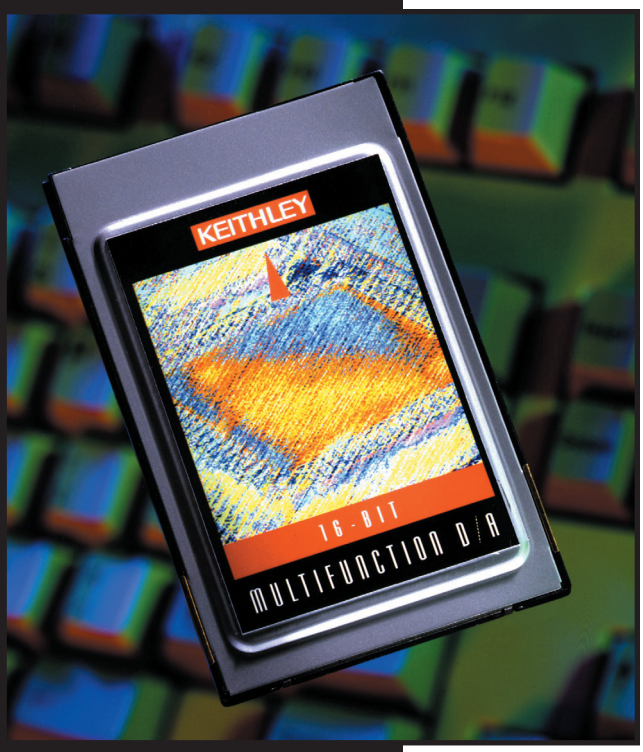
KPCMCIA-12/16 Series

100kHz, 12/16-Bit Multifunction Boards



These multifunction data acquisition cards are for use with notebook and other PCs equipped with a PCMCIA port. They allow you to sample raw analog data at speeds up to 100kS/s and feature 2K sample scan and sample FIFOs that allow you to acquire large amounts of data without sample loss. The cards are ideal for field applications such as in-vehicle test as well as for laboratory applications where space is at a premium or portability is required. The KPCMCIA-12AIAO-C and -16AIAO-C respectively are 12- and 16-bit analog input PCMCIA cards with analog output and digital I/O capability. They are also available without analog output capability, as the -12AI-C and -16AI-C. All models are capable of high-speed, gap-free data acquisition under Windows.

These cards feature high-speed 12- or 16-bit successive approximation A/D converters for multiplexing analog inputs, which are configurable as either single-ended or differential inputs. The cards offer an integral 2K-entry channel scan list that supports full-speed, random-order channel and gain selection. They also provide a 24-bit pacer clock—with programmable divide by 8 and 64 prescalers—that can be used in conjunction with an external clock source. Each card features eight TTL-compatible digital I/O channels.

The KPCMCIA-12AIAO-C, -12AIAOH-C, and -16AIAO-C cards also offer two 12-bit, ±5V analog outputs, a 16-bit counter/timer, and analog/digital triggering with threshold and pre-triggers.

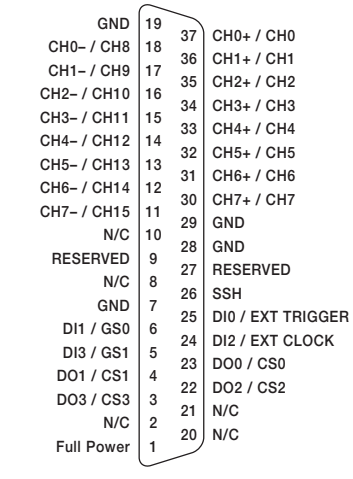
APPLICATIONS

- **Field service**
- **In-vehicle testing**
- **Field-based research**
- **Portable data logging**
- **General purpose laboratory instrumentation**

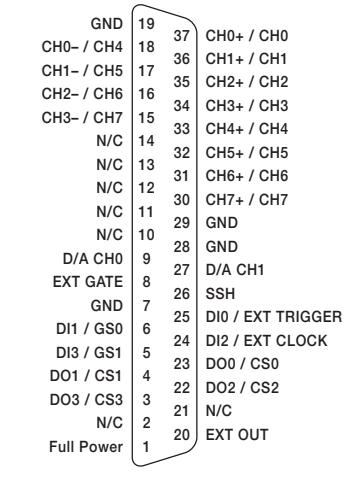
- **Continuous gap-free acquisition**
- **100kS/s sampling rate**
- **8/16 and 4/8 channel counts**
- **2K word FIFO**
- **Software programmable high & low gains**
- **8 digital I/O**
- **Hot swapping supported**
- **PCMCIA Type II cards**
- **Compatible with Keithley accessories**
- **32-bit DriverLINX drivers plus a suite of bundled software including ExceLINX, VisualSCOPE, TestPoint, and LabVIEW drivers**

up & running software

Connector Pin Assignments



KPCMCIA-12AI, -16AI Series PC Card
Optional D-37 Output Connector



KPCMCIA-12AIAO, -16AIAO Series PC Card
Optional D-37 Output Connector

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A GREATER MEASURE OF CONFIDENCE

