This user’s guide describes the characteristics, operation, and use of the ISO224EVM. This evaluation module (EVM) is an evaluation and development kit for evaluating the ISO224 precision isolation amplifier. A complete circuit description as well as schematic diagram and bill of materials are included.

The following related documents are available through the Texas Instruments web site at www.ti.com.

### Related Documentation

<table>
<thead>
<tr>
<th>Device</th>
<th>Literature Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO224</td>
<td>SBAS738</td>
</tr>
<tr>
<td>SN6501</td>
<td>SLLSEA0</td>
</tr>
<tr>
<td>TLV6001</td>
<td>SBOS779</td>
</tr>
<tr>
<td>OPA277</td>
<td>SBOS079</td>
</tr>
</tbody>
</table>

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1 EVM Overview

1.1 Features

This EVM supports the following features:

• Full-featured evaluation board for the ISO224 single-channel precision isolation amplifier
• Screw terminals for easy access to analog inputs and outputs
• Transformer and rectifiers to provide isolated power to VDD1 from VDD2
• Differential to Single-ended output options

1.2 Introduction

The ISO224 is a precision isolation amplifier with an output separated from the input circuitry by a silicon dioxide (SiO₂) barrier that is highly resistant to magnetic interference. This barrier has been certified to provide basic galvanic isolation of up to 7000 V_{PEAK} according to UL1577 and IEC60747-5-2 specifications.

The input of the ISO224 is optimized for accurate sensing of ±10 V signals that are widely used in industrial applications. The ISO224 operates on a single 5 V power supply on the high-side which dramatically simplifies the design of the isolated power supply which reduces overall system costs.

Throughout this document, the abbreviation EVM and the term evaluation module are synonymous with the ISO224EVM.

2 Analog Interface

The analog input to the ISO224 is routed from a two-wire screw terminal at J2 which provides access to the VINP terminal. An RC low-pass filter is provided between J2 and the VIN terminal (pin 2) of the ISO224.

2.1 Analog Inputs

The analog input to the ISO224EVM printed-circuit board (PCB) consists of screw terminal J2 and a low-pass RC filter circuit. The maximum input voltage range to the ISO224 is ±12 V. An example input circuit for the ISO224 is shown in Figure 1.

![Figure 1. ISO224EVM Schematic: Analog Input Section](image-url)
2.2 Analog Output

The analog output from the ISO224EVM board is a fully-differential signal centered at VDD2/2. The output is available on test point TP3. Two differential to single ended output options are also included on the ISO224EVM. U4, an OPA277, provides a bi-polar output signal when the shunt on JP2 covers pins 1-2. U5, a TLV6001, provides a level shifted unipolar output when the shunt on JP2 covers pins 2-3. In either case, the single ended output is provided at the screw terminals of J4, as Figure 2 shows.

Figure 2. ISO224EVM Schematic: Analog Output Section

3 Power Supplies

The ISO224 requires two separate power rails, VDD1 and VDD2. VDD1 is on the high voltage side of the amplifier. VDD2 is on the user side of the amplifier.

3.1 VDD1 Input

J1 provides access to the VDD1 supply. For power provided from high-side isolated rails (such as from a gate-drive supply), move the shunt on jumper JP1 to cover pins 2 and 3. Use a voltage between 4.5 VDC and 18 VDC for the user-applied VDD1 supply. In the EVM default configuration, VDD1 is provided from VDD2 by means of U1, a 5 V LDO an isolation transformer and U3, an SN6501 transformer driver. In the default configuration, apply 5 V to VDD2 through J3. The input power is shown in Figure 3.

Figure 3. VDD1 Input
3.2 **VDD2 Input**

The user side of the ISO224 isolation amplifier is rated for 4.5 V\textsubscript{DC} to 5.5 V\textsubscript{DC} and is applied to the amplifier using J3. Figure 4 illustrates the power input for VDD2. Power for U4 is provided via three-terminal screw connector J5. The typical voltage input for J5 would be ± 15 V\textsubscript{DC}.

![Figure 4. VDD2 and U4 Input Power Connector](image)

4 **EVM Operation**

This section describes the general operation of the ISO224EVM.

