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.

ADCPro is a trademark of Texas Instruments.
Microsoft Windows is a trademark of Microsoft Corporation.

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™.

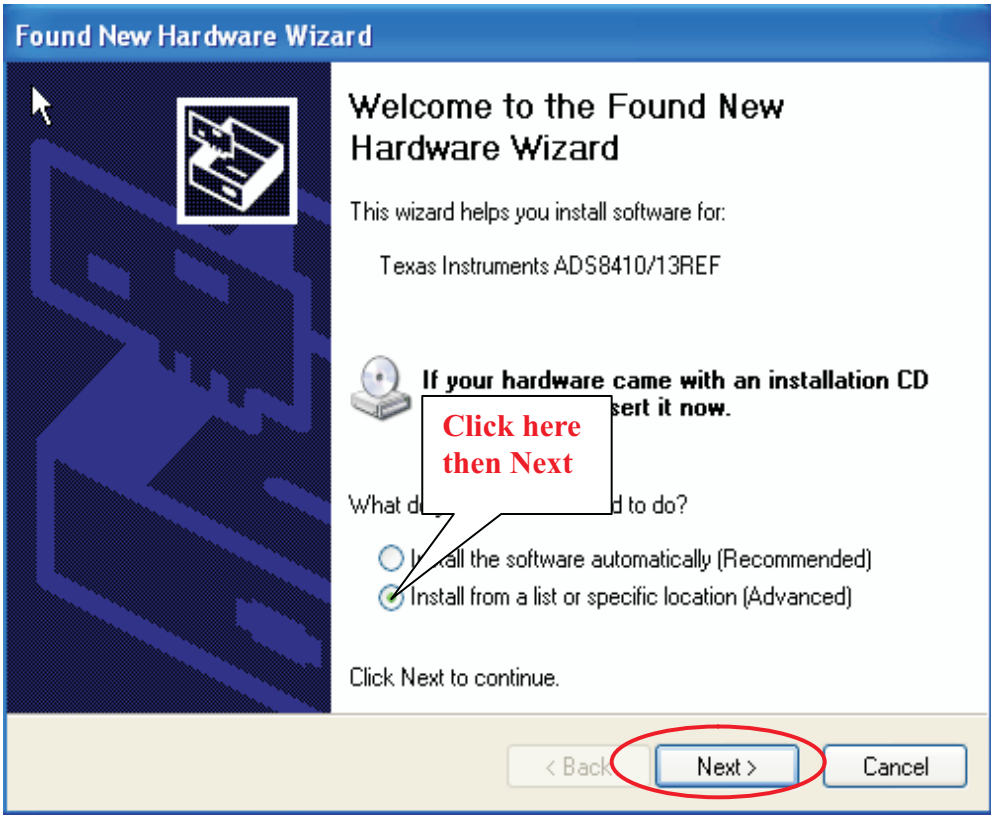
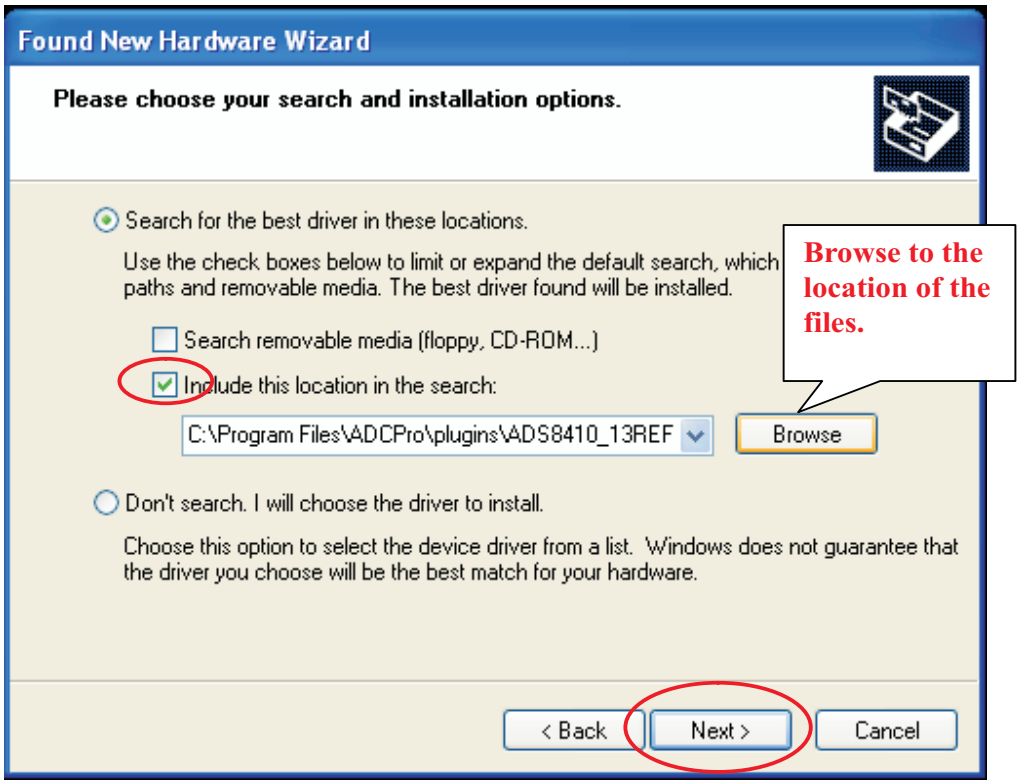