Samples raw data up to 100kS/s

PCI/ISA/PCMCIA

For field and laboratory applications

PCI/ISA/PCMCIA

KPCMCIA-12/16 Series

100kHz, 12/16-Bit Multifunction Boards

Ordering Information

KPCMCIA-12AI-C
12-bit low-gain analog input and digital I/O PCMCIA card

KPCMCIA-12AIAO-C
12-bit low-gain analog input and digital I/O PCMCIA card with two analog outputs

KPCMCIA-12AIH-C
12-bit high-gain analog input and digital I/O PCMCIA card

KPCMCIA-12AIAOH-C
12-bit high-gain analog input and digital I/O PCMCIA card with two analog outputs

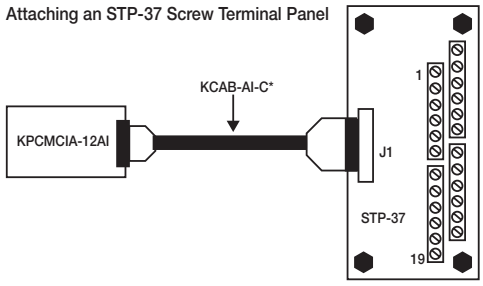
KPCMCIA-16AI-C
16-bit low-gain analog input and digital I/O PCMCIA card

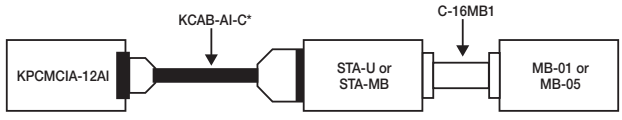
KPCMCIA-16AIAO-C
16-bit low-gain analog input and digital I/O PCMCIA card with two analog outputs

Accessories Supplied

KCAB-AIAO-C interface cable with software and user's manual on CD-ROM

Configuration Guide





*Use KCAB-AIAO-C for analog output versions. Cables are included with card when ordered.

ACCESSORIES AVAILABLE

C-16MB1	Cable from 37-pin to MB-01 or MB-05 Signal Conditioning Backplane
STP-37	Screw Terminal Panel
STP-37/C	STP-37 with added bottom case
STA-U	Universal Screw Terminal Accessory
STA-MB	Universal Screw Terminal Card with sockets for four MB-Series signal conditioning modules
TESTPOINT	TestPoint Application Software

ENVIRONMENTAL

OPERATING TEMPERATURE: 0° to 50C.
STORAGE TEMPERATURE: 0° to 70°C.
HUMIDITY (non-condensing): 0 to 95%.
WEIGHT: 1.5oz.
EMC: Conforms to European Union Directive 89/336/EEC.
SAFETY: Meets EN61010-1/IEC 1010.

