



e-ADS16

High Speed AI Module, 16-channel, 16-bit, 200KHz, Sample & Hold, Terminal Block

Introduction

The e-ADS16 is an e-Bus x 1 (similar to PCI-E x1) module that provides 16-ch Analog Input. With a FIFO of 2048 samples, the maximum sampling rate is up to 200 kS/s with 16 16-bit A/D converters simultaneously sampling on each channel. The module has two channels timer/counter. This module needs to be installed on an e-Bus x1 slot of the AXP-9000-IoT Programmable Automation Controller (PAC).

e-ADS16 supports more kinds of trigger modes for A/D conversion: software trigger, internal pacer trigger and external pacer trigger. The software trigger can acquire a sample whenever needed, while the internal pacer saves CPU loading by triggering the sampling at pre-programmed frequency. An external pacer can be used for triggering by external frequency source. The e-ADS16 also includes an onboard Card ID switch that can be used to set a unique ID for each board so that they can be instantly recognized if two or more boards are installed in the same computer.

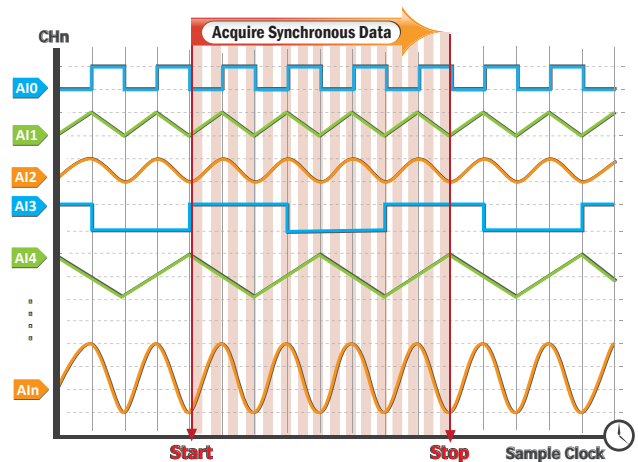
The module installed on AXP-90000 with 64-bit Windows 10 IoT OS supports DLL SDK and Active X control together with various language sample programs based on Visual C++, Visual Basic, C#.NET, Visual Basic.NET and LabVIEW are provided in order to help users quickly and easily develop their own applications.

System Specifications

System	
Type	e-Busx1
Data Bus	32-bit
Hardware	
Connector	32-pin Terminal Block
Software	
SDK	LabVIEW Demo, VB/VC/Delphi/BCB/VB.NET/C#.NET/VC.NET/MATLAB Demo
LED Display	
System LED Indicator	1 LED as Power Indicator
Power	
Power Consumption	600 mA @ +3.3 V
Mechanical	
Dimensions (W x L x H)	31 mm x 134 mm x 145 mm
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	5 ~ 85 % RH, Non-condensing

Features

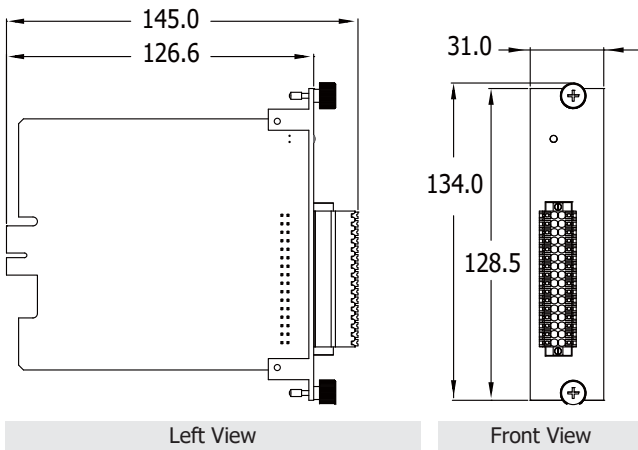
- 16-bit AD Converter, 200kHz Sampling Rate for Each Channel
- Built-in 2048 samples FIFO for Analog Inputs
- Software Calibration
- 2 Channels Timer/Counter
- 16 Channels Synchronous Sample & Hold Analog Input
- 16 Single-ended Analog Inputs
- Wide Operating Temperature Range: -25 to +75 °C



