Installing ADS8410_13REF Plug-In for ADCPro™ Software

This document describes how to install the ADS8410_13REF Plug-in for the Texas Instruments ADCPro™ software.

Introduction

The following instruction set assumes the user has already installed ADCPro™ software from the Texas Instruments Web site and is ready to install the ADS8410/13REF plug-in for the ADCPro™ software. If that is not the case, download the ADCPro™ software by going to www.ti.com and searching for ADCPro. Once it is installed, proceed with the following instructions.

Minimum System Requirements

1. Microsoft Windows™ XP, Service Pack 2
2. 1024 × 768 screen resolution
3. USB 1.1 compatible input

Installing ADS8410_13REF Plug-In for ADCPro™ Software

1. Download the ADS8410/13REF plug-in from http://focus.ti.com/docs/toolsw/folders/print/ads8410-13ref.html
2. Double-click on ADS8410_13REF-plugin-1.0.0.exe file to install the plug-in.

Adding ADS8410/13 Reference Board to Your Computer

1. Connect the ADS8410/13REF hardware to your computer via the USB cable.
2. Power on the board by connecting the +5-Vac wall adapter plug to connector J9.
3. The New Found Hardware Wizard should start automatically in Windows™.

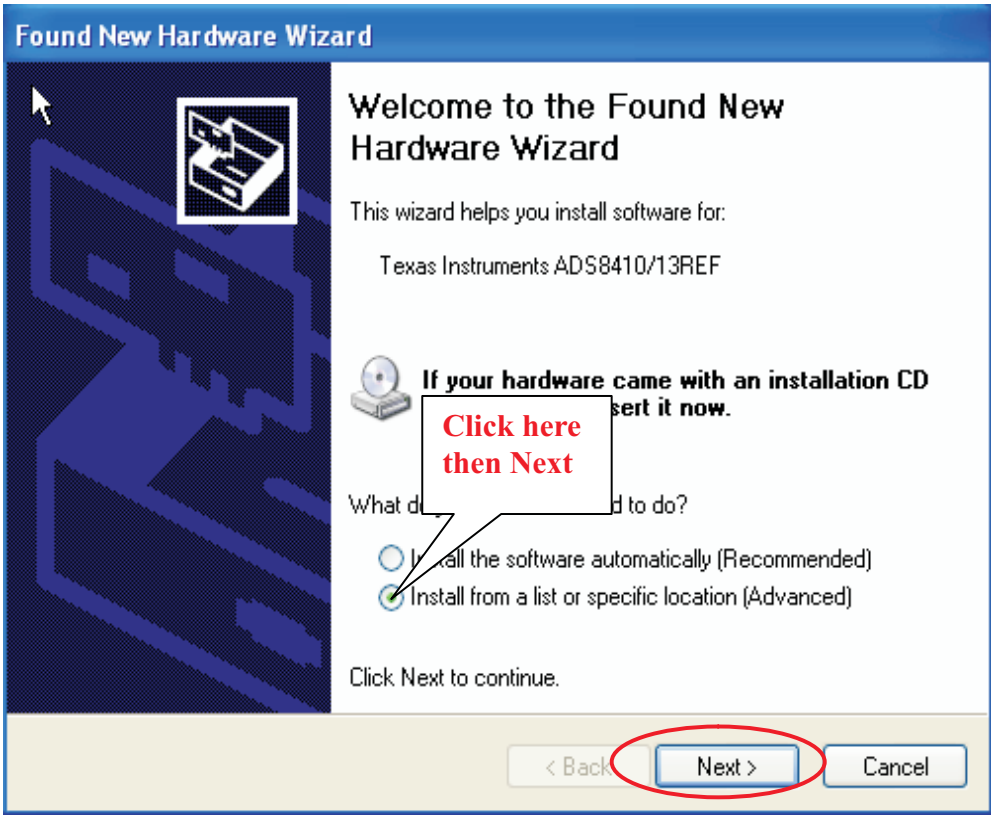
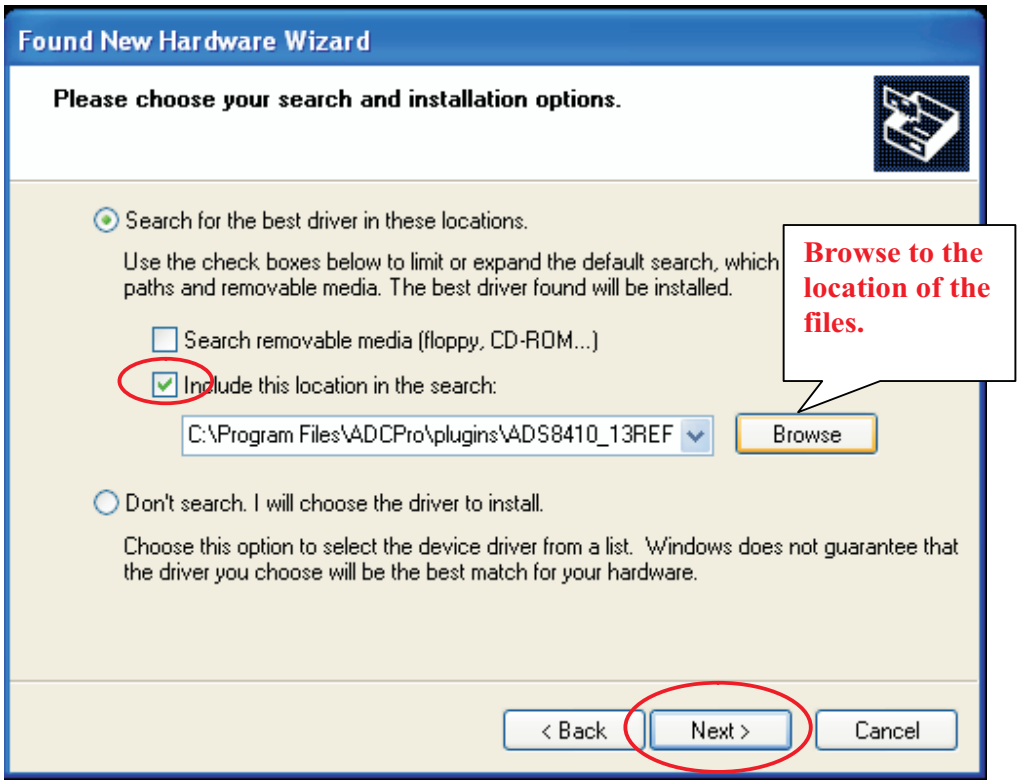


