

ABSTRACT

This user's guide describes the characteristics, operation, and use of the LM60EVM evaluation board. This user's guide discusses the hardware, how to set up and configure the software, and reviews various aspects of the software operation. Throughout this document, the terms evaluation board, evaluation module, and EVM are synonymous with the LM60EVM. This user's guide also provides information on the operating procedure, input and output connections, an electrical schematic, printed circuit board (PCB) layout drawings, and a parts list for the EVM.

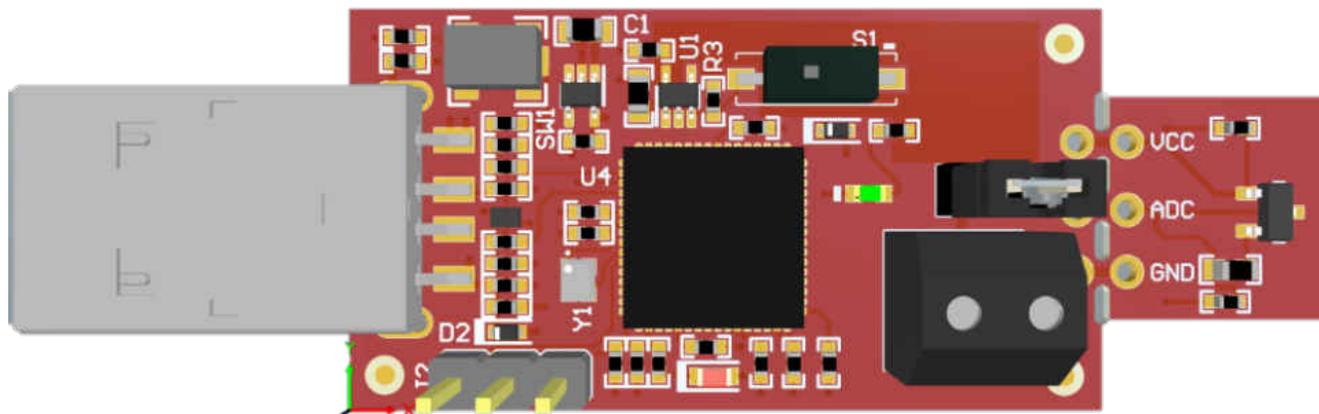


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1 Overview

The LM60EVM allows users to evaluate the performance of the LM60 analog temperature sensor. The EVM comes in a USB stick form factor for control and data logging, and has an onboard MSP430F5528 microcontroller that connects the host computer and the analog interface of the LM60 device. The module is designed with perforations between the sensor and host controller on the EVM board. The perforation allows the user flexibility in their evaluation:

- The user can connect the LM60 to the user's system/host.
- The user can connect the EVM host and software to the user's system with LM60 devices.
- Small individual boards allow the user to place sensors in the user's system.
- Hole spacing is compatible with common 0.1" prototyping breadboards.

1.1 Features

This EVM has the following features:

- Provides GUI for easy setup
- Perforated PCB allows for placement flexibility
- Two-pin header and wire terminal for connecting higher external power supply
- Software runs online or through offline installation

1.2 EVM Kit Contents

Table 1-1 details the contents of the EVM kit. Contact the nearest Texas Instruments Product Information Center if any components are missing. TI highly recommends that users check the TI website at <https://www.ti.com> to verify that they have the latest versions of the related software.

Table 1-1. EVM Kit Contents

Item	Quantity
LM60EVM	1

CAUTION

The LM60 integrated circuit and other components on the LM60EVM can be damaged by electrostatic discharge (ESD). Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure.



2 EVM Hardware

2.1 LM60EVM Board

Figure 2-1 shows an image of the LM60EVM with some of the hardware features of the design labeled.

