

Simple I²C and Power Isolation with **ADM3260**

FEATURES

- Simple evaluation kit for **ADM3260**
- Designed to be used with **USB-SDP-CABLEZ** USB to I²C dongle
- Micro-MaTch connectors for simple connection
- Multiple test points for easy node access
- Special layout to minimize electromagnetic interference (EMI)

EVALUATION KIT CONTENTS

- EVAL-ADM3260MEBZ** board
- 10-way Micro-MaTch cable

RELATED DOCUMENTS

- ADM3260** data sheet
- USB-SDP-CABLEZ** user guide

GENERAL DESCRIPTION

This user guide describes information related to the **EVAL-ADM3260MEBZ** evaluation board. The evaluation board provides an easy way for users to add isolation to the existing USB to I²C interface provided by **USB-SDP-CABLEZ** dongle through the use of the **ADM3260** hot swappable dual I²C isolators with integrated dc-to-dc converter.

The **EVAL-ADM3260MEBZ** evaluation board is very simple to use. All users need to do is to connect it in between the **USB-SDP-CABLEZ** dongle and a supported evaluation kit from Analog Devices, Inc., (see Figure 2). The result is a 2.5 kV isolation barrier created between the PC and the supported

EVALUATION BOARD PHOTO



Figure 1. **EVAL-ADM3260MEBZ** Evaluation Board

evaluation kit while I²C signal communication and power delivery is still maintained.

For additional information on how to achieve data and power transferring across isolation, refer to the **ADM3260** data sheet.

Based on the *isoPower* technology, the integrated isolated dc-to-dc converter on the **ADM3260** uses high frequency switching elements to transfer power through its transformer. Special care is taken during board layout to meet emissions standards. See the [AN-0971 Application Note](#) for board layout recommendations.

TABLE OF CONTENTS

Features	1	Board Conneciton	3
Evaluation Kit Contents.....	1	Evaluation Board Schematic	4
Related Documents	1	Evaluation Board Layout Layers.....	5
General Description	1	Ordering Information.....	6
Evaluation Board Photo.....	1	Bill of Materials.....	6
Revision History	2		

REVISION HISTORY

9/14—Revision 0: Initial Version

BOARD CONNECTION



Figure 2. Board Connection Example

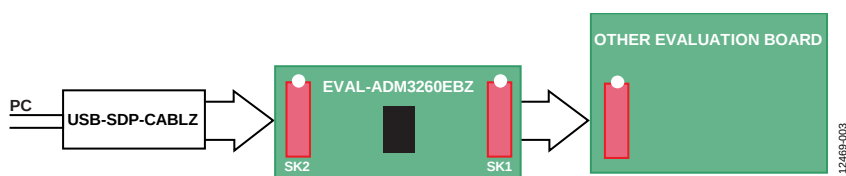
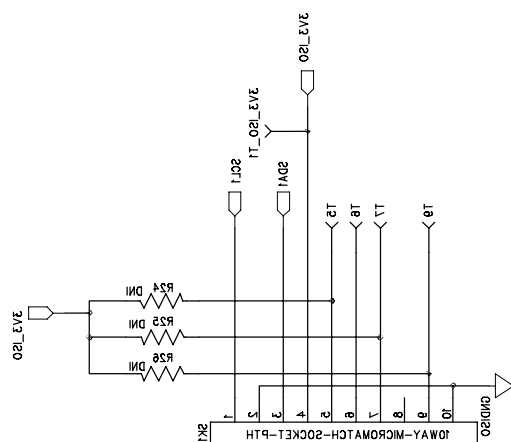
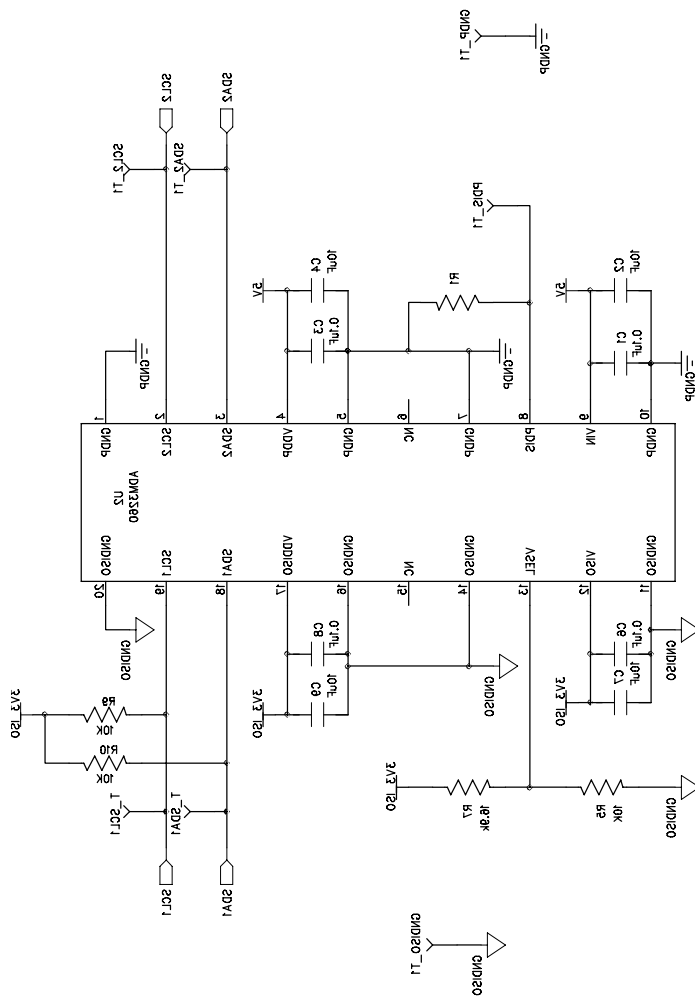


