

DAQ-AIMC3421-1810E

High Performance Desktop DAQ Starter Kit



Features

- DAQ Card
 - 12-bit, 800KS/s, 16 ch analog input
 - 24-ch digital input/output
 - Advantech DAQNav (Data Acquisition Software)
 - Cables and Wiring Board
- Intel® H81 Platform
 - Intel® 4th generation Core i CPU (LGA1150)
 - Two PCIe (x16/x1) & two PCI Expansion Slots
- Compact & Rich I/O Configuration
 - One internal 3.5" SATA HDD bays with shock-resistant
 - Optional front removable 2.5" HDD bay
 - VGA, 2 GbE LAN, 4 USB2.0, 2 COM
 - Easy-to-maintain system fan and reusable filter
- Energy Savings
 - 300W 80Plus PSU

System Specifications

Processor System 1.5U CPU Cooler 3 Expansion slot 0 ~ 40° C	CPU	i7-4790S	i7-4770S	i5-4590S	i5-4570S	i3-4360								
	Core	4/8	4/8	4/4	4/4	4/4								
	Base Frequency	3.2 GHz	3.1GHz	3.0 GHz	2.9GHz	3.7 GHz								
	L3 Cache	8 MB	8MB	6 MB	6MB	4 MB								
	Chipset	H81												
	BIOS	AMI 128Mb SPI Flash												
Processor System 1U CPU Cooler 4 Expansion slots 0 ~ 45° C	CPU	i7-4790T	i7-4770TE	i5-4590T	i5-4570TE	i3-4360	i3-4350T	i3-4330TE	i3-4330	G3420	G3320TE	G1820	G1820TE	
	Core	4/8	4/8	4/4	2/4	2/4	2/4	2/4	2/4	2/2	2/2	2/2	2/2	
	Base Frequency	2.7GHz	2.3 GHz	2.0 GHz	2.7GHz	3.7GHz	3.1 GHz	2.6 GHz	3.5GHz	3.2 GHz	2.3 GHz	2.7 GHz	2.2 GHz	
	L3 Cache	8MB	8 MB	6 MB	4MB	4MB	4 MB	4 MB	4MB	3 MB	3 MB	2 MB	2 MB	
	Chipset	H81												
	BIOS	AMI 128Mb SPI Flash												
Memory	Technology	Dual Channel DDR3 1066/1333/1600 MHz (Non ECC)												
	Max. Capacity	16 GB (8 GB per DIMM)												
	Socket	204-pin SO-DIMM x 2												
Graphics	Chipset Integrated	Integrated Intel HD Graphics												
Expansion slot	PCI Express x16	1; Full-Height: 107 mm / Length: Max. 196 mm												
	PCI Express x1	1; Full-Height: 107 mm / Length: Max. 196 mm (Populated with PCIe-1810-AE)												
	PCI	2; Full-Height: 107 mm / Length: Max. 196 mm; When using 2 PCI slots, only supports 1U CPU Cooler												
Ethernet	Interface	10/100/1000 Mbps												
	Controller	LAN1: Intel I217V, LAN2: Intel I211AT												
SATA	Max Data Transfer Rate	600 MB/s (SATA 3.0)												
	HDD Bay	1 internal 3.5"												
I/O Interface	Display	VGA												
	USB	4 (USB 2.0 compliant, 2 in front, 1 in rear, 1 internal type-A for software key)												
	Serial	2 RS-232												
	PS/2	1 (PS/2 Y cable supports 1 x keyboard and 1 x mouse)												
Watchdog Timer	Output	System reset												
	Interval	Programmable 1 ~ 255 sec/min												
Power Supply	Output Rating	AC 300W, ATX												
	Input Voltage	100 V _{AC} ~ 240 V _{AC}												
Cooling	System Fan	1 (9cm / 53 CFM)												
	Air Filter	Yes												
Miscellaneous	LED Indicators	Power, HDD, Temp, Fan												
	Control	Power on/off switch, Reset button												
Environment		Operating								Non-operating				
	Temperature	0 ~ 40° C (32 ~ 104° F)								-20 ~ 60° C (-4 ~ 140° F)				
	Humidity	10 ~ 85% @ 40° C, non-condensing								10 ~ 95% @ 40° C, non-condensing				
	Vibration	1Grms, random, 5~500Hz, 3 axes, 1 hr/axis								2Grms, sine wave, 5~500Hz, 3 axes, 1 hr/axis				
	Shock	10G, half sine wave, 11 ms duration												
	EMC	CE/FCC, CCC, BSMI												
	Safety	UL/CB, CCC, BSMI												
Physical Characteristics	Dimension (W x H x D)	150 x 222 x 270 mm												
	Weight	5 kg												