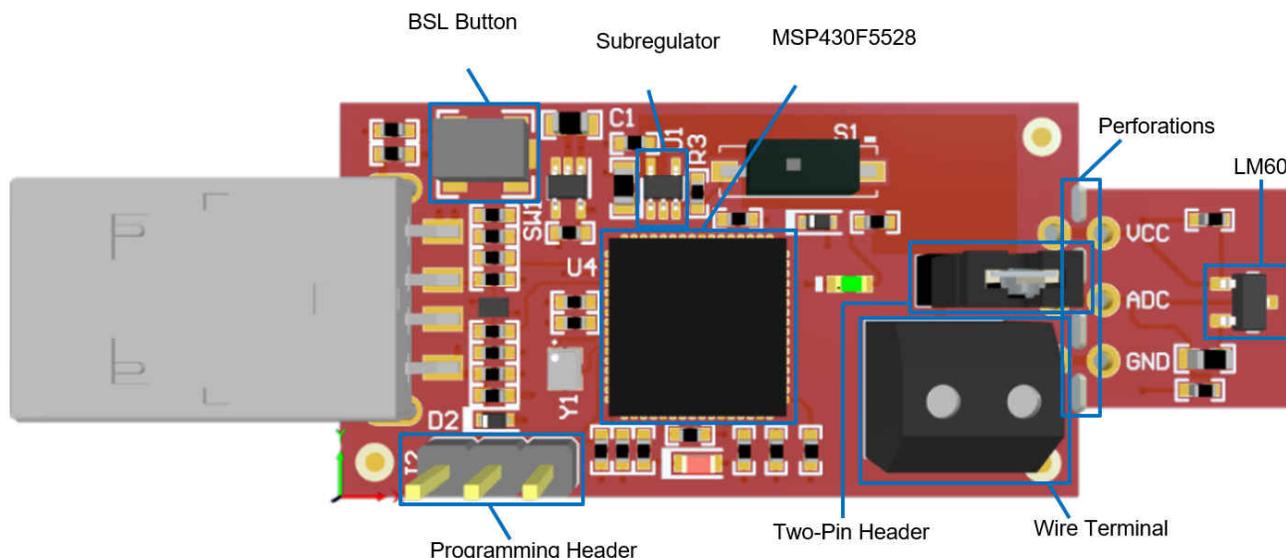


Figure 2-1. LM60EVM

2.2 Perforations

There are perforations between the USB controller and the LM60 sensor. These pins are labeled with their functions on the board silkscreen, and can be used to either debug or provide an electrical connection when the LM60 and controller board need to be separated for testing.

2.3 Subregulator

The onboard 3.3-V regulator (U1) is enabled and disabled with switch S1. The subregulator must be enabled for normal operation of the LM60EVM. The green LED (D3) illuminates when the subregulator is enabled.

2.4 Programming Header

The LM60EVM comes pre-loaded with firmware that is necessary for correct operation. Header J2 is provided for Spy-Bi-Wire access to the MSP430F5528, but TI does not recommend that users access this header or reprogram the device. This header may be required for recovery, however, if firmware corruption of the LM60EVM occurs at any point.

2.5 BSL Button

The LM60EVM features push-button SW1 for entering USB BSL mode. This can be used for any necessary firmware updates. This method is preferred over the use of the Spy-Bi-Wire programming header for firmware loading.

2.6 Wire Terminal and Two-Pin Header

The onboard wire terminal (J3) and two-pin header (J4) can be used to connect an external power supply of up to 10 V. In normal operation, connect the two-pin header using the provided two-pin header shunt. When connecting an external power supply, disconnect the header by removing the shunt and screw down the wire terminal to secure the external power supply wires in place.

2.7 EVM Operating Conditions

The LM60EVM power is supplied through the USB connector. The LDO (U1) converts the 5 V from the USB to 3.3 V used by the LM60 and the MSP430. The EVM may be directly inserted into a USB port on a PC or laptop, or may be connected to the latter using an appropriate USB cable. [Section 2.7](#) shows the different temperature limits for the the controller and device sides of the EVM. These are set by the onboard MSP430F5528 and the LM60 ICs on the controller and breakout portions, respectively.