Figure 1. Add New Hardware

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.

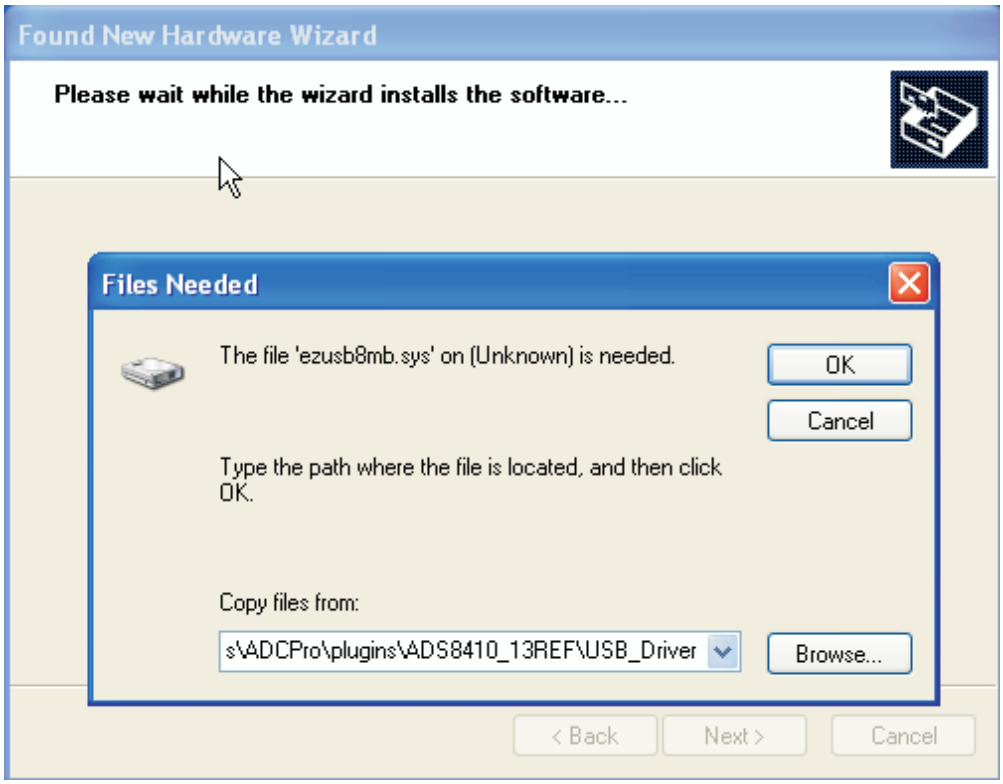


Figure 2. Files Needed Screen

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.