Figure 3. Board Connection Diagram

The diagram shows a 10-way microswitch socket circuit. It features a 24V AC source connected to a 20MΩ resistor and a 2C13 component. The circuit is divided into four parallel branches, each containing a 100KΩ resistor and a DI1 component. The output is connected to a 2K5 component.



Rev. 0 | Page 4 of 7

EVALUATION BOARD LAYOUT LAYERS

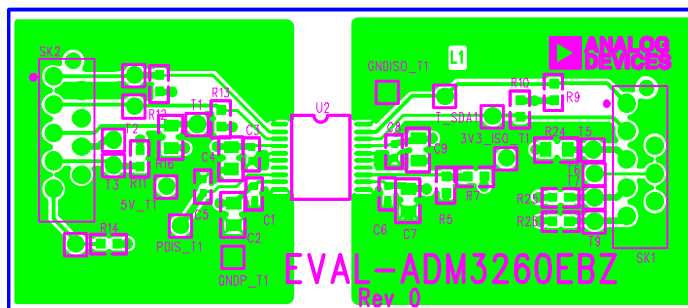


Figure 5. EVAL-ADM3260MEBZ Evaluation Board Layout Layer 1 and Top Silk Screen

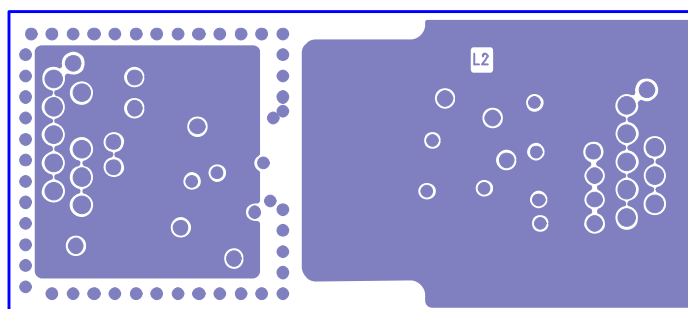


Figure 6. EVAL-ADM3260MEBZ Evaluation Board Layout, Layer 2

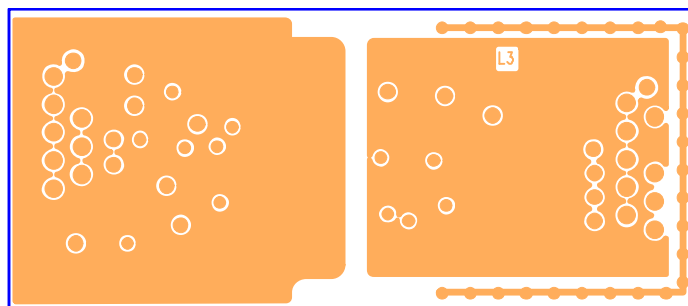


Figure 7. EVAL-ADM3260MEBZ Evaluation Board Layout, Layer 3

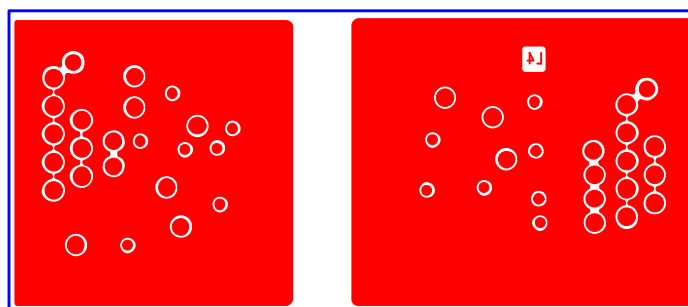


Figure 8. EVAL-ADM3260MEBZ Evaluation Board Layout, Layer 4

ORDERING INFORMATION

BILL OF MATERIALS

Table 1.

Name	Part Description	Value ¹	Manufacturer ²	Part Number	Stock Code
3V3_ISO_T1		DNI	FEC 240-333		
5V_T1		DNI	FEC 240-333		
C1	Capacitor, 100 nF, 16 V, X7R	0.1 µF	Kemet	C0402C104K4RAC	FEC 1288252
C2	10 µF capacitor, 0805 X7R 6.3 V	10 µF	Taiyo Yuden	JMK212B7106KG-T	FEC 2112846
C3	Capacitor, 100 nF, 16 V, X7R	0.1 µF	Kemet	C0402C104K4RAC	FEC 1288252
C4	10 µF capacitor, 0805, X7R, 6.3 V	10 µF	Taiyo Yuden	JMK212B7106KG-T	FEC 2112846
C6	Capacitor, 100 nF, 16 V, X7R	0.1 µF	Kemet	C0402C104K4RAC	FEC 1288252
C7	10 µF capacitor, 0805, X7R, 6.3 V	10 µF	Taiyo Yuden	JMK212B7106KG-T	FEC 2112846