Table 2-1. LM60EVM Temperature Limits

BOARD SECTION	CONDITIONS	TEMPERATURE RANGE
Controller Board	Recommended operating free-air temperature, T_A	-40 °C to 125 °C
	Absolute maximum junction temperature, T_J	95 °C
LM60 Breakout	Recommended operating free-air temperature, T_A	LM60B: -25 °C to 125 °C LM60C: -40 °C to 125 °C
	Absolute maximum junction temperature, T_J	125 °C

3 Software Download

The PC GUI Software for LM60EVM runs on TI's GUI Composer framework. The software is available as a live version that runs in a browser and as a download for offline use. The software is compatible with Microsoft® Windows®, macOS®, and Linux® operating systems.

3.1 Live Software on dev.ti.com

The live software currently works on Google Chrome™, Firefox®, and Safari® browsers. Internet Explorer® is not supported. Users can access the live version through one of the following actions:

- Go to the EVM tool page and click *View*.
- Go to https://dev.ti.com/gallery/info/THSApps/LM60_GUI and select the LM60 GUI from the gallery.
- Click the application icon within the gallery to launch the software. Click the prompt to install the TI Cloud Agent Bridge browser plugin.

3.2 Offline Software

3.2.1 Download from dev.ti.com

Users can access the latest version of the offline software by navigating to the live version as noted above. Look for the download icon and download both the application and runtime for the operating system (see [Figure 3-1](#)).

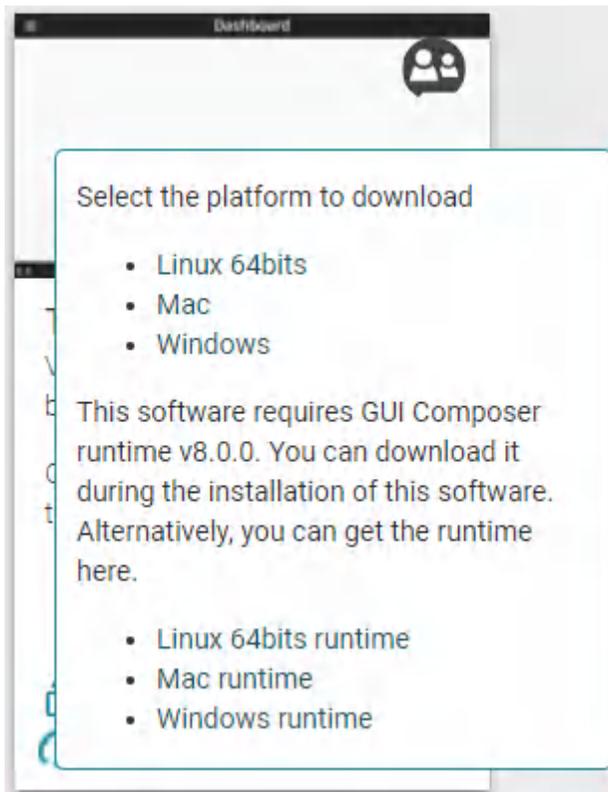


Figure 3-1. Download Pop-Up

4 Software

4.1 Home Tab

At start-up, the Home tab is displayed (Figure 4-1). Press the *Learn More* button to see device features and a pinout diagram. The Home tab has shortcut icons to the Data Capture and Collateral tabs for quick access.

