

AFE58JD18 16-Channel Analog Front End Evaluation Module Overview (EVM Rev. B)

This user's guide provides an introduction to the evaluation module (EVM) for the AFE58JD18 from Texas Instruments.

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1 AFE58JD18 EVM Kit Contents

The AFE58JD18 EVM kit allows for quick and easy evaluation of the AFE58JD18, an analog front-end which can be configured to sample 16 channels and output the digital samples on an LVDS or JESD204B interface. The kit consists of (1) AFE58JD18EVM, (2) Power Cable, and (3) a USB cable for SPI communication to the software GUI. [Figure 1](#) shows an overview of the evaluation setup with the AFE58JD18 EVM.

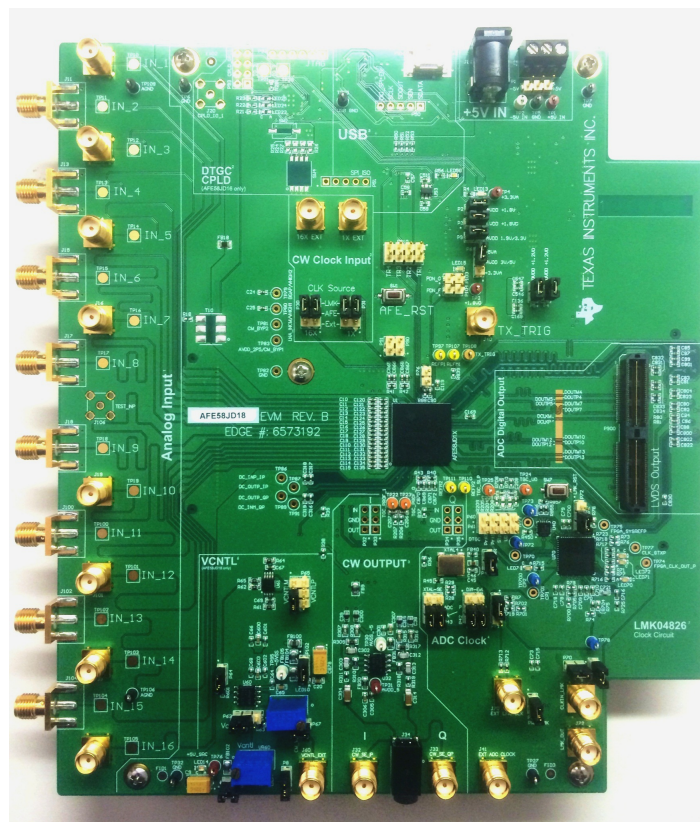


Figure 1. AFE58JD18 EVM

2 AFE58JD18 EVM Hardware Features

The AFE58JD18 EVM is a compact USB 2.0-based evaluation board for testing the AFE58JD18, an analog front-end with VCA, ADC, and I/Q Digital Demodulator. The EVM includes an FPGA Mezzanine Card (FMC) connector for connection to the FPGA-based capture card (TSW14J56) available from TI or for connection directly to FPGA vendors' development kits. A second connector on the EVM allows connection to the FPGA-based capture card (TSW1400) supporting an LVDS interface. Monitoring the power consumption of the individual power supply pins of the AFE58JD18 is possible via headers. Finally, the EVM provides a full clocking solution with the LMK04826 device providing all sampling clocks, SYSREF clocks, and FPGA reference clocks using pre-defined scripts to configure all with a single button click within the GUI.

3 AFE58JD18 EVM Software Features

The AFE58JD18 GUI software is integrated into a software suite called Healthtech Multi-Channel Data Acquisition GUI, or HMC-DAQ, which supports a family of devices from Texas Instruments. The GUI allows for one-click auto configuration of the AFE58JD18, and LMK04826 clocking solution provided on the EVM, using one of several configuration files provided with the installer. Data capture and analysis are performed by software GUI *High Speed Data Converter Pro*, or *HSDC Pro* including fast-Fourier transform (FFT) analysis providing key parametric data such as SNR, SFDR, and Harmonic Distortion.

4 AFE58JD18 EVM Documentation

All relevant documentation including EVM schematics, Bill of Materials (BOM), Altium database, IBIS model and User's Guides are available for download. A comprehensive User's Guide explaining step-by-step software installation procedures as well as testing procedures is provided. A detailed explanation of all features of the GUI software is also given in this comprehensive User's Guide. Therefore, the AFE58JD18 EVM kit is a complete evaluation setup for the AFE58JD18. For more information on the AFE58JD18, or to begin evaluation, please write to AFE5818-support@list.ti.com.

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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

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

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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
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