C8	Capacitor, 100 nF, 16 V, X7R	0.1 µF	Kemet	C0402C104K4RAC	FEC 1288252
C9	10 µF capacitor, 0805, X7R, 6.3 V	10 µF	Taiyo Yuden	JMK212B7106KG-T	FEC 2112846
GNDISO_T1		DNI	FEC		FEC 240-333
GNDP_T1		DNI	FEC		
PDIS_T1		DNI	FEC		
R1	Resistor, thick, 0 Ω, 0.1 W	0 Ω	Panasonic	ERJ2GE0R00X	FEC 2059190RL
R5	Resistor 0603 1% 10 kΩ	10 kΩ	Vishay Draloric	CRCW060310K0FKEAHP	FEC 1738918
R7	Resistor 0603 1%	16.9 kΩ	Panasonic	ERJP03F1692V	FEC 2311984
R9	Resistor 0603 1% 10 kΩ	10 kΩ	Vishay Draloric	CRCW060310K0FKEAHP	FEC 1738918
R10	Resistor 0603 1% 10 kΩ	10 kΩ	Vishay Draloric	CRCW060310K0FKEAHP	FEC 1738918
R11	Resistor				DNI
R12	Resistor, 0603, 100 kΩ	100 kΩ	Vishay Draloric	CRCW0603100KFKEA	FEC 2122619
R13	Resistor, 0603, 100 kΩ	100 kΩ	Vishay Draloric	CRCW0603100KFKEA	FEC 2122619
R14	Resistor				DNI
R16	Resistor				DNI
R24	Resistor				DNI
R25	Resistor				DNI
R26	Resistor				DNI
SCL2_T1		DNI	FEC 240-333		
SDA2_T1		DNI	FEC 240-333		
SK1	10-way female PTH Micro-MaTch		TE Connectivity	8-215079-0	FEC 148600
SK2	10-way female PTH Micro-MaTch		TE Connectivity	8-215079-0	FEC 148600
T1		DNI	FEC		
T2		DNI	FEC		FEC 240-333
T3		DNI	FEC		
T4		DNI	FEC		
T5		DNI	FEC		
T6		DNI	FEC		
T7		DNI	FEC		
T9		DNI	FEC		FEC 240-333
T_SCL1		DNI	FEC		
T_SDA1		DNI	FEC 240-333		
U2	I ² C isolators with integrated dc-to-dc converter		Analog Devices, Inc.	ADM3260	ADM3260ARSZ
	10 way Micro-MaTch cable		TT	1483353-1	FEC 1056216

¹ N/A = not applicable and DNI = do not install.² FEC = Farnell Electronics Components.