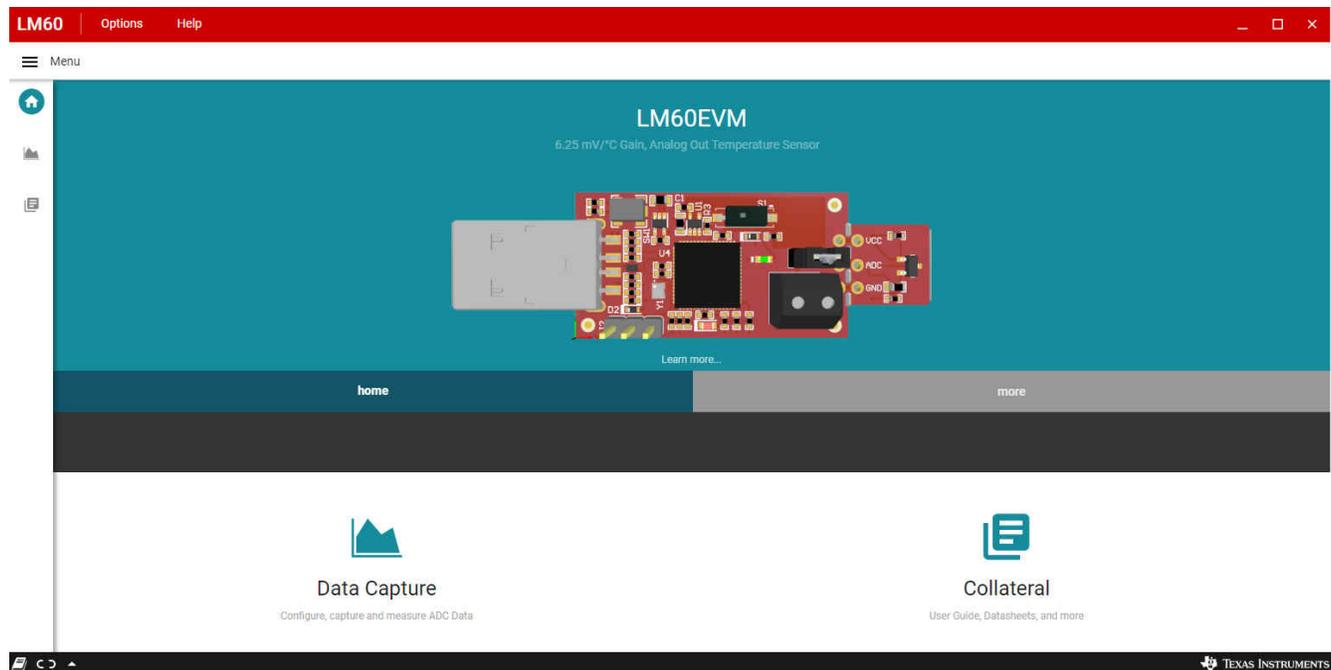


Figure 4-1. Home

4.2 Data Capture Tab

The *Save Start* and *Save Stop* buttons on the Data Capture tab allow the user to begin recording the temperature data in a .csv file. Press the *Save Start* button to start the download and press *Save Stop* to stop the download.

The Data Capture tab will automatically begin collecting temperature data when the application is launched. The data is displayed in a scalar graph and will default to a refresh rate of 1 second. The drop-down menu allows the user to change the refresh rate for the graph and temperature display. The options are the following:

- Off
- As Fast As Possible
- Every 500 ms
- Every 1 s
- Every 5 s
- Every 10 s
- Every 60 s

Additionally, the LM60EVM comes equipped with a firmware-based, low-pass filter to remove noise that can cause erroneous temperature measurements. This method eliminates the need for implementing an extra resistor and capacitor. The alpha value controls how much noise is filtered out. An alpha value of 1 (default) will behave like no filter is being used. On the other hand, an alpha value of 0.1 eliminates a lot of noise. Try inputting different alpha values between 0.001 and 1 to see how the filter response changes in real time.



Figure 4-2. Data Capture Without Filter



Figure 4-3. Data Capture After Filter Implemented

4.3 Collateral Tab

As [Figure 4-4](#) shows, the Collateral tab includes links to various related literature, including the device data sheet and any corresponding application notes.