DAQ Card Specifications

Analog Input

- **Channels Single-end** 16-ch Differential 8-ch
- **Resolution** 12 bits
- **Sample Rate** Single Channel 800 kS/s max.
Multi-Channel 500 kS/s max.
Note: The sampling rate for each channels will be affected by used channel number.
For example, if 4 channels of PCIE-1810 are used, the sampling rate is $500k/4 = 125$ kS/s per channel.
- **Trigger Reference** Digital Trigger, Analog Trigger
- **Trigger Mode** Start trigger, Delay to Start trigger, Stop trigger, Delay to Stop trigger
- **FIFO Size** 4k samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 1 G Ω
- **Sampling Modes** Software and external clock
- **Input Range Software programmable**

Gain	0.5	1	2	4	8
Unipolar	NA	0~10	0~5	0~2.5	0~1.25
Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
Gain Error (%FSR)	0.1	0.1	0.2	0.2	0.4

Analog Output

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** Static- Software Polling 500 KS/s max.
- **Output Range** Software programmable

Output Range	Internal Reference	0V~5V, 0V~10V, $\pm 5V$, $\pm 10V$	
	External Reference	Reference Input	Maximum Range
	Unipolar	$-10V \leq x \leq 10V$	$0 \sim x V$
	Bipolar		$-x V \sim x V$

- **Slew Rate** 20 V/ μ s
- **Driving Capability** 5 mA
- **Operation Mode** Static update, Waveform generation
- **Accuracy** INLE: ± 1 LSB, DNLE: ± 1 LSB

Digital I/O

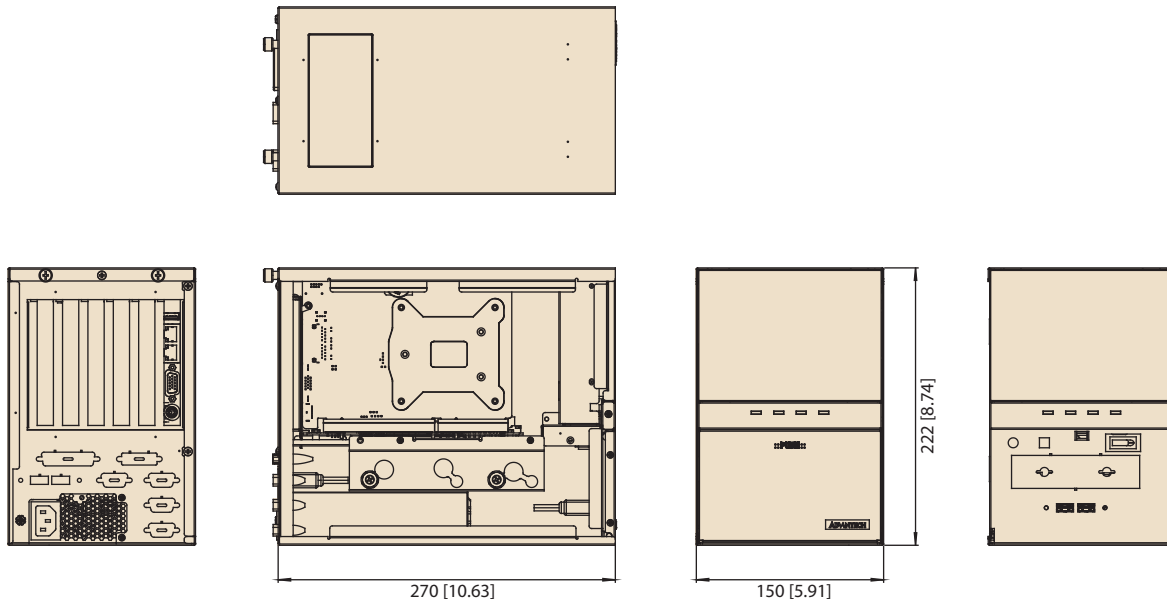
- **Channels** 24
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- **Output Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- **Output Capability** Sink: 15 mA @ 0.8 V
Source: 15 mA @ 2.0 V

