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 the USB-SDP-CABLEZ dongle through the use of the ADM3260 hot swappable, dual I²C isolators with integrated dc-to-dc converter. See Figure 2 and Figure 3 for an example of a USB-SDP-CABLEZ and EVAL-ADM3260MEBZ setup.

The EVAL-ADM3260MEBZ evaluation board is 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 kit, with I²C signal communication and power delivery 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.

For full details, see the ADM3260 data sheet, which must be used in conjunction with this user guide when using the evaluation board.
BOARD CONNECTION

Figure 2 and Figure 3 provide an example of the USB-SDP-CABLEZ and EVAL-ADM3260MEBZ setups.
Figure 4. EVAL-ADM3260MEBZ Evaluation Board Schematic
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 1

Figure 7. EVAL-ADM3260MEBZ Evaluation Board Layout, Layer 2

Figure 8. EVAL-ADM3260MEBZ Evaluation Board Layout, Layer 3
Figure 9. EVAL-ADM3260MEBZ Evaluation Board Layout, Layer 4 (Bottom)
ORDERING INFORMATION

BILL OF MATERIALS

Table 1.

<table>
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<th>Quantity</th>
<th>Reference Designator</th>
<th>Part Description</th>
<th>Manufacturer/Part Number</th>
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<td>C1, C3, C6, C8</td>
<td>0.1 µF, 0402, X7R, capacitors</td>
<td>Kemet/C0402C104K4RAC</td>
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<td>TE Connectivity/8-215079-0</td>
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<td>17</td>
<td>3V3_ISO_T1, SV_T1, GNDISO_T1, GNDP_T1, PDIS_T1, SCL2_T1, SDA2_T1 to SDA2-T7, T9, T_SCL1, T_SDA1</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>6</td>
<td>R11, R14, R16, R24, R25, R26</td>
<td>Do not insert, resistor</td>
<td>Analog Devices/ADM3260AR SZ</td>
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<tr>
<td>1</td>
<td>U2</td>
<td>Hot swappable, dual I²C isolators with integrated dc-to-dc converter</td>
<td>Analog Devices/ADM3260AR SZ</td>
</tr>
</tbody>
</table>

I²C refers to a communications protocol originally developed by Philips Semiconductors (now NXP Semiconductors).

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