4.1 **Isolated Power and Analog Inputs: J1 and J2**

The analog input to the ISO224EVM board can be applied directly to J2 pins 1 and 2.

**CAUTION**

For the limitations of the analog input range, and to ensure that the appropriate analog and digital voltages are applied before connecting any analog input to the EVM, see *ISO224x ±12-V Single-Ended Input Isolation Amplifier*.

Table 1 summarizes the details of J2.

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J2.1</td>
<td>VIN</td>
<td>Bipolar input to the ISO224 (pin 2)</td>
</tr>
<tr>
<td>J2.2</td>
<td>GND1</td>
<td>Ground reference for the analog input</td>
</tr>
</tbody>
</table>

The isolated power input to the ISO224 EVM PCB can be applied directly to J1, pins 1 and 2. Table 2 lists the details of J1.

**Table 2. J1: Isolated Power**

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1.1</td>
<td>VDD1</td>
<td>Connection to the ISO224 VDD1 terminal (pin 3)</td>
</tr>
<tr>
<td>J1.2</td>
<td>GND1</td>
<td>Connection to the ISO224 GND1 terminal (pin 4)</td>
</tr>
</tbody>
</table>
4.2 User Power and Analog Output: J3 and J4

The VDD2 power input to the ISO224EVM PCB can be applied directly to J3, pins 1 and 2. Table 3 lists the details of J3.

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J3.1</td>
<td>VDD2</td>
<td>Connection to the ISO224 VDD terminal (pin 8)</td>
</tr>
<tr>
<td>J3.2</td>
<td>GND2</td>
<td>Connection to the ISO224 GND2 terminal (pin 5)</td>
</tr>
</tbody>
</table>

The analog output from the ISO224EVM board is applied directly to J4, pins 1 and 2. Table 4 summarizes the details of J4.

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J4.1</td>
<td>VOUT</td>
<td>Analog output from U4 or U5 via JP2</td>
</tr>
<tr>
<td>J4.2</td>
<td>GND2</td>
<td>Ground reference for the analog output</td>
</tr>
</tbody>
</table>

Power for U4 may be applied through J5, pins 1, 2 and 3. Table 5 summarizes the details of J5.

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J5.1</td>
<td>VDD</td>
<td>Positive Supply Rail for U5</td>
</tr>
<tr>
<td>J5.2</td>
<td>GND2</td>
<td>Ground reference for the analog output</td>
</tr>
<tr>
<td>J5.3</td>
<td>VSS</td>
<td>Negative Supply Rail for U5</td>
</tr>
</tbody>
</table>

4.3 Device Operation

After the VDD1 and VDD2 power is applied to the ISO224EVM, the analog output is available with a fixed gain of 1/3 V/V and a dc offset equal to VDD2/2.

An analog input signal may be applied directly at screw terminal J2. Refer to Figure 1 and Table 1 for details. The single-ended analog input range, (VIN) is specified at ±12 V maximum.

The analog output has a nominal gain of 1/3 through the ISO224 isolation amplifier. With an input voltage of ±12 V, the nominal output is therefore ±4.0 V differential. The output voltage is centered on VDD2/2 and presented on TP3. To facilitate single-ended outputs, U4 and U5 are also included with the ISO224EVM. U4 provides a gain of 3 V/V to recover the original magnitude of the analog input signal. U5 provides level shifting and unity gain. The outputs of U4 or U5 are provided on J4 depending on the location of the shunt on JP2.
5 Layout, BOM, and Schematic

This sections contains the PCB layout, bill of materials, and schematic of the ISO224EVM.

5.1 Layout

Figure 5 shows the ISO224 PCB layout.

NOTE: Board layout is not to scale. Figure 5 shows how the board is laid out. It is not intended to be used for manufacturing ISO224EVM PCBs.
5.2 Bill of Material

The bills of material is listed in Table 6.

NOTE: All components should be RoHS compliant. Some part numbers may be either leaded or RoHS. Verify that purchased components are RoHS compliant.