Counter

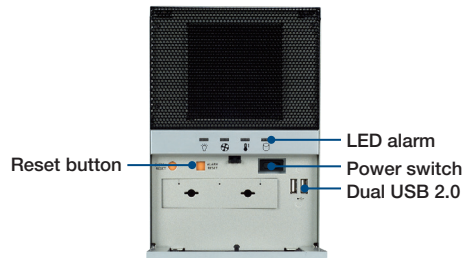
- **Channels** 2
- **Resolution** 32 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Pulse Generation** Yes
- **Timebase Stability** 50 ppm

Dimensions

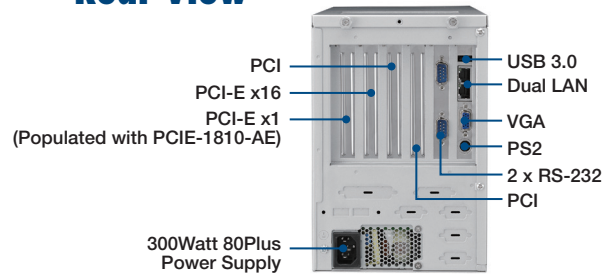
Unit: mm [inch]



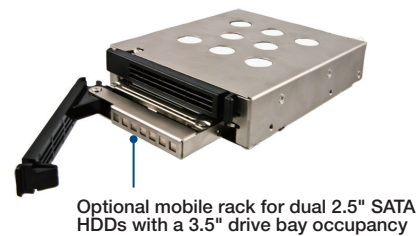
Front View



Rear View



IDT-3120E



Ordering Information

Model Name	Description
DAQ-AIMC3421-1810E	PCIE-1810-AE,cable,board with AIMC-3421 system

Packing List

Items	Part Number	Quantity
AIMC-3421 Bare System	AIMC-3421-00A1E	1
Driver CD	2066302800	1
Four-port USB Cable	1700014398-11	1
LPT Cable	1700002223	1
MOUNTING BRACKET	1960048518N001	1
Rubber Foot	1990012452S000	4
DAQ Card	PCIE-1810-AE	1
SCSI Cable	PCL-10168-1E	1
Wiring Board	ADAM-3968-AE	1

Optional Accessories

Part Number	Description
1960053207N001	1.5U Cooler for All CPUs; Support 3 Expansion slots
1960053065N001	1U Cooler for CPU iX-XXXXTX and GXXXXXX; Support 4 Expansion slots
PCIE-1674PC-AE	4-port PCI express GbE PoE card
PCIE-1672PC-AE	2-port PCI express GbE PoE card
1700021831-01	DP to DVI-D cable w/ BKT
IDT-3120E	Removable dual 2.5"HDD tray
PCA-COM485-00A1E	4-port RS-485/422 Module by LPC
PCA-COM232-00A1E	4-port RS-232 Module by LPC
PCA-AUDIO-HDA1E	Audio extension module with HD audio interface
PCA-TPM-00A1E	Trusted platform module compliant with TCG 1.2

Note: Purchasing proprietary CPU cooler from Advantech is a must. Other brands' CPU coolers are NOT compatible.