Figure 1. Add New Hardware

4. Click on Install from a list or specific location (Advanced); then click on Next.



5. Select Search for the best driver in these locations; then place a check mark on Include this location in the search.
6. Click on **Browse**; then browse to the location where your EVM plug-in was installed, e.g., C:\Program Files\ADCPro\plugins\ADS8410_13REF\USB_Driver
7. Click on Next to begin installation, and click **Continue Anyway** on the Windows Hardware Compatibility test.

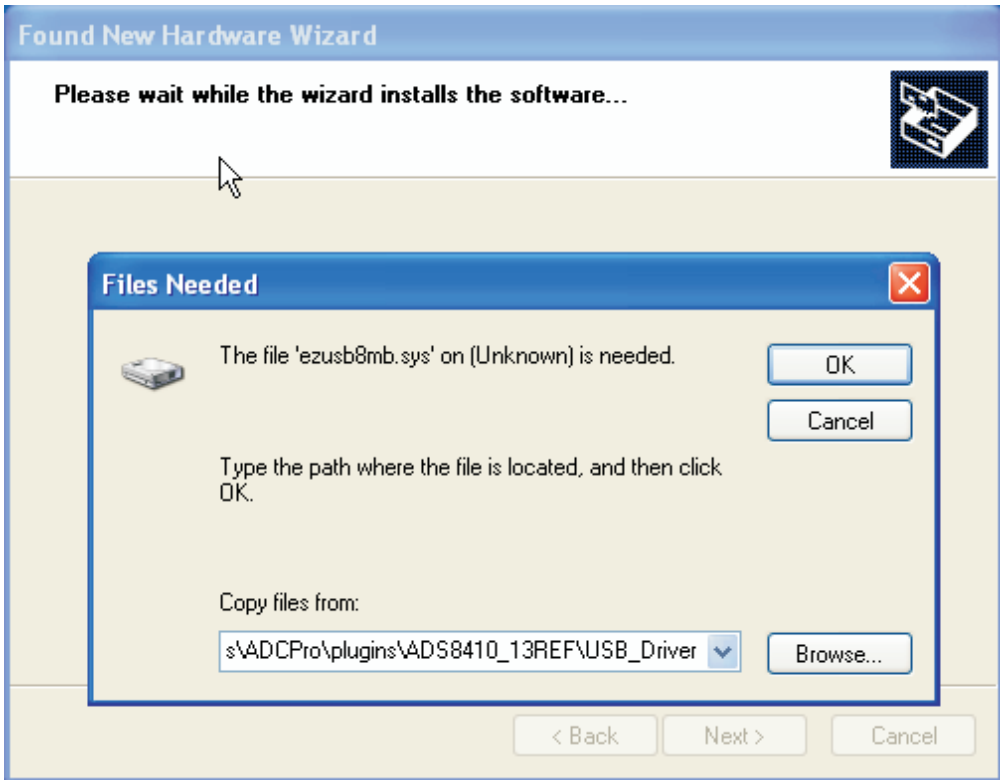


Figure 2. Files Needed Screen

8. On the Files Needed dialog box, click Browse; then browse to the following location: C:\Program Files\ADCPro\plugins\ADS8410_13REF\USB_Driver. Click on the file ezusb8mb.sys file; next, click on Open and then OK.
9. Click on Finish to complete the hardware installation. Your new hardware is now installed and ready for use.

Launching ADCPro™ Software

1. To start ADCPro™ software, click on Start, navigate in All Programs to ADCPro, and click ADCPro.
2. Click on the EVM Menu, and select the ADS8410/13REF plug-in.

