

ADS1282-SP Overview User's Guide

This user's guide provides an introduction to the evaluation module (EVM) for the ADS1282-SP from TI.

1 ADS1282-SP EVM Kit Contents

The ADS1282-SP EVM is a compact evaluation kit for evaluating the ADS1282-SP, a radiation-tolerant, extremely high-performance, dual-channel ADC. The EVM is used in conjunction with the MSP430FR5969 LaunchPad™ EVM (not included with this kit). [Figure 1](#) shows an overview of the evaluation setup.

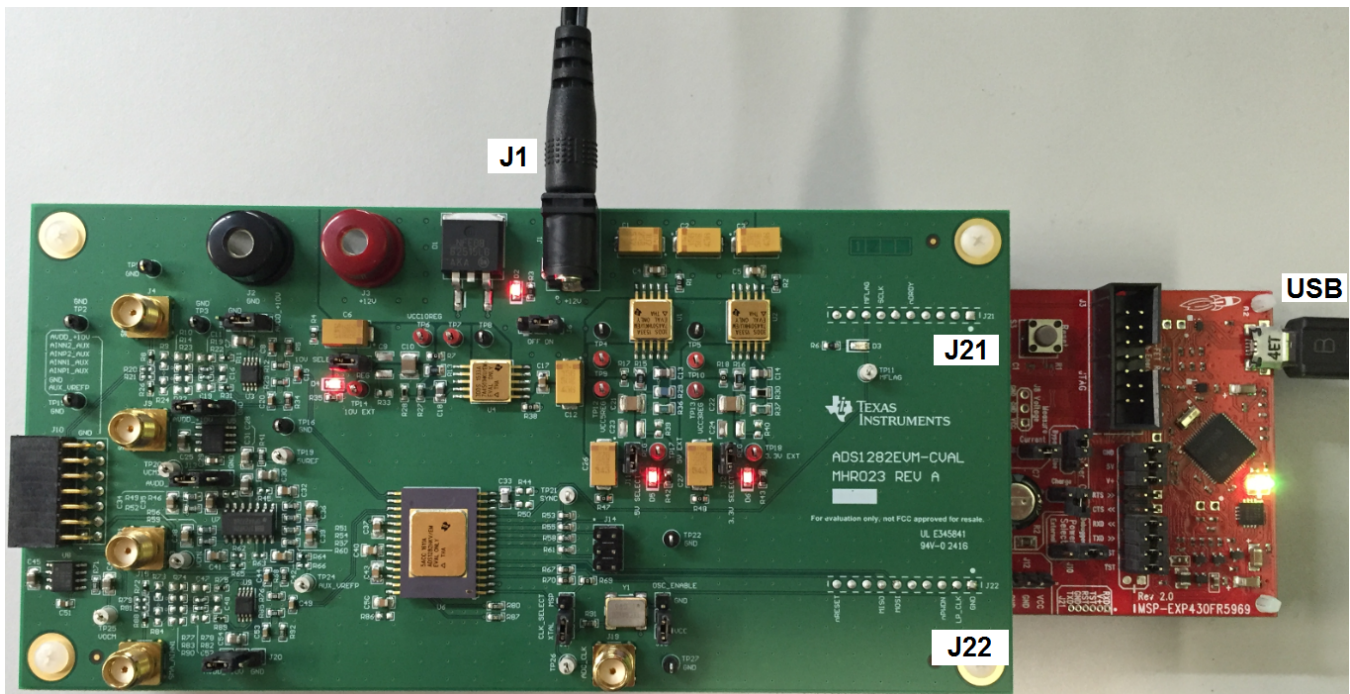


Figure 1. ADS1282-SP EVM (Green) With MSP430FR5969 LaunchPad (Red)

2 ADS1282-SP EVM Hardware Features

The ADS1282-SP EVM provides versatility to begin evaluation quickly and with little or no external equipment required. Power is provided to the ADS1282-SP EVM from a 12-V AC/DC adaptor (not included) to J1 or from a power supply to banana jacks J2 and J3. The EVM includes an on-board crystal oscillator to provide the sampling clock to the ADC with an option to provide an external clock for coherent sampling or a clock from the MSP430™. The analog inputs have provisions for several configurations including: (1) input through unity gain amplifier, (2) input DC-coupled to ADC pins from differential SMAs or from auxiliary jack.

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3 ADS1282-SP EVM Software Features

The *ADS1282-SP EVM GUI Software* ([SBAC150](#)) provides an easy interface in which to evaluate the ADS1282-SP performance. The stand-alone software controls the configuration of the ADS1282-SP as well as manages data capture via the MSP430 LaunchPad (not included). The GUI allows for one-click auto configuration of the ADS1282-SP using user-defined configurations. Data capture and analysis are performed in the GUI including time domain analysis and fast Fourier transform (FFT) analysis providing SNR, SINAD, SFDR, and harmonic distortion.

4 ADS1282-SP EVM Documentation

Complete EVM schematics and bill of materials (BOM) are available with the purchase of the EVM. In addition, MSP430 firmware source files are available to allow for quick customization. For more information on the EVM or to order the EVM, please use this link for support inquiries:

<http://e2e.ti.com/support/applications/hirel/>

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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.
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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.

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- 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

Concerning EVMs Including Radio Transmitters:

This device complies with Industry Canada license-exempt RSS standard(s). 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

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http://www.tij.co.jp/lstds/ti_ja/general/eStore/notice_01.page

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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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