DAQ-2208
96-CH 12-Bit 3 MS/s Ultra High Density Analog Input Card

Features
- Supports a 32-bit 3.3 V or 5 V PCI bus
- 96-CH single-ended or 48-CH differential analog inputs
- Up to 3 MS/s sampling rate
- 12-bit A/D resolution
- On-board 1 k-sample A/D FIFO
- Bipolar or unipolar analog input ranges
- Programmable gains of x1, x2, x4, x5, x8, x10, x20, x40, x50, x200
- 1024-configuration channel-gain queue
- Scatter-gather DMA for analog inputs
- 24-CH TTL digital input/output
- Analog and digital triggering
- Fully auto calibration
- Multiple cards synchronization through SSI (System Synchronization Interface) bus
- Compact, half size PCB

Operating Systems
- Windows 2000/NT/XP/98
- Red Hat Linux
- Windows CE (call for availability)

Recommended Software
- VB/VC++/BCB/Delphi
- DAQBench

Driver Support
- D2K-DASK: Windows 2000/NT/XP/98 driver
- D2K-DASK/X: Red Hat Linux driver
- D2K-LVIEW: LabVIEW driver
- D2K-MTLB: MATLAB driver
- D2K-OCX: 32-bit ActiveX controls

Introduction
ADLINIK DAQ-2208 is an ultra-high-density and high-performance analog input card. The device can sample up to 96 AI channels with different gain settings and scan sequences. It makes them ideal for dealing with ultra-high-density analog signals with various input ranges and sampling speeds. These devices also offer differential mode for 48 AI channels in order to achieve maximum noise elimination.

The DAQ-2208 also features analog and digital triggering and 24-CH programmable digital I/O lines. Like all the other members in DAQ-2000 family, the DAQ-2208 is able to perform the analog input at full speed while multiple cards can be synchronized through the SSI (system synchronization interface) bus. The auto-calibration functions adjust the gain and offset to within specified accuracies so that you do not have to adjust trimpots to calibrate the cards.

Termination Boards
- **DIN-68S/1M**
  Termination Board with a 68-pin SCSI-II Connector and DIN-Rail Mounting (Including One 1-meter ACL-10568 Cable)

SSI Bus Cables (for multiple cards synchronization)
- **ACL-SSI-2**
  SSI Bus cable for 2 devices
- **ACL-SSI-3**
  SSI Bus cable for 3 devices
- **ACL-SSI-4**
  SSI Bus cable for 4 devices

Ordering Information
- **DAQ-2208**
  96-CH 12-bit 3 MS/s Ultra High Density Analog Input Card

Pin Assignment
Connector CN1 Pin Assignment

Left signal	Pin	Pin	Right signal
AI0 (AIH0)	1	35	(AIL0) AI48
AI1 (AIH1)	2	36	(AIL1) AI49
AI2 (AIH2)	3	37	(AIL2) AI50
AI3 (AIH3)	4	38	(AIL3) AI51
AI4 (AIH4)	5	39	(AIL4) AI52
AI5 (AIH5)	6	40	(AIL5) AI53
AI6 (AIH6)	7	41	(AIL6) AI54
AI7 (AIH7)	8	42	(AIL7) AI55
AISENSE	9	43	AIGND
AI8 (AIH8)	10	44	(AIL8) AI56
AI9 (AIH9)	11	45	(AIL9) AI57
AI10 (AIH10)	12	46	(AIL10) AI58
AI11 (AIH11)	13	47	(AIL11) AI59
AI12 (AIH12)	14	48	(AIL12) AI60
AI13 (AIH13)	15	49	(AIL13) AI61
AI14 (AIH14)	16	50	(AIL14) AI62
AI15 (AIH15)	17	51	(AIL15) AI63
AI16 (AIH16)	18	52	(AIL16) AI64
AI17 (AIH17)	19	53	(AIL17) AI65
AI18 (AIH18)	20	54	(AIL18) AI66
AI19 (AIH19)	21	55	(AIL19) AI67
AI20 (AIH20)	22	56	(AIL20) AI68
AI21 (AIH21)	23	57	(AIL21) AI69
AI22 (AIH22)	24	58	(AIL22) AI70
AI23 (AIH23)	25	59	(AIL23) AI71
AIGND	26	60	AIGND
AI24 (AIH24)	27	61	(AIL24) AI72
AI25 (AIH25)	28	62	(AIL25) AI73
AI26 (AIH26)	29	63	(AIL26) AI74
AI27 (AIH27)	30	64	(AIL27) AI75
AI28 (AIH28)	31	65	(AIL28) AI76
AI29 (AIH29)	32	66	(AIL29) AI77
AI30 (AIH30)	33	67	(AIL30) AI78
AI31 (AIH31)	34	68	(AIL31) AI79