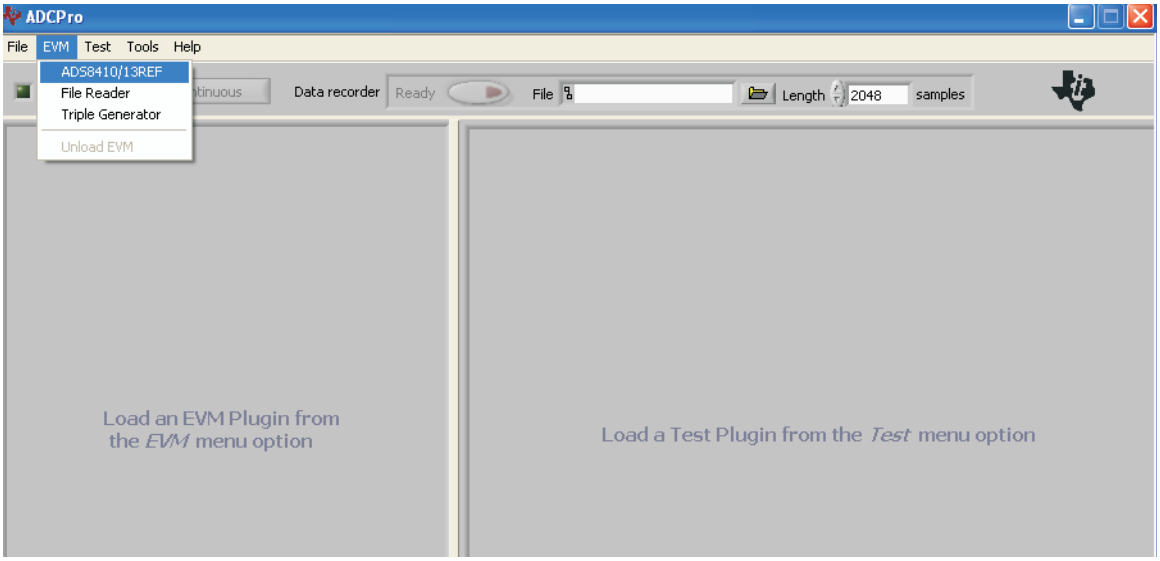


Figure 3. . ADCPro No Plug-Ins Loaded

3. Choose the Multichannel Scope under the Test menu.

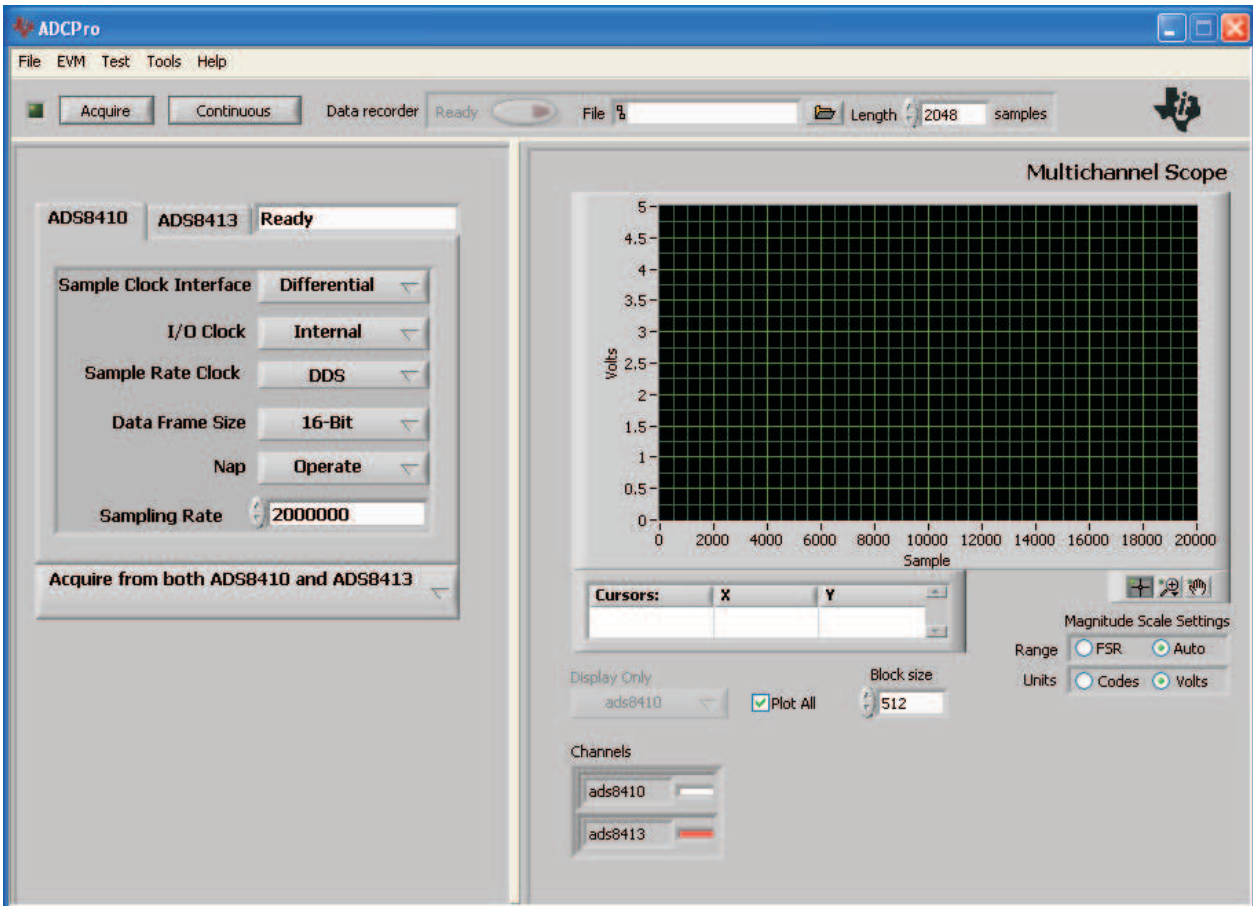


Figure 4. ADCPro™ Software With Plug-Ins Loaded

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.

