

PIC32 Audio Codec Daughter Board WM8904 Information Sheet

Introduction

Thank you for purchasing a PIC32 Audio Codec daughter board, AC328904. This information sheet provides important information that will help you successfully use the daughter board as quickly as possible.

This daughter board is designed specifically to be used with the PIC32 Bluetooth® Audio Development Kit (DV320032); however, it can also be used with other Microchip development hardware.

For additional information about this daughter board, please visit: http://www.microchip.com.

Features

The PIC32 Audio Codec daughter board, AC328904, is a high-performance stereo codec board for selected PIC32 hardware development platforms. This board features the Wolfson WM8904 (AC328904) Stereo Codec, which includes built-in microphone and headphone amplifiers. This board is suitable for adding audio input and output capabilities to the PIC32 Bluetooth starter kit, and as previously mentioned, it is compatible with the PIC32 Bluetooth Audio development kit.

The PIC32 Audio Codec daughter board, WM8904, features are as follows:

- WM8904 Codec
- MCP1801 power regulator
- 3.5 mm inputs and outputs:
 - Line in
 - External Mic in
 - Headphone out

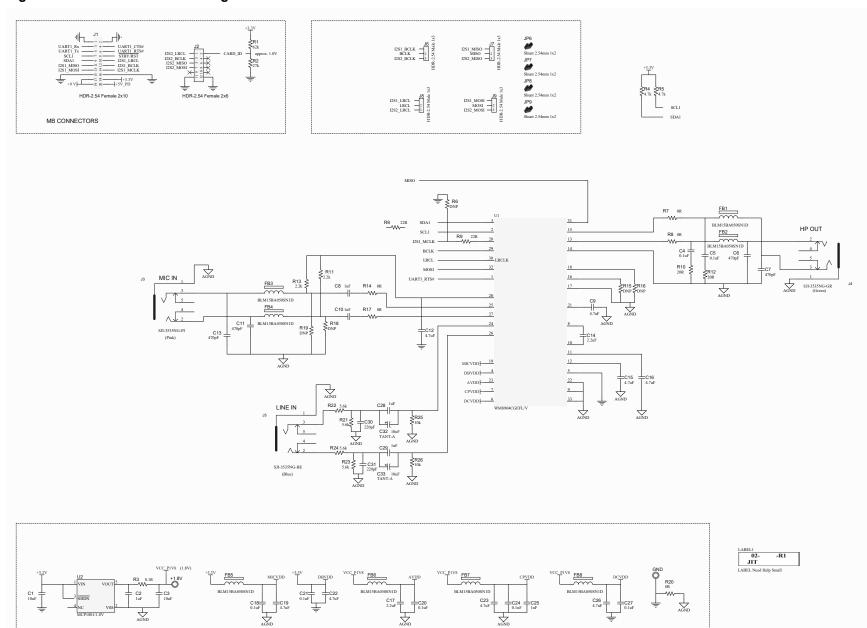
Additional Information

For additional information on drivers and examples, visit the following Microchip web sits:

- http://www.microchip.com/DevelopmentTools/ProductDetails/ac328904
- www.microchip.com/harmony

AC328904

Figure 1. PIC32 Audio Codec Daughter Board WM8904 Schematic



The Microchip Web Site

Microchip provides online support via our web site at http://www.microchip.com/. This web site is used as a means to make files and information easily available to customers. Accessible by using your favorite Internet browser, the web site contains the following information:

- Product Support Data sheets and errata, application notes and sample programs, design resources, user's guides and hardware support documents, latest software releases and archived software
- General Technical Support Frequently Asked Questions (FAQ), technical support requests, online discussion groups, Microchip consultant program member listing
- **Business of Microchip** Product selector and ordering guides, latest Microchip press releases, listing of seminars and events, listings of Microchip sales offices, distributors and factory representatives

Customer Change Notification Service

Microchip's customer notification service helps keep customers current on Microchip products. Subscribers will receive e-mail notification whenever there are changes, updates, revisions or errata related to a specified product family or development tool of interest.