Table 6. ISO224EVM Bill of Materials

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>Ref Des</th>
<th>Description</th>
<th>Manufacturer</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>C1, C4, C6, C10</td>
<td>CAP, CERM, 10 μF, 16 V, +/- 10%, X5R, 0805</td>
<td>TDK</td>
<td>C20125R1H475K125AB</td>
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<tr>
<td>2</td>
<td>1</td>
<td>C2</td>
<td>CAP, CERM, 820 pF, 50 V, +/- 5%, C0G/NP0, 0805</td>
<td>AVX</td>
<td>08058A821JAT2A</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>C3, C12</td>
<td>CAP, CERM, 1 μF, 25 V, +/- 10%, X7R, 1206</td>
<td>AVX</td>
<td>12063C105KAT2A</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>C5</td>
<td>CAP, CERM, 0.1 μF, 25 V, +/- 10%, X7R, 0805</td>
<td>Kemet</td>
<td>C0805C104K3RACTU</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>C7</td>
<td>CAP, CERM, 0.22 μF, 16 V, +/- 10%, X7R, 0603</td>
<td>Wurth Elektronik</td>
<td>885012060648</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>C8, C9</td>
<td>CAP, CERM, 0.1 μF, 100 V, +/- 5%, X7R, 1206</td>
<td>AVX</td>
<td>12061C104JAT2A</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>C11, C14, C16, C18</td>
<td>CAP, CERM, 0.1 μF, 25 V, +/- 5%, X7R, 0603</td>
<td>AVX</td>
<td>06033C104JAT2A</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>C13, C17</td>
<td>CAP, CERM, 10 μF, 50 V, +/- 5%, C0G/NP0, 0603</td>
<td>Kemet</td>
<td>C0603C100J5GACTU</td>
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<tr>
<td>9</td>
<td>1</td>
<td>C15</td>
<td>CAP, CERM, 33 μF, 50 V, +/- 5%, C0G/NP0, 0603</td>
<td>Kemet</td>
<td>C0603C330J5GACTU</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>C19</td>
<td>CAP, CERM, 100 μF, 10 V, +/- 10%, X7R, 0603</td>
<td>AVX</td>
<td>0603ZC101KAT2A</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>D1, D2</td>
<td>Diode, Schottky, 20 V, 0.5 A, SOD-123</td>
<td>ON Semiconductor</td>
<td>MBR0520LT1G</td>
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<tr>
<td>12</td>
<td>4</td>
<td>J1, J2, J3, J4</td>
<td>Terminal Block, 3.5mm Pitch, 2x1, TH</td>
<td>On-Shore Technology</td>
<td>ED555/2DS</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>J5</td>
<td>Terminal Block, 3.5mm Pitch, 3x1, TH</td>
<td>On-Shore Technology</td>
<td>ED555/3DS</td>
</tr>
<tr>
<td>14</td>
<td>2</td>
<td>JP1, JP2</td>
<td>Header, 2mm, 3x1, Tin, TH</td>
<td>Samtec</td>
<td>TMM-103-01-T-S</td>
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<tr>
<td>15</td>
<td>1</td>
<td>R1</td>
<td>RES, 105, 1%, 0.125 W, AEC-Q200 Grade 0, 0805</td>
<td>Vishay-Dale</td>
<td>CRCW0805105RFKEA</td>
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<tr>
<td>16</td>
<td>5</td>
<td>R2, R3, R4, R5, R9</td>
<td>RES, 105 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603</td>
<td>Vishay-Dale</td>
<td>CRCW0603105KFKEA</td>
</tr>
<tr>
<td>17</td>
<td>2</td>
<td>R6, R10</td>
<td>RES, 301 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603</td>
<td>Vishay-Dale</td>
<td>CRCW0603301KFKEA</td>
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<tr>
<td>18</td>
<td>2</td>
<td>R7, R8</td>
<td>RES, 210 k, 1%, 0.1 W, 0603</td>
<td>Yageo America</td>
<td>RC0603FR-07210KL</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>R11</td>
<td>RES, 47.0, 1%, 0.1 W, 0603</td>
<td>Yageo America</td>
<td>RC0603FR-0747RL</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
<td>SH-JP1, SH-JP2</td>
<td>Shunt, 2mm, Gold plated, Black</td>
<td>Samtec</td>
<td>2SN-BK-G</td>
</tr>
<tr>
<td>21</td>
<td>1</td>
<td>T1</td>
<td>Transformer, 340μH, SMT</td>
<td>Wurth Elektronik</td>
<td>750313769</td>
</tr>
<tr>
<td>22</td>
<td>2</td>
<td>TP2, TP4</td>
<td>Terminal, Turret, TH, Double</td>
<td>Keystone</td>
<td>1502-2</td>
</tr>
<tr>
<td>23</td>
<td>1</td>
<td>U1</td>
<td>Single Output LDO, 150 mA, Fixed 5 V Output</td>
<td>Texas Instruments</td>
<td>TLV70450DBVT</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
<td>U2</td>
<td>Isolated Amplifier with ±12 V Input and Differential Output</td>
<td>Texas Instruments</td>
<td>ISO224DWVR</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>U3</td>
<td>Low-Noise 350 mA, 410 kHz Transformer Driver</td>
<td>Texas Instruments</td>
<td>SN6501DBVR</td>
</tr>
<tr>
<td>26</td>
<td>1</td>
<td>U4</td>
<td>High Precision Operational Amplifier, 4 to 36 V</td>
<td>Texas Instruments</td>
<td>OPA277UA</td>
</tr>
<tr>
<td>27</td>
<td>1</td>
<td>U5</td>
<td>1-MHz, Low-Power Operational Amplifier</td>
<td>Texas Instruments</td>
<td>TLV6001UDBVR</td>
</tr>
</tbody>
</table>
5.3 Schematic

