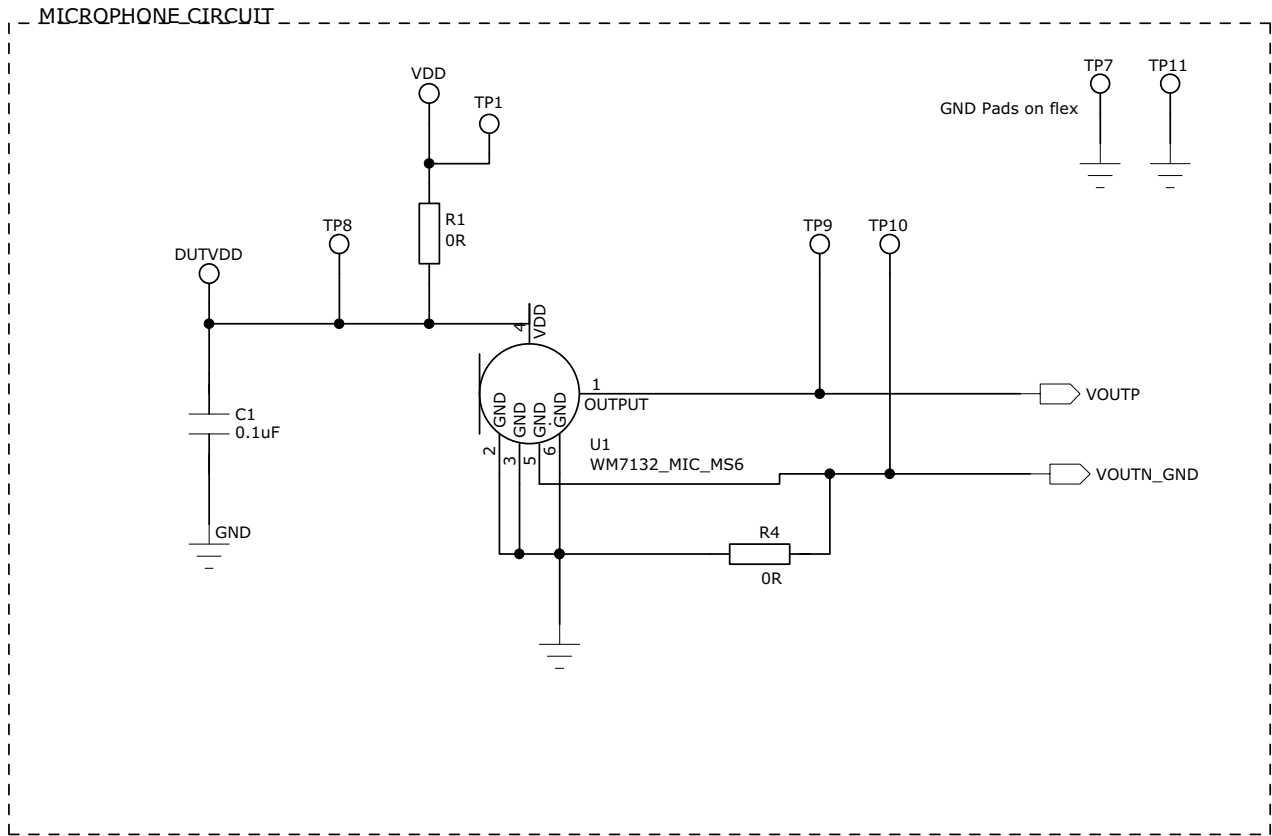
Recommendations for accurate free field measurements are as follows:

- Ensure calibrated test equipment is used for making measurements
- Ensure CDB7132P acoustic port hole and reference mic are facing to the incoming sound pressure
- Ensure CDB7132P and reference mic are placed close together with minimum placement error
- The CDB7132P may be trimmed along the 'Trim line' to improve accuracy
- Use a suitable test microphone—a free field reference microphone is recommended
- Measurements should be performed within an anechoic environment



**Figure 2-2. Free field test setup with CDB7132P**

### 3 Schematic



## 4 Layout

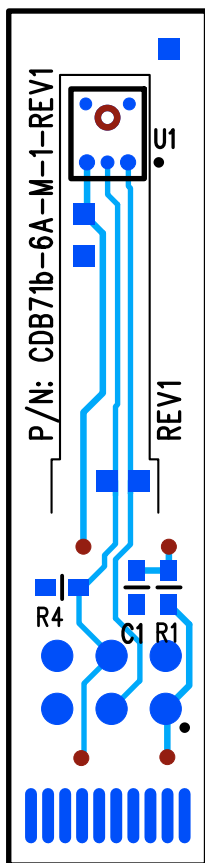


Figure 4-1. Top Layer + Silkscreen

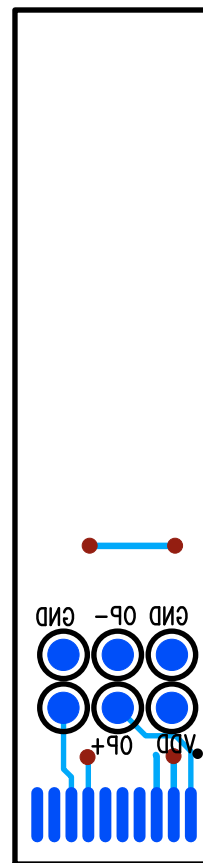


Figure 4-2. Bottom Layer + Silkscreen

## 5 Known Issues

There are no known issues with this board.