To register, access the Microchip web site at http://www.microchip.com/. Under "Support", click on "Customer Change Notification" and follow the registration instructions.

Customer Support

Users of Microchip products can receive assistance through several channels:

- Distributor or Representative
- Local Sales Office
- Field Application Engineer (FAE)
- Technical Support

Customers should contact their distributor, representative or Field Application Engineer (FAE) for support. Local sales offices are also available to help customers. A listing of sales offices and locations is included in the back of this document.

Technical support is available through the web site at: http://www.microchip.com/support

Microchip Devices Code Protection Feature

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of
 these methods, to our knowledge, require using the Microchip products in a manner outside the
 operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is
 engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.

 Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as "unbreakable."

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Legal Notice

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights unless otherwise stated.

Trademarks

The Microchip name and logo, the Microchip logo, AnyRate, AVR, AVR logo, AVR Freaks, BitCloud, chipKIT, chipKIT logo, CryptoMemory, CryptoRF, dsPIC, FlashFlex, flexPWR, Heldo, JukeBlox, KeeLoq, Kleer, LANCheck, LINK MD, maXStylus, maXTouch, MediaLB, megaAVR, MOST, MOST logo, MPLAB, OptoLyzer, PIC, picoPower, PICSTART, PIC32 logo, Prochip Designer, QTouch, SAM-BA, SpyNIC, SST, SST Logo, SuperFlash, tinyAVR, UNI/O, and XMEGA are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

ClockWorks, The Embedded Control Solutions Company, EtherSynch, Hyper Speed Control, HyperLight Load, IntelliMOS, mTouch, Precision Edge, and Quiet-Wire are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Adjacent Key Suppression, AKS, Analog-for-the-Digital Age, Any Capacitor, Anyln, AnyOut, BodyCom, CodeGuard, CryptoAuthentication, CryptoAutomotive, CryptoCompanion, CryptoController, dsPICDEM, dsPICDEM.net, Dynamic Average Matching, DAM, ECAN, EtherGREEN, In-Circuit Serial Programming, ICSP, INICnet, Inter-Chip Connectivity, JitterBlocker, KleerNet, KleerNet logo, memBrain, Mindi, MiWi, motorBench, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICkit, PICtail, PowerSmart, PureSilicon, QMatrix, REAL ICE, Ripple Blocker, SAM-ICE, Serial Quad I/O, SMART-I.S., SQI, SuperSwitcher, SuperSwitcher II, Total Endurance, TSHARC, USBCheck, VariSense, ViewSpan, WiperLock, Wireless DNA, and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

Silicon Storage Technology is a registered trademark of Microchip Technology Inc. in other countries.

GestIC is a registered trademark of Microchip Technology Germany II GmbH & Co. KG, a subsidiary of Microchip Technology Inc., in other countries.

All other trademarks mentioned herein are property of their respective companies.

© 2018, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

ISBN: 978-1-5224-3320-0

Quality Management System Certified by DNV

ISO/TS 16949

Microchip received ISO/TS-16949:2009 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC® MCUs and dsPIC® DSCs, KEELOQ® code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.