NOTES



ESD Caution

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

Legal Terms and Conditions

By using the evaluation board discussed herein (together with any tools, components documentation or support materials, the "Evaluation Board"), you are agreeing to be bound by the terms and conditions set forth below ("Agreement") unless you have purchased the Evaluation Board, in which case the Analog Devices Standard Terms and Conditions of Sale shall govern. Do not use the Evaluation Board until you have read and agreed to the Agreement. Your use of the Evaluation Board shall signify your acceptance of the Agreement. This Agreement is made by and between you ("Customer") and Analog Devices, Inc. ("ADI"), with its principal place of business at One Technology Way, Norwood, MA 02062, USA. Subject to the terms and conditions of the Agreement, ADI hereby grants to Customer a free, limited, personal, temporary, non-exclusive, non-sublicensable, non-transferable license to use the Evaluation Board FOR EVALUATION PURPOSES ONLY. Customer understands and agrees that the Evaluation Board is provided for the sole and exclusive purpose referenced above, and agrees not to use the Evaluation Board for any other purpose. Furthermore, the license granted is expressly made subject to the following additional limitations: Customer shall not (i) rent, lease, display, sell, transfer, assign, sublicense, or distribute the Evaluation Board; and (ii) permit any Third Party to access the Evaluation Board. As used herein, the term "Third Party" includes any entity other than ADI, Customer, their employees, affiliates and in-house consultants. The Evaluation Board is NOT sold to Customer; all rights not expressly granted herein, including ownership of the Evaluation Board, are reserved by ADI. **CONFIDENTIALITY.** This Agreement and the Evaluation Board shall all be considered the confidential and proprietary information of ADI. Customer may not disclose or transfer any portion of the Evaluation Board to any other party for any reason. Upon discontinuation of use of the Evaluation Board or termination of this Agreement, Customer agrees to promptly return the Evaluation Board to ADI. **ADDITIONAL RESTRICTIONS.** Customer may not disassemble, decompile or reverse engineer chips on the Evaluation Board. Customer shall inform ADI of any occurred damages or any modifications or alterations it makes to the Evaluation Board, including but not limited to soldering or any other activity that affects the material content of the Evaluation Board. Modifications to the Evaluation Board must comply with applicable law, including but not limited to the RoHS Directive. **TERMINATION.** ADI may terminate this Agreement at any time upon giving written notice to Customer. Customer agrees to return to ADI the Evaluation Board at that time. **LIMITATION OF LIABILITY.** THE EVALUATION BOARD PROVIDED HEREUNDER IS PROVIDED "AS IS" AND ADI MAKES NO WARRANTIES OR REPRESENTATIONS OF ANY KIND WITH RESPECT TO IT. ADI SPECIFICALLY DISCLAIMS ANY REPRESENTATIONS, ENDORSEMENTS, GUARANTEES, OR WARRANTIES, EXPRESS OR IMPLIED, RELATED TO THE EVALUATION BOARD INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, TITLE, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. IN NO EVENT WILL ADI AND ITS LICENSORS BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES RESULTING FROM CUSTOMER'S POSSESSION OR USE OF THE EVALUATION BOARD, INCLUDING BUT NOT LIMITED TO LOST PROFITS, DELAY COSTS, LABOR COSTS OR LOSS OF GOODWILL. ADI'S TOTAL LIABILITY FROM ANY AND ALL CAUSES SHALL BE LIMITED TO THE AMOUNT OF ONE HUNDRED US DOLLARS (\$100.00). **EXPORT.** Customer agrees that it will not directly or indirectly export the Evaluation Board to another country, and that it will comply with all applicable United States federal laws and regulations relating to exports. **GOVERNING LAW.** This Agreement shall be governed by and construed in accordance with the substantive laws of the Commonwealth of Massachusetts (excluding conflict of law rules). Any legal action regarding this Agreement will be heard in the state or federal courts having jurisdiction in Suffolk County, Massachusetts, and Customer hereby submits to the personal jurisdiction and venue of such courts. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Agreement and is expressly disclaimed.