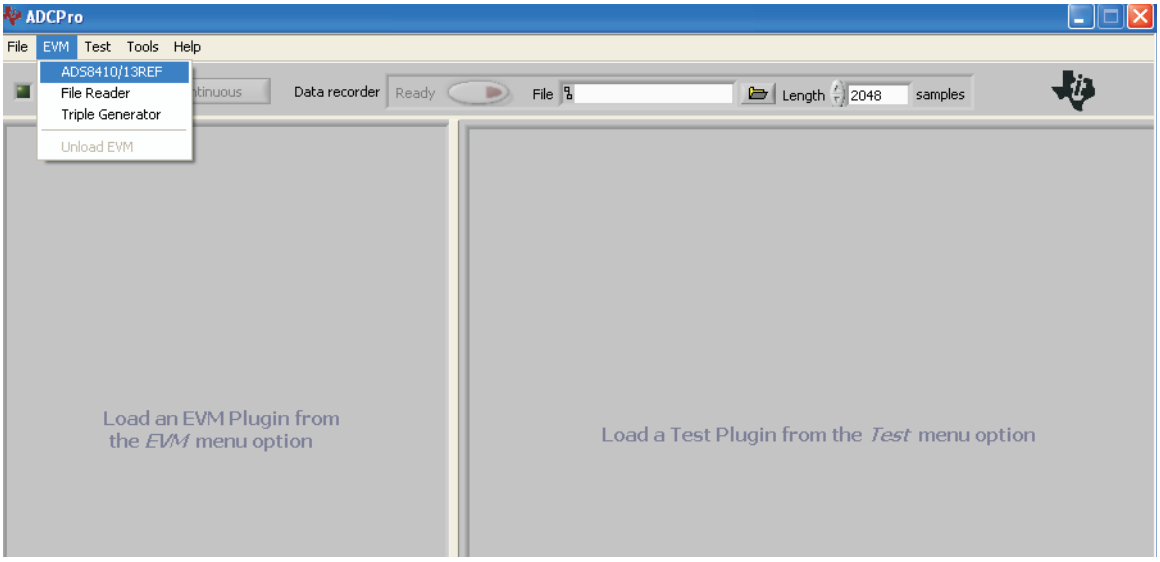


Figure 3. . ADCPro No Plug-Ins Loaded

3. Choose the Multichannel Scope under the Test menu.

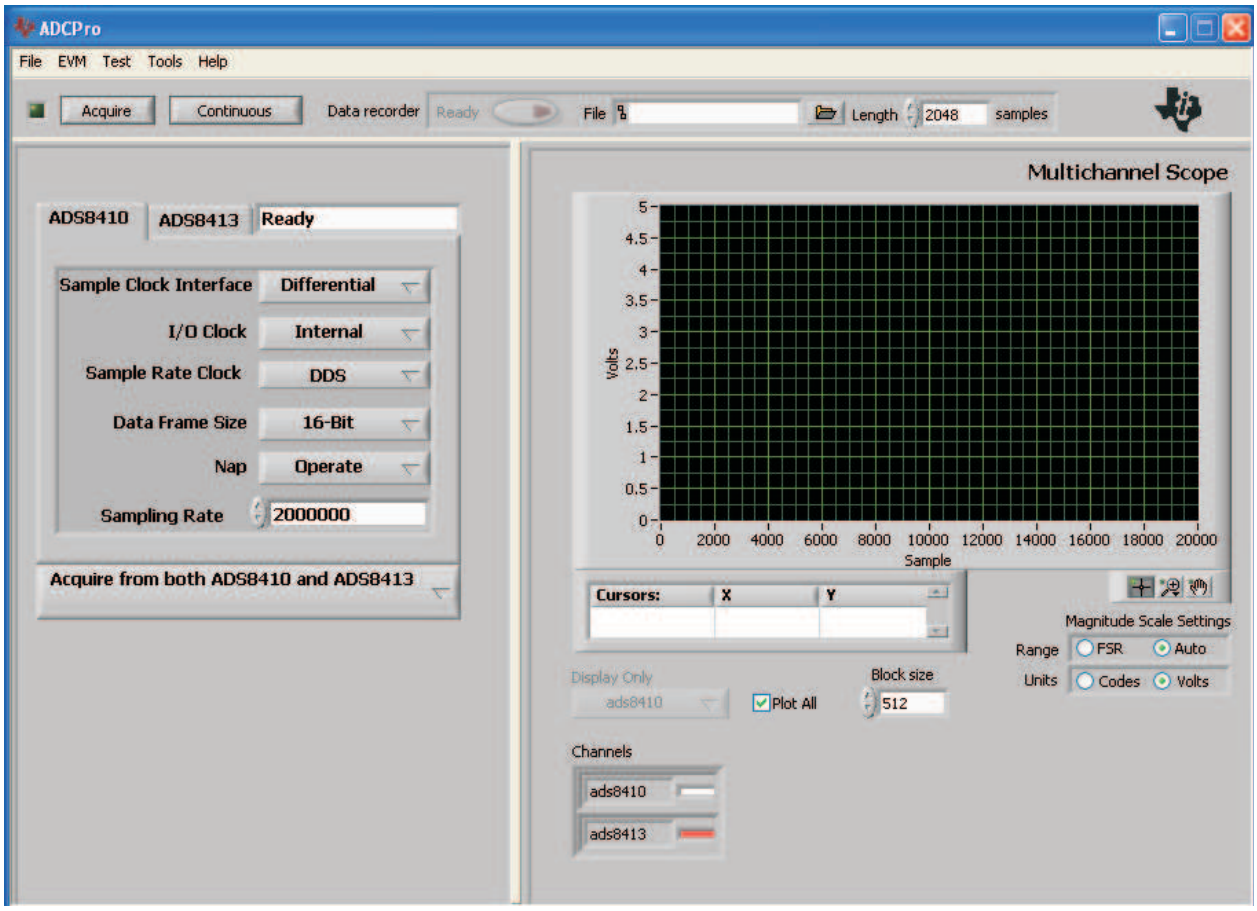


Figure 4. ADCPro™ Software With Plug-Ins Loaded

ADS8410/13REF Modes

After reading the user's guide for the ADS8410/13REF board, the user realizes several modes of operation are available. The plug-in allows the user to test and switch between modes. These operational modes are summarized in Table 1.

Table 1. ADS8410/13REF Plug-In Modes of Operation

FUNCTION	DESCRIPTION	MODES
Sample Clock Frequency	Conversion trigger to the device. In differential mode, the CSTART LVDS signal is toggled to start new conversions. In single-ended mode, the Conversion Start signal is used to toggle new conversions.	Differential or Single Ended
Latency	The amount of time that passes between the taking of an analog sample and the time that the sample is ready for digital retrieval.	Latency or No Latency
I/O Clock	Internal uses the 200-MHz clock generated by the converter in the serial interface. The 100-MHz Clock option means the FPGA-generated clock is used.	Internal or 100-MHz Clock
Sample Rate Clock	If External is chosen, the SMA connector J3 provides a way to input an external A/D sample clock (2 MHz or less) to the FPGA. In DDS mode, a direct digital synthesis of a square-wave clock is implemented by two numerically-controlled oscillators (NCO) within the FPGA.	DDS or External
Data Frame Size	Sets the data frame size to 8 bits or 16 bits.	8-bit or 16-bit
Nap	Provides substantial power saving when used at lower conversion rates. Places in the device in NAP mode or in normal operation mode.	Operate or Nap
Sampling Frequency	The sampling frequency for each channel of data. Not all rates between 1 kHz and 2 MHz is possible. See the user's guide for sample rate limitations.	1000 Hz to 2 MHz

In additional to selecting how the devices themselves are to be configured, the user also has the option of selecting between different physical connections between the two data converters. These options are shown in Figure 5.

The four acquisition modes are

1. Acquire from ADS8410. In this mode, samples are only collected from the ADS8410.
2. Acquire from both ADS8410 and ADS8413. Samples are collected individually from both ADS8410 and ADS8413. Each converter sample rates and some interface modes can be distinct. See the hardware user's guide for restrictions.
3. Acquire from ADS8413. Samples are collected only from the ADS8413 analog to digital converter.
4. Acquire from ADS8410 and ADS8413 in daisy-chain mode. The converters are configured for daisy-chain mode, as described in the hardware user's guide.