Figure 6 illustrates the ISO224EVM schematic.
STANDARD TERMS FOR EVALUATION MODULES

1. Delivery: TI delivers TI evaluation boards, kits, or modules, including any accompanying demonstration software, components, and/or documentation which may be provided together or separately (collectively, an “EVM” or “EVMs”) to the User (“User”) in accordance with the terms set forth herein. User's acceptance of the EVM is expressly subject to the following terms.

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3 Regulatory Notices:

3.1 United States

3.1.1 Notice applicable to EVMs not FCC-Approved:

FCC NOTICE: This kit is designed to allow product developers to evaluate electronic components, circuitry, or software associated with the kit to determine whether to incorporate such items in a finished product and software developers to write software applications for use with the end product. This kit is not a finished product and when assembled may not be resold or otherwise marketed unless all required FCC equipment authorizations are first obtained. Operation is subject to the condition that this product not cause harmful interference to licensed radio stations and that this product accept harmful interference. Unless the assembled kit is designed to operate under part 15, part 18 or part 95 of this chapter, the operator of the kit must operate under the authority of an FCC license holder or must secure an experimental authorization under part 5 of this chapter.

3.1.2 For EVMs annotated as FCC – FEDERAL COMMUNICATIONS COMMISSION Part 15 Compliant:

CAUTION
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Interference Statement for Class A EVM devices

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
FCC Interference Statement for Class B EVM devices

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

3.2 Canada

3.2.1 For EVMs issued with an Industry Canada Certificate of Conformance to RSS-210 or RSS-247

Concerning EVMs Including Radio Transmitters:

This device complies with Industry Canada license-exempt RSSs. Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

Concernant les EVMs avec appareils radio:

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Concerning EVMs Including Detachable Antennas:

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. This radio transmitter has been approved by Industry Canada to operate with the antenna types listed in the user guide with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Concernant les EVMs avec antennes détachables

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante. Le présent émetteur radio a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés dans le manuel d'usage et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

3.3 Japan

3.3.1 Notice for EVMs delivered in Japan: Please see http://www.tij.co.jp/ldds/ltja/general/eStore/notice_01.page 日本国内に輸入される評価用キット、ボードについては、次のところをご覧ください。
http://www.tij.co.jp/ldds/ltja/general/eStore/notice_01.page

3.3.2 Notice for Users of EVMs Considered “Radio Frequency Products” in Japan: EVMs entering Japan may not be certified by TI as conforming to Technical Regulations of Radio Law of Japan.

