Quick start ADC1453D, ADC1159D evaluation board

Rev. 01 — 14 Nov 2013

Quick start

Document information				
Info	Content			
Keywords	ADC1453D, ADC1159D, ADC1453DxxxW1-DB, evaluation board, ADC, Converter, JESD204B, BSX0254.			
Abstract	This document describes how to use the evaluation board for the dual channel analog-to-digital converters ADC1453D and ADC1159D with JESD204B output interface.			
Overview				

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Revision history

Rev	Date	Description
1	14 November 2013	Initial version



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2. Switch and Jumpers default state

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3. Typical test configuration:





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4. ADC acquisition tool

4.1 Software start-up

To install the software, please refer to appendix A 'Software and drivers install'.

Run the application "HSDC_SW_ADC_4.exe". This application will allow:

- the user to control features through the SPI;
- as well as performing any online data acquisition to evaluate the performances.



ADC14 main an	get an overview of the alog registers	- Read / Write	e Registers Tools Acq	uisition 📔 G	PIB & T	est cor	nfig 🗍 Ii	nfo
14			Register name	Address		ADC Re	egister Vi	alue
Fin and Fs are: Fixed is: Coherent Fs Fs			Register name	Ro		10		
Sampling rate Fs	READ ALL REGISTERS		P	0		0		×o
ADC Fs Fs Level 153.600000000 Msps 0.00 dBm	Save registers to text file (".txt"):		P					×o
ADC Fs jitter 0.00000E+0 s	ADC to save:							×o
Input frequency Fin (max. 1000	ADC1 V							
ADC Fin 1 Fin 1 level 169.999218750 MHz 0.00 dBm	SAVE REGISTERS TO FILE							
ADC Fin 2 Fin 2 level 169.999218750 MHz 0.00 dBm	Load registers from text file (".txt"):				×0	× 0	×0	×0
ADC Fin jitter 0.00000E+0 s	C:\Users\frq04537\Desktop\ADC1440Q-			×0	× 0	×0	×O	0
Number of samples Acq. mode	LOAD REGISTERS FROM FILE		1	× 0	0	0	×0	× 0
65536 TFOLDED	Dump registers to text file (".txt")		<u></u>		0	×0	× 0	×0
RESET	R Start Address End Address		<u></u>				× 0	×0
Acquisition board ready	×0 > ×400		<u></u>		×0	×0	× 0	×0
NXP board ready	DUMP REGISTERS							×0
Comments	,							×0
			L.					×0
CAVE SETTINGS								×0 +
SAVE SETTINGS								
RESTORE SETTINGS								

4.3 Read / Write Registers

- Load the SPI registers settings file.
 Please contact your IDT Sales/FAE representatives to get access to SPI settings files for ADC1443D or ADC1453D or ADC1159D250devices. 3 SPI registers settings files are available:
 - ADC1453D160_SPI.txt
 - ADC1453D250_SPI.txt
 - ADC1159D250_SPI.txt



4.4 Functional Registers





In case of bad acquisition or when changing the sampling frequency, take care to reset the FPGA by pushing on-board button PB3.

5. Software and drivers install

5.1 Labview Runtime 2010 install

1	Go to National Instruments web page http://joule.ni.com/nidu/cds/view/p/id/2087/lang/en		
2	Download 'LVRTE2010std.exe'	Latview Raman Time Engine 2010- [12:bit Standard RTE] - Windows 777 46 bit/Server 2003 R2 (12:bit Mindows Inter Towner and Packat & Servers Standard RTE] - Windows Raman Ram	
3	Save	File Download - Security Warning Image: Security Warning Do you want to run or save this file? Image: LVRTE2010std.exe Type: Application, 171MB From: download.ni.com Image: Bun Save Cancel Image: While files from the Intermet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. What's the not?	
4	Run the application 'LVRTE201	I0std.exe'	
5	ОК	LabVIEW 2010 Standard Run-Time Engine This self-extracting archive will create an installation image on your hard drive and launch the installation. After installation completes, you may delete the installation image to recover disk space. You should not delete the installation image if you wish to be able to modify or repair the installation in the future. OK Annuler	
6	Unzip	WinZip Self-Extractor - LVRTE2010std.exe Image: Comparison of the specified folder press the Unzip button. Unzip to folder: Image: Comparison of the specified folder press the Unzip button. Unzip to folder: Run WinZip Image: Comparison of the specified folder press the Unzip button. Close Image: Unzip to folder: Close Image: Unzip to folder: Close Image: Unzip to folder: Close Image: Unzip to folder press the Unzip spectra of the spectra	

7	ОК	WinZip Self-Extractor 240 file(s) unzipped successfully OK
8	Next	NI LabVIEW Run-Time Engine 2010 I. com/labview NI LabVIEW Run-Time Engine 2010 Com Cabbo Com Com Com Com Com Com Com Com Com Co
9	Next	Image: Select the primary installation directory. Destination Directory Select the primary installation directory. Destination Directory [:\Program Files\National Instruments\] Browse (< Back Next >> Cancel

