e-A16SH

200 KS/s High-speed, 16-bit,
16-channel Simultaneously Sampled Analog Input

Features

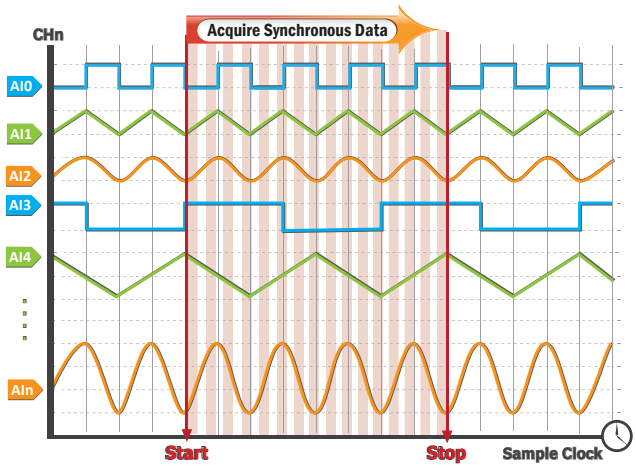
- 16 channels Synchronous Sample & Hold Analog Input
- 16 Single-ended Analog Inputs
- 2 channels timer/counter
- 16-bit AD Converter, 200kHz Sampling Rate for each channel
- Built-in 2048 samples FIFO for Analog Inputs
- Software Calibration
- Wide Operating Temperature Range: -25 to +75 °C

Introduction

The e-A16SH 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-A16SH 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 module installed on AXP-9000 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

Bus Interface	
Type	e-Busx1
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	
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 ~ +60 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 90% RH, Non-condensing

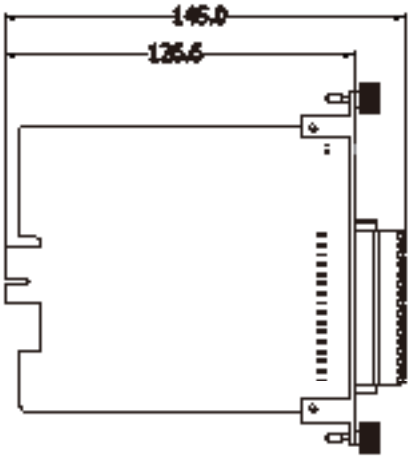
I/O Specifications

Analog Input		
Channels		16 Single-ended (Simultaneously)
Range	Gain	1, 2
	Bipolar Input	±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		2 k Samples (Total)
Trigger Mode		Software, Pacer, External
Isolation		2500 VDC (Bus-type)
Data Transfer		Polling, Interrupt, DMA
Timer/Counter		
Channels		2

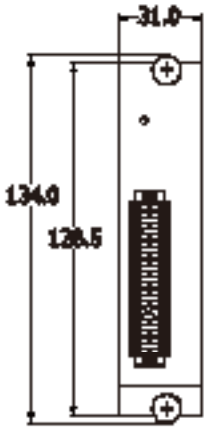
Pin Assignments

Pin Assignment	Terminal No.		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

Dimensions (Units: mm)



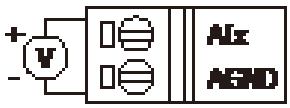
Left View



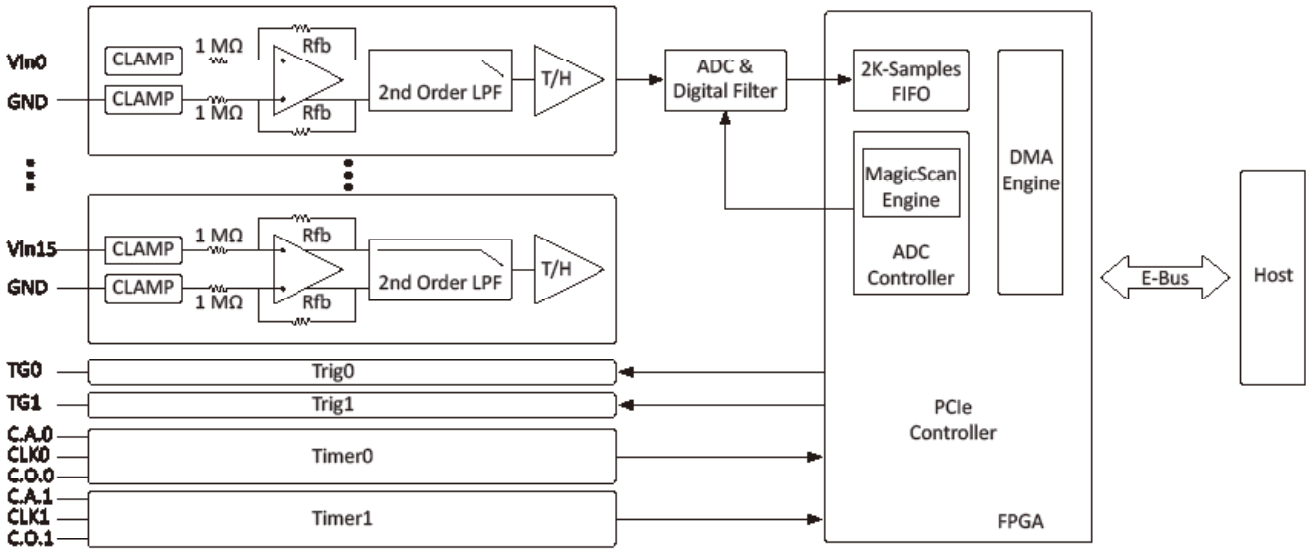
Front View

Wire Connections

Voltage Single-ended



Internal I/O Structure



Ordering Information

e-A16SH CR	200 KS/s High-speed, 16-bit, 16-channel Simultaneously Sampled Analog Input (RoHS)