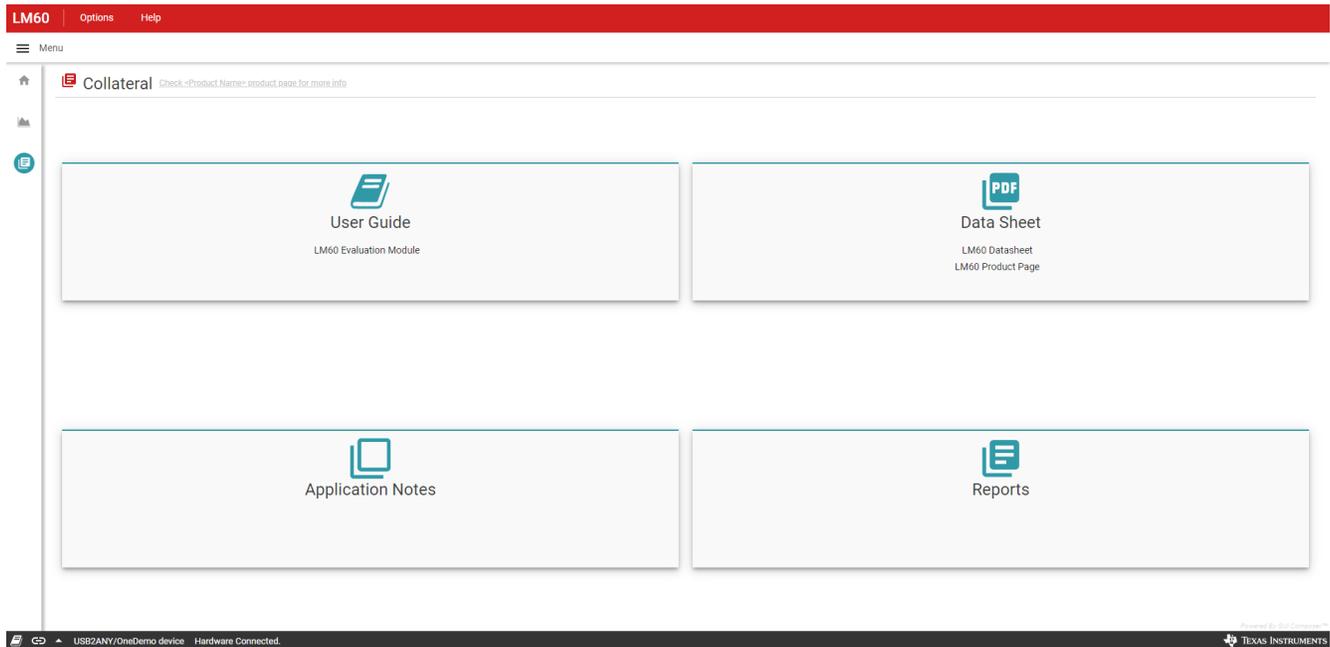


Figure 4-4. Collateral

5 Schematic, Board Layout and Bill of Materials

5.1 LM60 Schematic

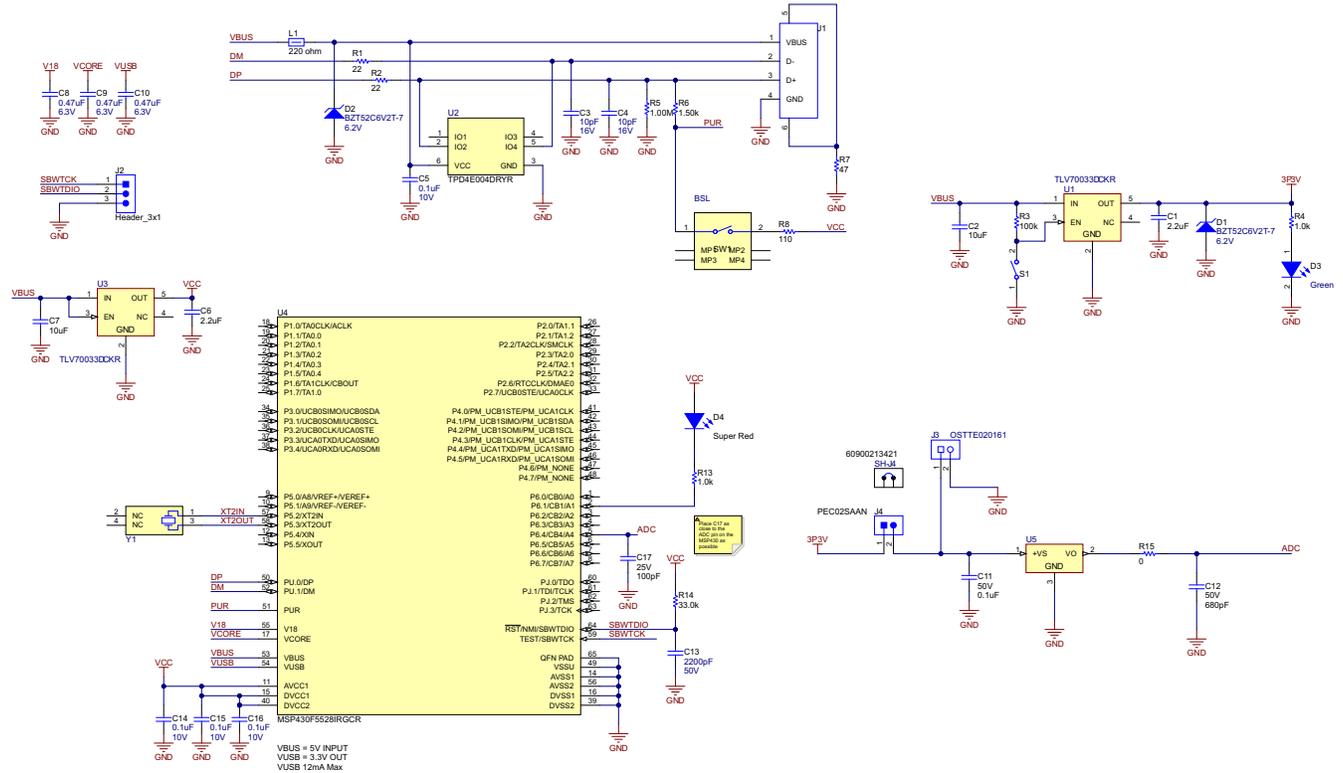


Figure 5-1. LM60 Schematic

