User's Guide

ADS127L18EVM Software Automation Kit

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Abstract

This guide describes how to install and use the ADS127L18 Software Automation Kit. This Automation Kit is comprised of software drivers for the ADS127L18EVM hardware as well as a LabVIEW library which can be used to interact with the EVM without the use of the provided GUI software. This automation kit is intended to be used by hardware developers in evaluation of the ADS127L18 product. The LabVIEW development library can interact with the EVM hardware to enable automated testing and evaluation of Data Converter performance characteristics. This non-GUI evaluation tool is intended to supplement the GUI in evaluation of the ADCs performance hardware and is in no way intended for commercialization efforts. This Software is provided <u>as is</u> and only for demonstration and evaluation purposes.
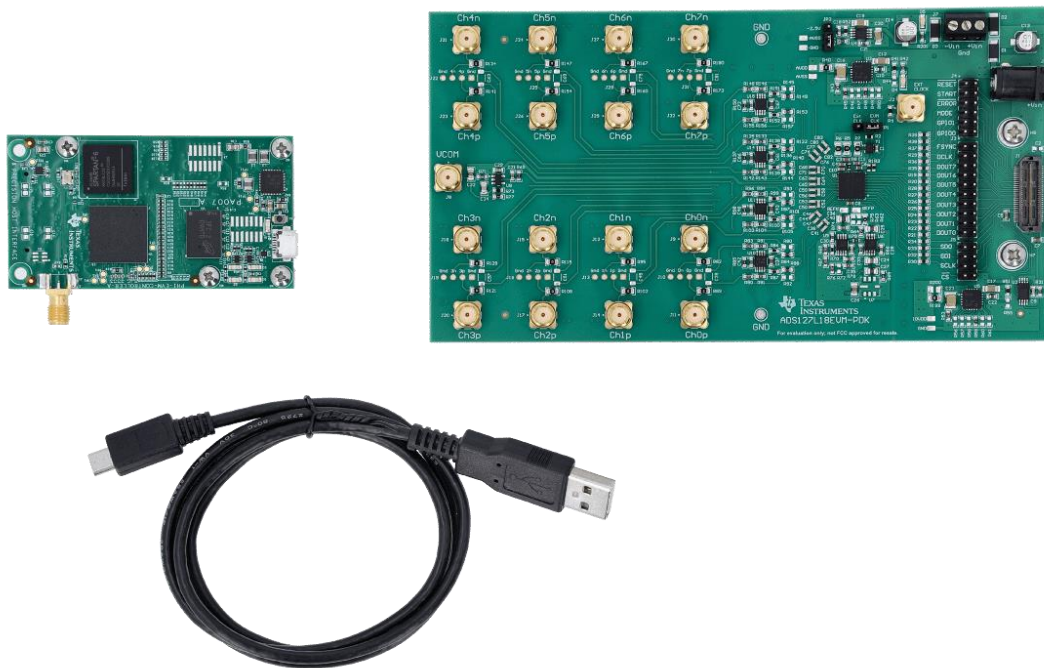
Figure 1: ADS127L18 EVM Hardware + PHI Controller board

Introduction:

This Software Automation kit is intended for EMV users who desire to bring the EVM Hardware into their exiting LabVIEW Automation Flow. The Automation kit is built as a regular LabVIEW Library and can be easily integrated into an existing LabVIEW project. The Automation kit allows users access to basic functionality of the EVM and serves as a building block for creating more complex data acquisition routines.