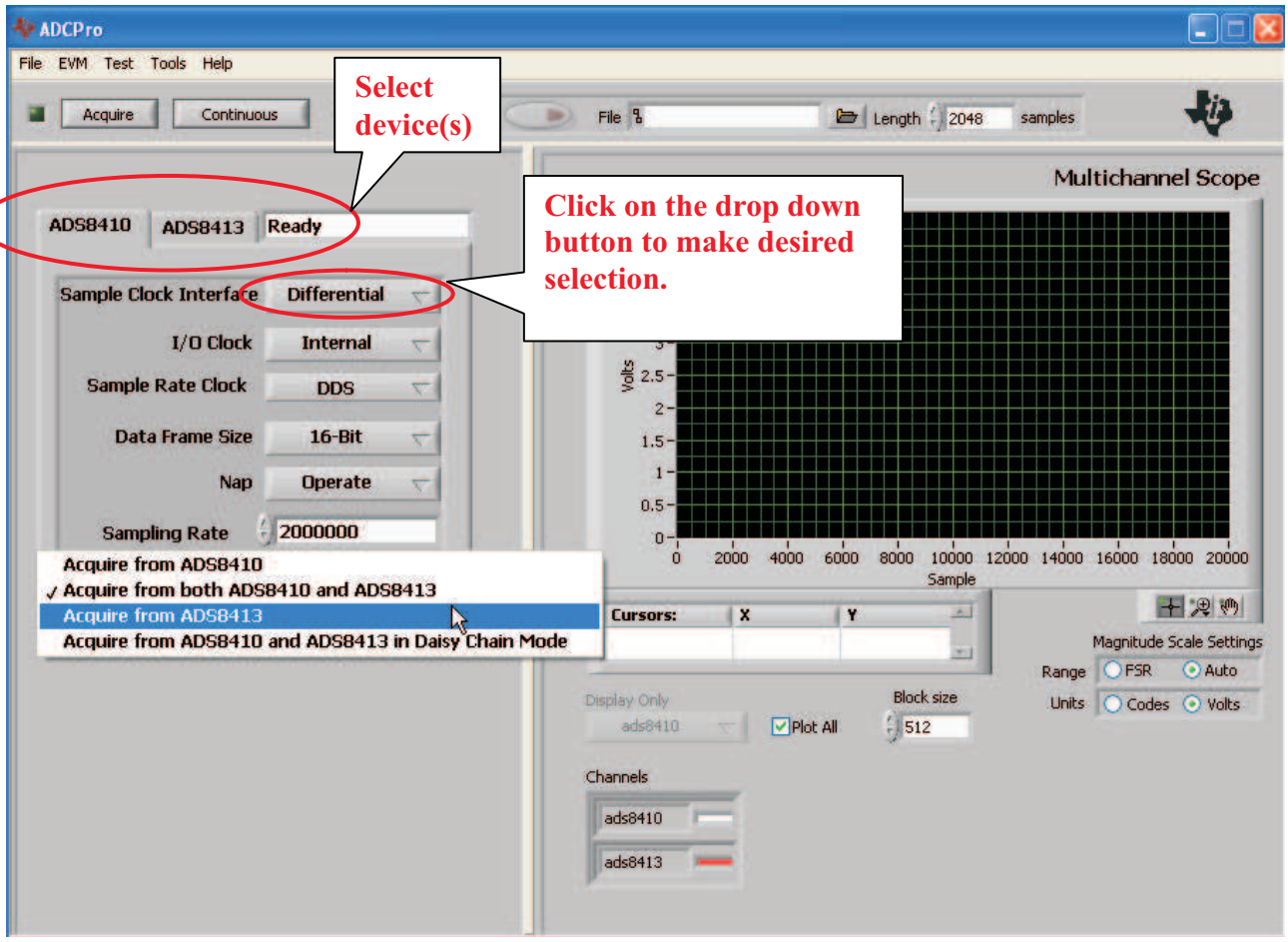


Figure 5. ADS8410/13 Options

Once both sides of the screen have been populated (as shown in Figure 5), the user can click Acquire. Pressing acquire collects data from the board. Alternatively, the user can click Continuous. In this mode, a block of samples are continuously acquired from the hardware. The size of the samples acquired are determined by the value in Block size. The value of Block size can only be updated when the program is not acquiring.

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