## 6 Bill of Materials

Table 6-1. Bill of Materials

Item	RefDes	Description	Manufacturer	Manufacturer's Part Number
1	U1	WM7132P Bottom Port Analog Silicon Microphone	Cirrus Logic	WM7132PIMSE
2	C1	0.1- $\mu$ F 0603 SMD Ceramic Capacitor 16 V X7R	Phycomp	2238 786 15649
3, 4	R1, R4	0- $\Omega$ 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 0R
5	PCB	WM7132P Bottom Port demo board PCB	Cirrus Logic	CDB71B-6A-M1

## 7 Revision History

Table 7-1. Revision History

Revision	Changes
DB1 NOV '16	<ul style="list-style-type: none"> <li>Initial version.</li> </ul>

**Important:** Please check [www.Cirrus.com](http://www.Cirrus.com) to confirm that you are using the latest revision of this document and to determine whether there are errata associated with this device.

---

## 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](http://www.cirrus.com).

---

### IMPORTANT NOTICE

The products and services of Cirrus Logic International (UK) Limited; Cirrus Logic, Inc.; and other companies in the Cirrus Logic group (collectively either "Cirrus Logic" or "Cirrus") are sold subject to Cirrus Logic's terms and conditions of sale supplied at the time of order acknowledgment, including those pertaining to warranty, indemnification, and limitation of liability. Software is provided pursuant to applicable license terms. Cirrus Logic reserves the right to make changes to its products and specifications or to discontinue any product or service without notice. Customers should therefore obtain the latest version of relevant information from Cirrus Logic to verify that the information is current and complete. Testing and other quality control techniques are utilized to the extent Cirrus Logic deems necessary. Specific testing of all parameters of each device is not necessarily performed. In order to minimize risks associated with customer applications, the customer must use adequate design and operating safeguards to minimize inherent or procedural hazards. Cirrus Logic is not liable for applications assistance or customer product design. The customer is solely responsible for its selection and use of Cirrus Logic products. Use of Cirrus Logic products may entail a choice between many different modes of operation, some or all of which may require action by the user, and some or all of which may be optional. Nothing in these materials should be interpreted as instructions or suggestions to choose one mode over another. Likewise, description of a single mode should not be interpreted as a suggestion that other modes should not be used or that they would not be suitable for operation. Features and operations described herein are for illustrative purposes only.

CERTAIN APPLICATIONS USING SEMICONDUCTOR PRODUCTS MAY INVOLVE POTENTIAL RISKS OF DEATH, PERSONAL INJURY, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE ("CRITICAL APPLICATIONS"). CIRRUS LOGIC PRODUCTS ARE NOT DESIGNED, AUTHORIZED OR WARRANTED FOR USE IN PRODUCTS SURGICALLY IMPLANTED INTO THE BODY, AUTOMOTIVE SAFETY OR SECURITY DEVICES, NUCLEAR SYSTEMS, LIFE SUPPORT PRODUCTS OR OTHER CRITICAL APPLICATIONS. INCLUSION OF CIRRUS LOGIC PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE FULLY AT THE CUSTOMER'S RISK AND CIRRUS LOGIC DISCLAIMS AND MAKES NO WARRANTY, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, WITH REGARD TO ANY CIRRUS LOGIC PRODUCT THAT IS USED IN SUCH A MANNER. IF THE CUSTOMER OR CUSTOMER'S CUSTOMER USES OR PERMITS THE USE OF CIRRUS LOGIC PRODUCTS IN CRITICAL APPLICATIONS, CUSTOMER AGREES, BY SUCH USE, TO FULLY INDEMNIFY CIRRUS LOGIC, ITS OFFICERS, DIRECTORS, EMPLOYEES, DISTRIBUTORS AND OTHER AGENTS FROM ANY AND ALL LIABILITY, INCLUDING ATTORNEYS' FEES AND COSTS, THAT MAY RESULT FROM OR ARISE IN CONNECTION WITH THESE USES.

This document is the property of Cirrus Logic and by furnishing this information, Cirrus Logic grants no license, express or implied, under any patents, mask work rights, copyrights, trademarks, trade secrets or other intellectual property rights. Any provision or publication of any third party's products or services does not constitute Cirrus Logic's approval, license, warranty or endorsement thereof. Cirrus Logic gives consent for copies to be made of the information contained herein only for use within your organization with respect to Cirrus Logic integrated circuits or other products of Cirrus Logic, and only if the reproduction is without alteration and is accompanied by all associated copyright, proprietary and other notices and conditions (including this notice). This consent does not extend to other copying such as copying for general distribution, advertising or promotional purposes, or for creating any work for resale. This document and its information is provided "AS IS" without warranty of any kind (express or implied). All statutory warranties and conditions are excluded to the fullest extent possible. No responsibility is assumed by Cirrus Logic for the use of information herein, including use of this information as the basis for manufacture or sale of any items, or for infringement of patents or other rights of third parties. Cirrus Logic, Cirrus, the Cirrus Logic logo design, and SoundClear are among the trademarks of Cirrus Logic. Other brand and product names may be trademarks or service marks of their respective owners.

Copyright © 2016 Cirrus Logic, Inc. All rights reserved.