Installation:

This software package is intended to accompany the ADS127L18EVM-PDK Hardware. This software relies upon several of the GUI dependencies. If the EVM software has not yet been installed, please do so by visiting the EVM product page: https://www.ti.com/tool/ADS127L18EVM-PDK

This package is distributed as a stand alone LabVIEW Project and is compatible with versions of LabVIEW 2019 or newer. To install the Software package, download and run the installer in the directory of your choice. You may choose a directory from the installation dialog, or move these files after installation is complete. For this example, the downloads directory is used:
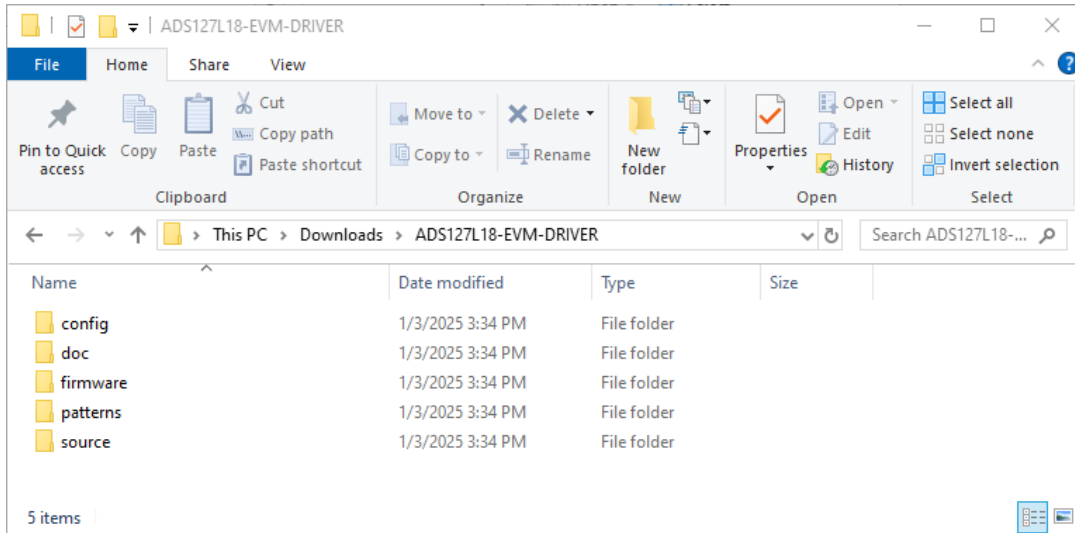

Figure 2: Zip directory and user documentation located in install directory

Next, open the **ADS127L18EVM-PHI-DRIVER.lvlib** library located in **source** or include this lib in any new or existing LabVIEW project.
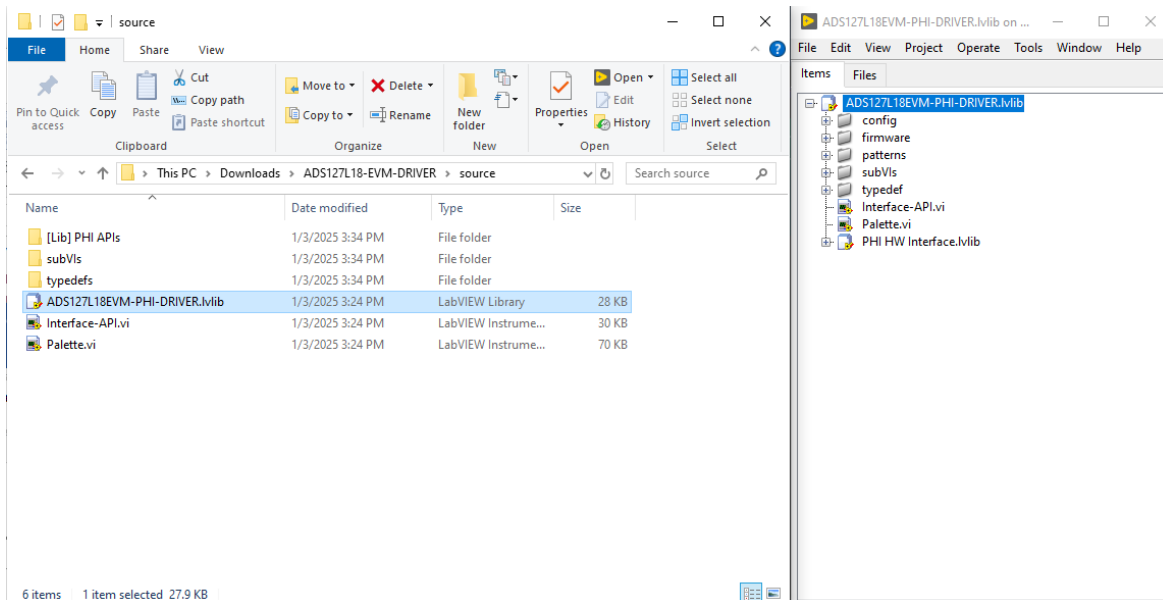