40			
10	Next	襲 NI LabVIEW Run-Time Engine 2010 Features	
		Select the features to install.	INSTRUMENTS
		VII LabVIEW Run-Time Engine 2010 VII Variable Engine DataSocket NI LabVIEW 2010 Deployable License VISI	Libraries and other files necessary to execute LabVIEW 2010-built applications and shared libraries. Includes NI Reports, 3D graph support, and a browser plugrin that allows clients to view and control front panels remotely using a browser.
			This feature will be installed on the local hard drive.
			This feature and its selected subcomponents may require up to 95 MB of disk space.
		Directory for NI LabVIEW Run-Time Engine 2010	Biowse
		Restore Feature Defaults	Next>>> Cancel
11	Select 'I accept the License	🖷 NI LabVIEW Run-Time Engine 2010	
	Agreement'	License Agreement You must accept the license(s) displayed below	to proceed.
	Next	NATIONAL INSTRUMENTS SO	
		INSTALLATION NOTICE: THIS IS A CONTRACT, BEA AND/OR COMPLETE THE INSTALLATION PROCES DOWNLOADING THE SOFTWARE AND/OR CLICKIN COMPLETE THE INSTALLATION PROCESS, YOU C AGREEMENT AND YOU AGREE TO BE BOUND BY' BECOME A PARTY TO THIS AGREEMENT AND BE C CONDITIONS, CLICK THE APPROPRIATE BUTTON DO NOT INSTALL OR USE THE SOFTWARE, AND F (30) DAYS OF RECEIPT OF THE SOFTWARE (WITH ALONG WITH THEIR CONTAINERS) TO THE PLACE SHALL BE SUBJECT TO NI'S THEN CURRENT RET	S, CAREFULLY READ THIS AGREEMENT. BY IG THE APPLICABLE BUTTON TO ONSENT TO THE TERMS OF THIS THIS AGREEMENT. IF YOU DO NOT WISH TO JOUND BY ALL OF ITS TERMS AND TO CANCEL THE INSTALLATION PROCESS, IETURN THE SOFTWARE WITHIN THIRTY ALL ACCOMPANYING WRITTEN MATERIALS, YOU OBTAINED THEM. ALL RETURNS
12	Next	🖷 NI LabVIEW Run-Time Engine 2010	
		Start Installation Review the following summary before continuing	NATIONAL INSTRUMENTS
		Adding or Changing • NI LabVIEW Run-Time Engine 2010 • NI Variable Engine • DataSocket • NI LabVIEW 2010 Deployable License • USI Click the Next button to begin installation. Click the Back but	ton to change the installation settings.
		Save File	<< Back Next >> Cancel

13	Finish	嗯 NI LabVIEW Run-Time Engine 2010	
		Installation Complete	
		The NI LabVIEW Run-Time Engine 2010 installation is complete.	Next >> Einish
14	Restart	NI LabVIEW Run-Time Engine 2010	
		You must restart your computer to complete this operation. If you need to install hardware now, shut down the computer. If you choose to restart later, restart your computer before running any of this software. <u>Bestart</u>	

5.2 Demoboard - USB-SPI driver install

1	Plug the USB cable in the demoboard USB connector		
2	The wizard will help to install the USB Serial Converter A		
с у	Select 'Install from a list or specific location' Next	Found New Hardware Wizard Welcome to the Found New Hardware Wizard Use Serial Converter A Use Serial Converter A Image: Serial Converter A<	

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4	Select 'Search for the best	Browse For Folder	
	driver in these locations'	Select the folder that contains drivers for your hardware.	
	Select 'Include this location	Image: Control of the second secon	
	in the search'	Found New Hardware Wizard	
		Please choose your search and installation options.	
	Browse	Search for the best driver in these locations	
		Use the check boxes below to limit or expand the default search, which paths and removable media. The best driver found will be installed. To view any subfolders, click a plus sign above.	
	Select the folder	Search removable media (floppy, CD-ROM) OK Cancel OK Cancel	
	'CDM2.08.12'	Include this Igoation in the search: F:\offlines_files\VXP\2011\11-TUCANA\S&A_Softw. Browse	199
		O Don't search. I will choose the driver to install.	
	Neut	Choose this option to select the device driver from a list. Windows does not guarantee that	
	Next	the driver you choose will be the best match for your hardware.	
		< Back Next > Cancel	
5	Continue Anyway	Hardware Installation	
	(Windows XP only)	The software you are installing for this hardware:	
		USB Serial Converter A	
		has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)	
		Continuing your installation of this software may impair	
		or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly	
		recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.	
		passed windows Logo testing.	
		Continue Anyway STOP Installation	
6	Browse	Files Needed	
		The file fitdibus sys' on FTDI USB Drivers Disk is	
		needed.	
	Select the file 'ftdibus.sys'	Cancel Type the path where the file is located, and then click	
	in the folder	о́к.	
	'CDM2.08.12\i386'		
		Copy files from: 11\11:tucana\s&a_tools\fdi driver\windows 7\i38€ ♥ Browse	
	ок		
L			

7	Finish	Found New Hardware Wizard Image: Completing the Found New Lardware Wizard Image: Completing the software for: Image: USB Serial Converter A USB Serial Converter A Click Finish to close the wizard. Image: Click Finish to close the wizard.	
8	The wizard will help to install the USB Serial Converter B (same as USB Serial Converter A)		
9	The wizard will help to install the USB serial port The file ' ftser2k.sys ' is in the folder ' CDM2.08.12\i386 '		

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