Pin Assignment
Connector CN2 Pin Assignment

Left signal	Pin	Pin	Right signal
AI32 (AIH32)	1	35	(AIL32) AI80
AI33 (AIH33)	2	36	(AIL33) AI81
AI34 (AIH34)	3	37	(AIL34) AI82
AI35 (AIH35)	4	38	(AIL35) AI83
AI36 (AIH36)	5	39	(AIL36) AI84
AI37 (AIH37)	6	40	(AIL37) AI85
AI38 (AIH38)	7	41	(AIL38) AI86
AI39 (AIH39)	8	42	(AIL39) AI87
EXTATRIG	9	43	AIGND
AI40 (AIH40)	10	44	(AIL40) AI88
AI41 (AIH41)	11	45	(AIL41) AI89
AI42 (AIH42)	12	46	(AIL42) AI90
AI43 (AIH43)	13	47	(AIL43) AI91
AI44 (AIH44)	14	48	(AIL44) AI92
AI45 (AIH45)	15	49	(AIL45) AI93
AI46 (AIH46)	16	50	(AIL46) AI94
AI47 (AIH47)	17	51	(AIL47) AI95
AIGND	18	52	AIGND
N/C	19	53	N/C
EXTDTRIG	20	54	AFI0
EXTTIMEBASE	21	55	DGND
PB7	22	56	PB6
PB5	23	57	PB4
PB3	24	58	PB2
PB1	25	59	PB0
PC7	26	60	PC6
PC5	27	61	PC4
DGND	28	62	DGND
PC3	29	63	PC2
PC1	30	64	PC0
PA7	31	65	PA6
PA5	32	66	PA4
PA3	33	67	PA2
PA1	34	68	PA0

* All specifications are subject to change without further notice.

SSI bus cable for multiple cards synchronization

Termination board DIN-68S/1M

Specifications

Model Number	DAQ-2208
Analog Input	
Resolution	12 bits, no missing codes
Number of channels	96 single-ended or 48 differential (software selectable per channel)
Channel gain queue size	1024
Maximum sampling rate	3 MS/s
Programmable gain	1,2,4,5,8,10,20,40,50,200
Bipolar input ranges	±10 V, ±5 V, ±2.5 V, ±2 V, ±1.25 V, ±1 V, ±0.5 V, ±0.25 V, ±0.2 V, ±0.05 V
Unipolar input ranges	0-10 V, 0-5 V, 0-4 V, 0-2.5 V, 0-1 V, 0-0.5 V, 0-0.4 V, 0-0.1 V
Offset error	±1 mV
Gain error	±0.03 % of FSR
Input Coupling	DC
Overvoltage protection	Power on: Continuous ±30 V, Power off: Continuous ±15 V
Input Impedance	1 GΩ/100 pF
CMRR (gain = 1)	90 dB
Settling time	1 μs to 0.1 % error *
-3dB small signal bandwidth (gain = 1)	2 MHz
Trigger sources	Software, external digital/analog trigger, SSI bus
Trigger modes	Pre-trigger, post-trigger, middle-trigger, delay-trigger, and repeated trigger
FIFO buffer size	1 k samples
Data Transfers	Polling, scatter-gather DMA
Digital I/O	
Number of channels	24-CH 8255 programmable input/output
Compatibility	5 V/TTL
Data transfers	Programmed I/O
Auto Calibration	
On-board reference	+5 V
Temperature drift	±2 ppm/°C
Stability	±6 ppm/1000 Hrs
General Specifications	
Dimensions	175 mm x 107 mm (not including connectors)
Connector	68-pin VHDCI female x 2
Operating temperature	0 to 55 °C
Storage temperature	-20 to 80 °C
Humidity	5 to 95 %, noncondensing
Power requirements	+5 V 1.3 A typical

*Gain = 1, 2, 4, 8

1 Software Solutions

2 PXI/ CompactPCI Platforms

3 PXI-Based Instruments

4 PXI/ CompactPCI Modules

5 PCI DAQ Cards

6 PCI DIO Cards

7 PC/104-Plus Products

8 ISA DAS/ DIO Cards

9 Wiring Termination Boards

10 Motion Control Cards

11 Machine Vision Products

12 Remote I/O Modules