I/O Specifications

Analog Input	
Channels	16 single-ended (Simultaneously)
Range	Gain: 1, 2 Bipolar Range: ±10 V, ±5 V
Resolution	16-bit
Accuracy	0.05 % of FSR ±1 LSB @ 25 °C, ±10 V
Sampling Rate	200 kS/s
Input Impedance	10,000 MΩ/4 pF
Overvoltage Protection	Continuous ±35 Vp-p
FIFO Size	2048 Samples
Trigger Mode	Software, Pacer, External
Isolation	2500 VDC (Bus-type)
Data Transfer	Polling, Interrupt, DMA
Timer/Counter/Frequency	
Channels	2

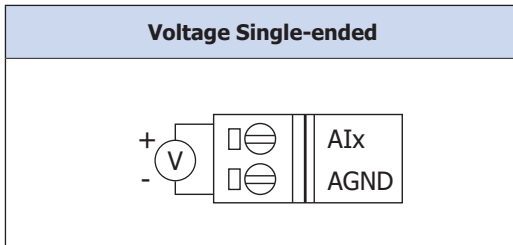
Dimensions (Units: mm)



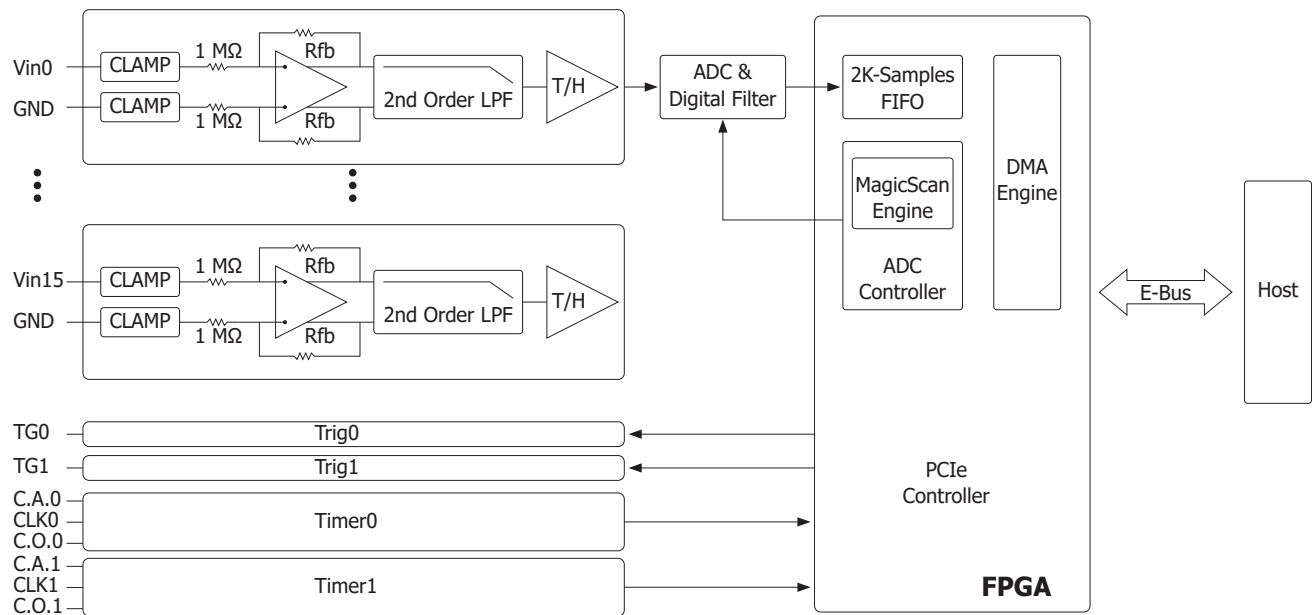
Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment
AI0	01	17 AI1
AI2	02	18 AI3
AI4	03	19 AI5
AI6	04	20 AI7
AI8	05	21 AI9
AI10	06	22 AI11
AI12	07	23 AI13
AI14	08	24 AI15
AGND	09	25 AGND
AGND	10	26 AGND
TG0	11	27 CONV
TG1	12	28 DGND
CG0	13	29 CG1
CLK0	14	30 CLK1
CO0	15	31 CO1
PWR	16	32 DGND

Wire Connections



Internal I/O Structure



Ordering Information

e-ADS16 CR	High Speed AI Module, 16-channel, 16-bit, 200KHz, Sample & Hold, Terminal Block (RoHS)
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