KPCMCIA 12/16 Series

100kHz, 12/16-Bit Multifunction Boards

Specifications

MODEL	KPCMCIA-12AI-C	KPCMCIA-12AIH-C	KPCMCIA-12AIAO-C	KPCMCIA-12AIAOH-C	KPCMCIA-16AI-C	KPCMCIA-16AIAO-C
Bus Type	PCMCIA	PCMCIA	PCMCIA	PCMCIA	PCMCIA	PCMCIA
A/D						
Sampling Rate	0.006Hz–100kHz w/internal clock	0.006Hz–100kHz w/internal clock	0.006Hz–100kHz w/internal clock	0.006Hz–100kHz w/internal clock	0.006Hz–100kHz w/internal clock	0.006Hz–100kHz w/internal clock
A/D Resolution (Bits)	12	12	12	12	16	16
A/D Channels						
Single Ended	16	16	8	8	16	8
Differential	8	8	4	4	8	4
A/D Conversion Time	8µs	8µs	8µs	8µs	8µs	8µs
Monotonicity	No missing codes	No missing codes	No missing codes	No missing codes	No missing codes	No missing codes
Integral Linearity Error	±1 LSB	±1 LSB	±1 LSB	±1 LSB	±3 LSB	±3 LSB
Differential Linearity Error	±1 LSB	±1 LSB	±1 LSB	±1 LSB	±3 LSB	+3 or –2 LSB
Error (Full Scale Input)	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
Max. Overvoltage	±30	±30	±30	±30	±30	±30
Input Impedance	100MΩ DC	100MΩ DC	100MΩ DC	100MΩ DC	100MΩ DC	100MΩ DC
Input Range (Volts)	±10, ±5, ±2.5, ±1.25	±10, ±1, ±0.1, ±0.01	±10, ±5, ±2.5, ±1.25	±10, ±1, ±0.1, ±0.01	±10, ±5, ±2.5, ±1.25	±10, ±5, ±2.5, ±1.25
Programmable Gain	1, 2, 4, 8	1, 10, 100, 1000	1, 2, 4, 8	1, 10, 100, 1000	1, 2, 4, 8	1, 2, 4, 8
Scan FIFO	2k entries	2k entries	2k entries	2k entries	2k entries	2k entries
Data FIFO	2k samples	2k samples	2k samples	2k samples	2k samples	2k samples
TRIGGERING						
Source	Int. Software External TTL	Int. Software External TTL	Int. Software External TTL Analog	Int. Software External TTL Analog	Int. Software External TTL	Int. Software External TTL Analog
Mode	Continuous/ one shot	Continuous/ one shot	Continuous/ one shot	Continuous/ one shot	Continuous/ one shot	Continuous/ one shot
Pre-Trigger Capacity			Programmable to FIFO depth	Programmable to FIFO depth		Programmable to FIFO depth
TTL Trigger	0.8V (low) 2.2V (high)	0.8V (low) 2.2V (high)	0.8V (low) 2.2V (high)	0.8V (low) 2.2V (high)	0.8V (low) 2.2V (high)	0.8V (low) 2.2V (high)
Edge	Rising/Falling	Rising/Falling	Rising/Falling	Rising/Falling	Rising/Falling	Rising/Falling
Threshold			In full A/D input range (±10V)	In full A/D input range (±10V)		In full A/D input range (±10V)
PACER CLOCK	24-bit auto reload, variable 64 prescaler, 8 divisor	24-bit auto reload, variable 64 prescaler, 8 divisor	24-bit auto reload, variable 64 prescaler, 8 divisor	24-bit auto reload, variable 64 prescaler, 8 divisor	24-bit auto reload, variable 64 prescaler, 8 divisor	24-bit auto reload, variable 64 prescaler, 8 divisor
D/A						
Resolution (Bits)			12	12		12
Channels			2, single ended	2, single ended		2, single ended
Update Rate			Up to 100kHz*	Up to 100kHz*		Up to 100kHz*
Output Range			±5V	±5V		±5V
Output Current			±2mA	±2mA		±2mA
DC Output Impedance			0.5Ω (typical)	0.5Ω (typical)		0.5Ω (typical)
Digital Input Channels	4 unlatched	4 unlatched	4 unlatched	4 unlatched	4 unlatched	4 unlatched
Digital Output Channels	4 latched	4 latched	4 latched	4 latched	4 latched	4 latched
Max. Source Current	0.5mA	0.5mA	0.5mA	0.5mA	0.5mA	0.5mA
Max. Sink Current	2.5mA	2.5mA	2.5mA	2.5mA	2.5mA	2.5mA
Min. Logic "1" Level	2.4V	2.4V	2.4V	2.4V	2.4V	2.4V
Max. Logic "0" Level	0.8V	0.8V	0.8V	0.8V	0.8V	0.8V
COUNTER/TIMER						
Signal Level			0–5V TTL	0–5V TTL		0–5V TTL
Resolution (Bits)			16	16		16
Speed						
Internal Clock			1MHz	1MHz		1MHz
External Clock			DC to 5MHz	DC to 5MHz		DC to 5MHz
Auto Reload & Read Latch			Yes	Yes		Yes
Ext. Clock Input			TTL, pulse width >100ns, frequency <5MHz	TTL, pulse width >100ns, frequency <5MHz		TTL, pulse width >100ns, frequency <5MHz
Overflow Output			TTL	TTL		TTL
Function			Event count	Event count		Event count

*Maximum allowed by hardware. Varies with interrupt latency and channel count. Typical sustained rate under Windows is 35kHz dependent on software environment.