If User uses EVMs in Japan, not certified to Technical Regulations of Radio Law of Japan, User is required to follow the instructions set forth by Radio Law of Japan, which includes, but is not limited to, the instructions below with respect to EVMs (which for the avoidance of doubt are stated strictly for convenience and should be verified by User):

1. Use EVMs in a shielded room or any other test facility as defined in the notification #173 issued by Ministry of Internal Affairs and Communications on March 28, 2006, based on Sub-section 1.1 of Article 6 of the Ministry’s Rule for Enforcement of Radio Law of Japan.
2. Use EVMs only after User obtains the license of Test Radio Station as provided in Radio Law of Japan with respect to EVMs, or
3. Use of EVMs only after User obtains the Technical Regulations Conformity Certification as provided in Radio Law of Japan with respect to EVMs. Also, do not transfer EVMs, unless User gives the same notice above to the transferee. Please note that if User does not follow the instructions above, User will be subject to penalties of Radio Law of Japan.
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2. 実験局の免許を取得後ご使用いただく。
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3.3.3 Notice for EVMs for Power Line Communication: Please see http://www.tij.co.jp/ltds/ti_ja/general/eStore/notice_02.page

3.4 European Union
3.4.1 For EVMs subject to EU Directive 2014/30/EU (Electromagnetic Compatibility Directive):
This is a class A product intended for use in environments other than domestic environments that are connected to a low-voltage power-supply network that supplies buildings used for domestic purposes. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

4 EVM Use Restrictions and Warnings:
4.1 EVMs are not for use in functional safety and/or safety critical evaluations, including but not limited to evaluations of life support applications.
4.2 User must read and apply the user guide and other available documentation provided by TI regarding the EVM prior to handling or using the EVM, including without limitation any warning or restriction notices. The notices contain important safety information related to, for example, temperatures and voltages.
4.3 Safety-Related Warnings and Restrictions:
4.3.1 User shall operate the EVM within TI’s recommended specifications and environmental considerations stated in the user guide, other available documentation provided by TI, and any other applicable requirements and employ reasonable and customary safeguards. Exceeding the specified performance ratings and specifications (including but not limited to input and output voltage, current, power, and environmental ranges) for the EVM may cause personal injury or death, or property damage. If there are questions concerning performance ratings and specifications, User should contact a TI field representative prior to connecting interface electronics including input power and intended loads. Any loads applied outside of the specified output range may also result in unintended and/or inaccurate operation and/or possible permanent damage to the EVM and/or interface electronics. Please consult the EVM user guide prior to connecting any load to the EVM output. If there is uncertainty as to the load specification, please contact a TI field representative. During normal operation, even with the inputs and outputs kept within the specified allowable ranges, some circuit components may have elevated case temperatures. These components include but are not limited to linear regulators, switching transistors, pass transistors, current sense resistors, and heat sinks, which can be identified using the information in the associated documentation. When working with the EVM, please be aware that the EVM may become very warm.
4.3.2 EVMs are intended solely for use by technically qualified, professional electronics experts who are familiar with the dangers and application risks associated with handling electrical mechanical components, systems, and subsystems. User assumes all responsibility and liability for proper and safe handling and use of the EVM by User or its employees, affiliates, contractors or designees. User assumes all responsibility and liability to ensure that any interfaces (electronic and/or mechanical) between the EVM and any human body are designed with suitable isolation and means to safely limit accessible leakage currents to minimize the risk of electrical shock hazard. User assumes all responsibility and liability for any improper or unsafe handling or use of the EVM by User or its employees, affiliates, contractors or designees.
4.4 User assumes all responsibility and liability to determine whether the EVM is subject to any applicable international, federal, state, or local laws and regulations related to User’s handling and use of the EVM and, if applicable, User assumes all responsibility and liability for compliance in all respects with such laws and regulations. User assumes all responsibility and liability for proper disposal and recycling of the EVM consistent with all applicable international, federal, state, and local requirements.

5. Accuracy of Information: To the extent TI provides information on the availability and function of EVMs, TI attempts to be as accurate as possible. However, TI does not warrant the accuracy of EVM descriptions, EVM availability or other information on its websites as accurate, complete, reliable, current, or error-free.
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