

PCIe-9814P

4-ch 12-bit 80 MS/s PCI Express Digitizer

Features

- Up to 80 MS/s sampling rate
- 4 simultaneous analog inputs
- High resolution 12-bit ADC
- Up to 40 MHz bandwidth for analog input
- 1 GB onboard storage memory
- Programmable input voltage range of ±0.5V, ±1V, ±5V, or ±10V
- Scatter-Gather DMA data transfer for high speed data streaming
- PLL module for precise synchronization
- Full auto-calibration



Introduction

The ADLINK PCIe-9814P is a PCI Express digitizer providing speedy, high quality data acquisition. Each of the four input channels supports up to an 80MS/s sampling rate, with a 12-bit resolution A/D converter. This allows simultaneous recording of signals on all channels with no interchannel phase delay. The extremely large onboard memory enables long recording times even at the highest sampling rate.

Unlike parallel PCI buses, PCI Express slots utilize serial point-to-point connection. Each connection pair (lane) can achieve burst connection speeds of 250MB/s. The PCIe-9814P, based on x4 lane slot PCI Express technology, provides a clear advantage in that direct connection of each slot allows full transfer bandwidth for each individual card. The ADLINK PCIe-9814P digitizer can be used in any standard PCI Express slot, x4, x8, or x16.

Ordering Information

SSI Bus Cables (for multiple card synchronization)

PN	Description	PN	Description
PCIe-9814P	4-ch 12-bit 80 MS/s PCI Express Digitizer with PLL module	ACL-eSSI-2/3/4	SSI bus cable for two, three, and four devices

Supported Operating Systems

Driver and SDK

• Windows 10/11, Linux

• C/C++, C#, LabVIEW

Specifications

Model Name	PCIe-9814P				
Analog Input					
Number of Channels	4 single-ended				
Input Impedance	50Ω or 1MΩ, soft	50Ω or 1MΩ, software selectable			
Input Coupling	D	DC			
Input Signal Range	±0.5V, ±1V, ±5V, ±10V (±10V only s	± 0.5 V, ± 1 V, ± 5 V, ± 10 V (± 10 V only supports input impedance of 1 M Ω)			
ADC Resolution	12 bits				
Bandwidth	40MHz				
	±0.5V	±0.5 mV			
Official Error	±1V	±0.5 mV			
Olisecento	±5V	±4 mV			
	±10V	±10 mV			
Gain Error	±1% of reading				
	±0.5V	0.15 mVrms			
System Noise	±1V	0.3 mVrms			
System Noise	±5V	1.5 mVrms			
-	±10V	2.5 mVrms			
	SNR	64 dB			
Spectral Characteristics	THD	-73 dB			
	SFDR	74 dB			
Triggering					
Trigger Sources	Software External digital trigger Analog trigger from CH0 ~ CH3 SSI				
Trigger Modes	Post-trigger Pre-trigger Middle trigger Delay trigger				
Timebase					
Sample Clock Source	Internal clock (onboard oscillator) External clock (front panel CLK IN)				
Sample Clock Frequency	Internal clock: 1.22K Hz ~ 80M Hz (accuracy: < ±25 ppm) External clock: 20M Hz ~ 80M Hz				
External Sample Clock Input Range	1Vpp ~	1 Vpp ~ 5 Vpp			
External Reference Clock Source	SDI0 (Fro	SDI0 (Front panel)			
External Reference Clock Frequency	10M	10M Hz			
External Reference Clock Input Range	3.3V ~ !	5V TTL			

Specifications

General Specifications			
I/O Connector	SMB x 4 for analog input (CH0, CH1, CH2, CH3) SMB x 1 for external trigger input SMB x 1 for external sample clock input SMB x 3 for synchronous digital input and external reference clock source input		
Dimensions (not including connectors)	167.64 (W) x 106.68 (H) mm (6.53" x 4.16")		
Bus Interface	PCI Express x4		
Ambient Temperature (Operational)	0°C to 50°C (32°F to 122°F)		
Ambient Temperature (Storage)	-20°C to 80°C (-4°F to 176°F)		
Relative Humidity	10% to 90%, non-condensing Certifications		
Power Consumption	5.7 Wmax		
Certifications			
EMC/EMI	CE, FCC Class A		

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