© 2018 Microchip Technology Inc. DS50002775A-page 5



Worldwide Sales and Service

AMERICAS	ASIA/PACIFIC	ASIA/PACIFIC	EUROPE
Corporate Office	Australia - Sydney	India - Bangalore	Austria - Wels
2355 West Chandler Blvd.	Tel: 61-2-9868-6733	Tel: 91-80-3090-4444	Tel: 43-7242-2244-39
Chandler, AZ 85224-6199	China - Beijing	India - New Delhi	Fax: 43-7242-2244-393
Tel: 480-792-7200	Tel: 86-10-8569-7000	Tel: 91-11-4160-8631	Denmark - Copenhagen
Fax: 480-792-7277	China - Chengdu	India - Pune	Tel: 45-4450-2828
Technical Support:	Tel: 86-28-8665-5511	Tel: 91-20-4121-0141	Fax: 45-4485-2829
http://www.microchip.com/	China - Chongqing	Japan - Osaka	Finland - Espoo
support	Tel: 86-23-8980-9588	Tel: 81-6-6152-7160	Tel: 358-9-4520-820
Web Address:	China - Dongguan	Japan - Tokyo	France - Paris
www.microchip.com	Tel: 86-769-8702-9880	Tel: 81-3-6880- 3770	Tel: 33-1-69-53-63-20
Atlanta	China - Guangzhou	Korea - Daegu	Fax: 33-1-69-30-90-79
Duluth, GA	Tel: 86-20-8755-8029	Tel: 82-53-744-4301	Germany - Garching
Tel: 678-957-9614	China - Hangzhou	Korea - Seoul	Tel: 49-8931-9700
Fax: 678-957-1455	Tel: 86-571-8792-8115	Tel: 82-2-554-7200	Germany - Haan
Austin, TX	China - Hong Kong SAR	Malaysia - Kuala Lumpur	Tel: 49-2129-3766400
Tel: 512-257-3370	Tel: 852-2943-5100	Tel: 60-3-7651-7906	Germany - Heilbronn
Boston	China - Nanjing	Malaysia - Penang	Tel: 49-7131-67-3636
Westborough, MA	Tel: 86-25-8473-2460	Tel: 60-4-227-8870	Germany - Karlsruhe
Tel: 774-760-0087	China - Qingdao	Philippines - Manila	Tel: 49-721-625370
Fax: 774-760-0088	Tel: 86-532-8502-7355	Tel: 63-2-634-9065	Germany - Munich
Chicago	China - Shanghai	Singapore	Tel: 49-89-627-144-0
Itasca, IL	Tel: 86-21-3326-8000	Tel: 65-6334-8870	Fax: 49-89-627-144-44
Tel: 630-285-0071	China - Shenyang	Taiwan - Hsin Chu	Germany - Rosenheim
Fax: 630-285-0075	Tel: 86-24-2334-2829	Tel: 886-3-577-8366	Tel: 49-8031-354-560
Dallas	China - Shenzhen	Taiwan - Kaohsiung	Israel - Ra'anana
Addison, TX	Tel: 86-755-8864-2200	Tel: 886-7-213-7830	Tel: 972-9-744-7705
Tel: 972-818-7423	China - Suzhou	Taiwan - Taipei	Italy - Milan
Fax: 972-818-2924	Tel: 86-186-6233-1526	Tel: 886-2-2508-8600	Tel: 39-0331-742611
Detroit	China - Wuhan	Thailand - Bangkok	Fax: 39-0331-466781
Novi, MI	Tel: 86-27-5980-5300	Tel: 66-2-694-1351	Italy - Padova
Tel: 248-848-4000	China - Xian	Vietnam - Ho Chi Minh	Tel: 39-049-7625286
Houston, TX	Tel: 86-29-8833-7252	Tel: 84-28-5448-2100	Netherlands - Drunen
Tel: 281-894-5983	China - Xiamen		Tel: 31-416-690399
Indianapolis	Tel: 86-592-2388138		Fax: 31-416-690340
Noblesville, IN	China - Zhuhai		Norway - Trondheim
Tel: 317-773-8323	Tel: 86-756-3210040		Tel: 47-7289-7561
Fax: 317-773-5453			Poland - Warsaw
Tel: 317-536-2380			Tel: 48-22-3325737
Los Angeles			Romania - Bucharest
Mission Viejo, CA			Tel: 40-21-407-87-50
Tel: 949-462-9523			Spain - Madrid
Fax: 949-462-9608			Tel: 34-91-708-08-90
Tel: 951-273-7800			Fax: 34-91-708-08-91
Raleigh, NC			Sweden - Gothenberg
Tel: 919-844-7510			Tel: 46-31-704-60-40
New York, NY			Sweden - Stockholm
Tel: 631-435-6000			Tel: 46-8-5090-4654
San Jose, CA			UK - Wokingham
Tel: 408-735-9110			Tel: 44-118-921-5800
Tel: 408-436-4270			Fax: 44-118-921-5820
Canada - Toronto			
Tel: 905-695-1980			
Fax: 905-695-2078			

© 2018 Microchip Technology Inc. DS50002775A-page 6