5.2 PCB Layout

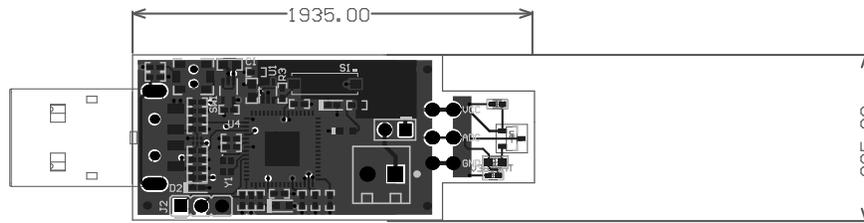


Figure 5-2. Top View

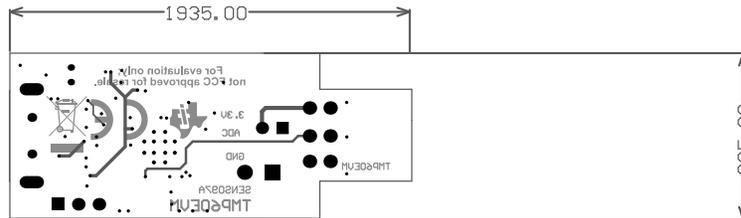


Figure 5-3. Bottom View

5.3 Bill of Materials

Table 5-1. Bill of Materials (BOM)