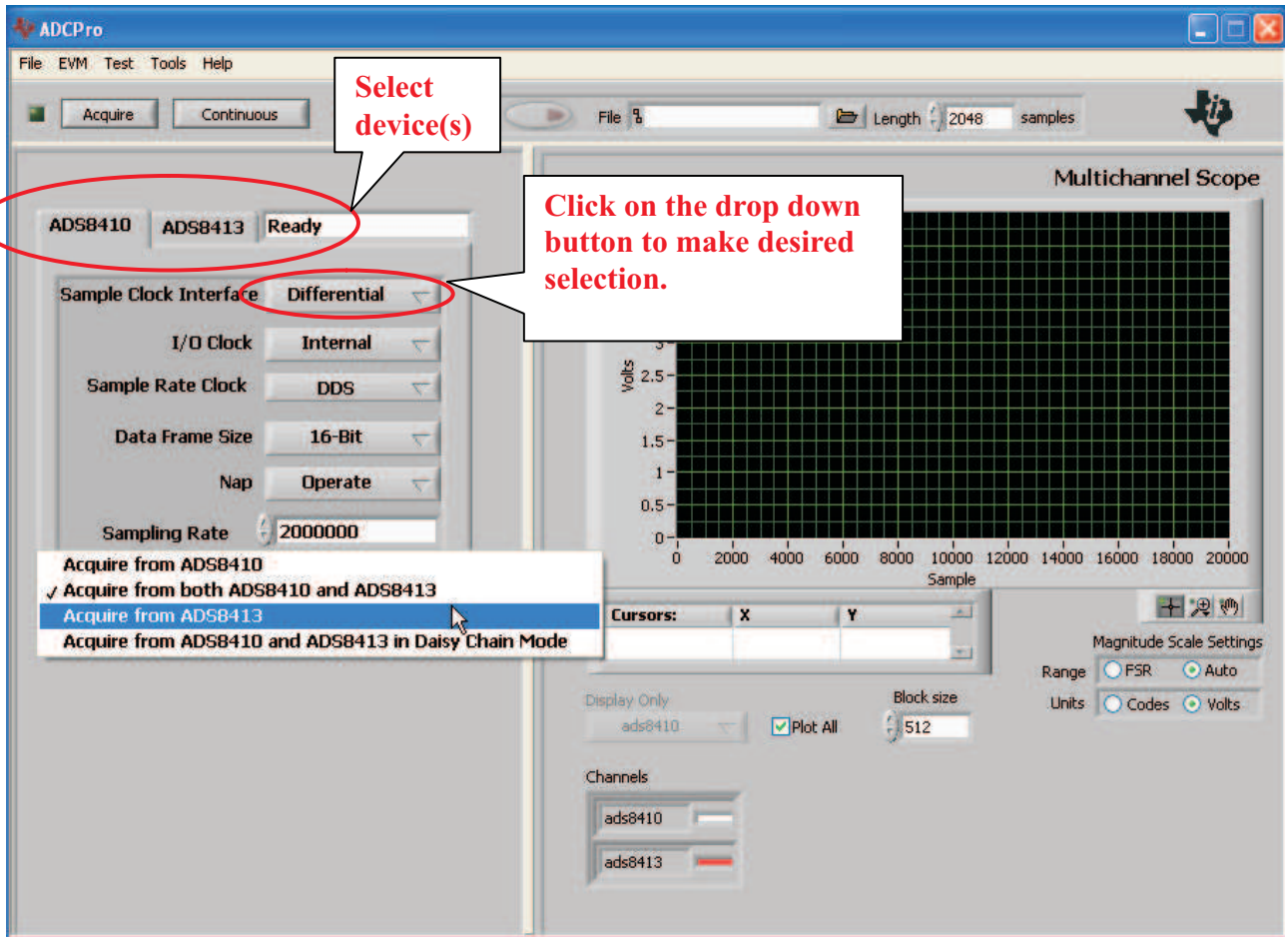


Figure 5. ADS8410/13 Options

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.

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products		**Applications**	
Amplifiers	amplifier.ti.com	Audio	www.ti.com/audio
Data Converters	dataconverter.ti.com	Automotive	www.ti.com/automotive
DSP	dsp.ti.com	Broadband	www.ti.com/broadband
Interface	interface.ti.com	Digital Control	www.ti.com/digitalcontrol
Logic	logic.ti.com	Military	www.ti.com/military
Power Mgmt	power.ti.com	Optical Networking	www.ti.com/opticalnetwork
Microcontrollers	microcontroller.ti.com	Security	www.ti.com/security
RFID	www.ti-rfid.com	Telephony	www.ti.com/telephony
Low Power Wireless	www.ti.com/lpw	Video & Imaging	www.ti.com/video
		Wireless	www.ti.com/wireless

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2007, Texas Instruments Incorporated