Figure 3: Library View of EVM Software Automation Driver

Using the Library:

The **EVM Driver Palette** VI provides access to all the functions of the Automation Driver. Generally, there are 2 types of Vis provided in this library, Generic EVM functions, and ADC config functions.
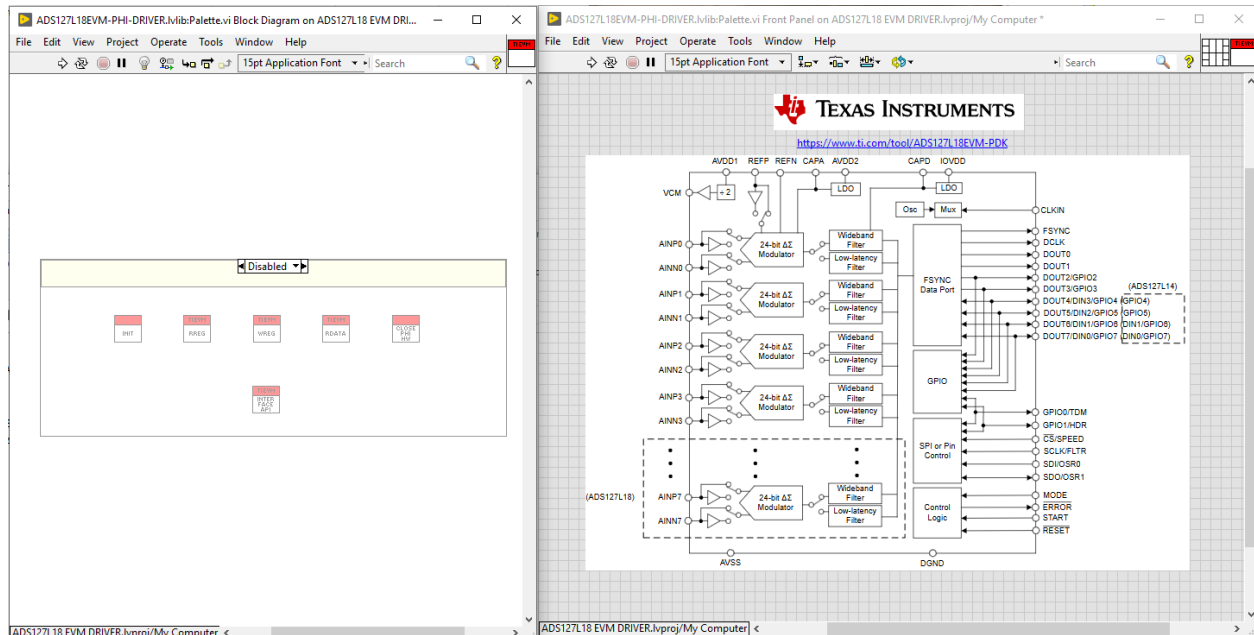

Figure 4: Palette VI showing all functions.

To begin using the hardware, always begin with the **Init.vi** function. After this routine has completed, any of the other functions can be successfully executed.

Usage Example:
1. **Initialize HW**
2. **Write value of 0x03 to register 0x02**
3. **Read back register 0x02**
4. **Read 1024 ADC samples**
5. **Close HW**