DESIGNATOR	QTY	VALUE	DESCRIPTION	PACKAGE REFERENCE	PART NUMBER	MANUFACTURER
!PCB1	1		Printed Circuit Board		SENS097	Any
C1, C6	2	2.2uF	CAP, CERM, 2.2 uF, 16 V, +/- 10%, X5R, 0402	0402	GRM155R61C225KE11D	MuRata
C2, C7	2	10uF	CAP, CERM, 10 uF, 10 V, +/- 20%, X5R, 0603	0603	C1608X5R1A106M080AC	TDK
C3, C4	2	10pF	CAP, CERM, 10 pF, 16 V,+/- 10%, C0G, 0402	0402	C0402C100K4GACTU	Kemet
C5, C14, C15, C16	4	0.1uF	CAP, CERM, 0.1 uF, 10 V,+/- 10%, X5R, 0402	0402	LMK105BJ104KV-F	Taiyo Yuden
C8, C9, C10	3	0.47uF	CAP, CERM, 0.47 uF, 6.3 V, +/- 10%, X7R, 0402	0402	JMK105B7474KVHF	Taiyo Yuden
C11	1	0.1uF	CAP, CERM, 0.1 uF, 50 V, +/- 10%, X5R, 0402	0402	C1005X5R1H104K050BB	TDK
C12	1	680pF	CAP, CERM, 680 pF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	0402	CGA2B2X7R1H681K050BA	TDK
C13	1	2200pF	CAP, CERM, 2200 pF, 50 V, +/- 5%, X7R, 0402	0402	CL05B222JB5NNNC	Samsung Electro-Mechanics
C17	1	100pF	CAP, CERM, 100 pF, 25 V, +/- 5%, C0G/NP0, 0402	0402	C0402C101J3GACTU	Kemet
D1, D2	2	6.2V	Diode, Zener, 6.2 V, 300 mW, SOD-523	SOD-523	BZT52C6V2T-7	Diodes Inc.
D3	1	Green	LED, Green, SMD	LED, GREEN, 0603	SML-LX0603GW-TR	Lumex
D4	1	Super Red	LED, Super Red, SMD	LED_0603	150060SS75000	Würth Elektronik
J1	1		Connector, Plug, USB Type A, R/A, Top Mount SMT	USB Type A right angle	48037-1000	Molex
J2	1		Header, 2.54 mm, 3x1, Gold, TH	Header, 2.54 mm, 3x1, TH	GBC03SAAN	Sullins Connector Solutions
J3	1		Terminal Block, 2x1, 3.5mm, TH	2x1 Terminal Block	OSTTE020161	On-Shore Technology
J4	1		Header, 100mil, 2x1, Tin, TH	Header, 2 PIN, 100mil, Tin	PEC02SAAN	Sullins Connector Solutions
L1	1	220 ohm	Ferrite Bead, 220 ohm @ 100 MHz, 0.45 A, 0402	0402	BLM15AG221SN1D	MuRata
R1, R2	2	22	RES, 22, 5%, 0.1 W, AEC-Q200 Grade 0, 0402	0402	ERJ-2GEJ220X	Panasonic
R3	1	100k	RES, 100 k, 5%, 0.1 W, AEC-Q200 Grade 0, 0402	0402	ERJ-2GEJ104X	Panasonic
R4, R13	2	1.0k	RES, 1.0 k, 5%, 0.1 W, AEC-Q200 Grade 0, 0402	0402	ERJ-2GEJ102X	Panasonic
R5	1	1.00Meg	RES, 1.00 M, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402	RMCF0402FT1M00	Stackpole Electronics Inc
R6	1	1.50k	RES, 1.50 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402	RMCF0402FT1K50	Stackpole Electronics Inc
R7	1	47	RES, 47, 5%, 0.1 W, AEC-Q200 Grade 0, 0402	0402	ERJ-2GEJ470X	Panasonic
R8	1	110	RES, 110, 1%, 0.1 W, AEC-Q200 Grade 0, 0402	0402	ERJ-2RKF1100X	Panasonic
R14	1	33.0k	RES, 33.0 k, 1%, 0.063 W, 0402	0402	RC0402FR-0733KL	Yageo America
R15	1	0	RES, 0, 0%, 0.25 W, AEC-Q200 Grade 0, 0603	0603	RCS06030000Z0EA	Vishay-Dale
S1	1		Switch, Slide, SPST, Top Slide, SMT	Switch, Single Top Slide, 2.5x8x2.5mm	CHS-01TB	Copal Electronics
SH-J4	1		Shunt, 2.54mm, Gold, Black	Shunt, 2.54mm, Black	60900213421	Würth Elektronik
SW1	1		Switch, SPST-NO, Off-Mom, 0.05A, 12VDC, SMD	3.9x2.9mm	PTS820 J20M SMTR LFS	C&K Components

Table 5-1. Bill of Materials (BOM) (continued)

DESIGNATOR	QTY	VALUE	DESCRIPTION	PACKAGE REFERENCE	PART NUMBER	MANUFACTURER
U1, U3	2		Single Output LDO, 200 mA, Fixed 3.3 V Output, 2 to 5.5 V Input, with Low IQ, 5-pin SC70 (DCK), -40 to 125 degC, Green (RoHS & no Sb/Br)	DCK0005A	TLV70033DCKR	Texas Instruments
U2	1		4-Channel ESD Protection Array for High-Speed Data Interfaces, DRY0006A (USON-6)	DRY0006A	TPD4E004DRYR	Texas Instruments
U4	1		16-Bit Ultra-Low-Power Microcontroller, 128KB Flash, 8KB RAM, USB, 12Bit ADC, 2 USCIs, 32Bit HW MPY, RGC0064B (VQFN-64)	RGC0064B	MSP430F5528IRGCR	Texas Instruments
U5	1		2.7V Temperature Sensor, 3-pin SOT-23, Pb-Free	DBZ0003A		Texas Instruments
Y1	1		Crystal, 24 MHz, SMD	2x1.6mm	XRCGB24M000F2P00R0	MuRata

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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2. *Limited Warranty and Related Remedies/Disclaimers:*
 - 2.1 These terms do not apply to Software. The warranty, if any, for Software is covered in the applicable Software License Agreement.
 - 2.2 TI warrants that the TI EVM will conform to TI's published specifications for ninety (90) days after the date TI delivers such EVM to User. Notwithstanding the foregoing, TI shall not be liable for a nonconforming EVM if (a) the nonconformity was caused by neglect, misuse or mistreatment by an entity other than TI, including improper installation or testing, or for any EVMs that have been altered or modified in any way by an entity other than TI, (b) the nonconformity resulted from User's design, specifications or instructions for such EVMs or improper system design, or (c) User has not paid on time. Testing and other quality control techniques are used to the extent TI deems necessary. TI does not test all parameters of each EVM. User's claims against TI under this Section 2 are void if User fails to notify TI of any apparent defects in the EVMs within ten (10) business days after delivery, or of any hidden defects with ten (10) business days after the defect has been detected.
 - 2.3 TI's sole liability shall be at its option to repair or replace EVMs that fail to conform to the warranty set forth above, or credit User's account for such EVM. TI's liability under this warranty shall be limited to EVMs that are returned during the warranty period to the address designated by TI and that are determined by TI not to conform to such warranty. If TI elects to repair or replace such EVM, TI shall have a reasonable time to repair such EVM or provide replacements. Repaired EVMs shall be warranted for the remainder of the original warranty period. Replaced EVMs shall be warranted for a new full ninety (90) day warranty period.

WARNING

Evaluation Kits 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 shall operate the Evaluation Kit within TI's recommended guidelines and any applicable legal or environmental requirements as well as reasonable and customary safeguards. Failure to set up and/or operate the Evaluation Kit within TI's recommended guidelines may result in personal injury or death or property damage. Proper set up entails following TI's instructions for electrical ratings of interface circuits such as input, output and electrical loads.

NOTE:

EXPOSURE TO ELECTROSTATIC DISCHARGE (ESD) MAY CAUSE DEGRADATION OR FAILURE OF THE EVALUATION KIT; TI RECOMMENDS STORAGE OF THE EVALUATION KIT IN A PROTECTIVE ESD BAG.

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/lstds/ti_ja/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/lstds/ti_ja/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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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.

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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.
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