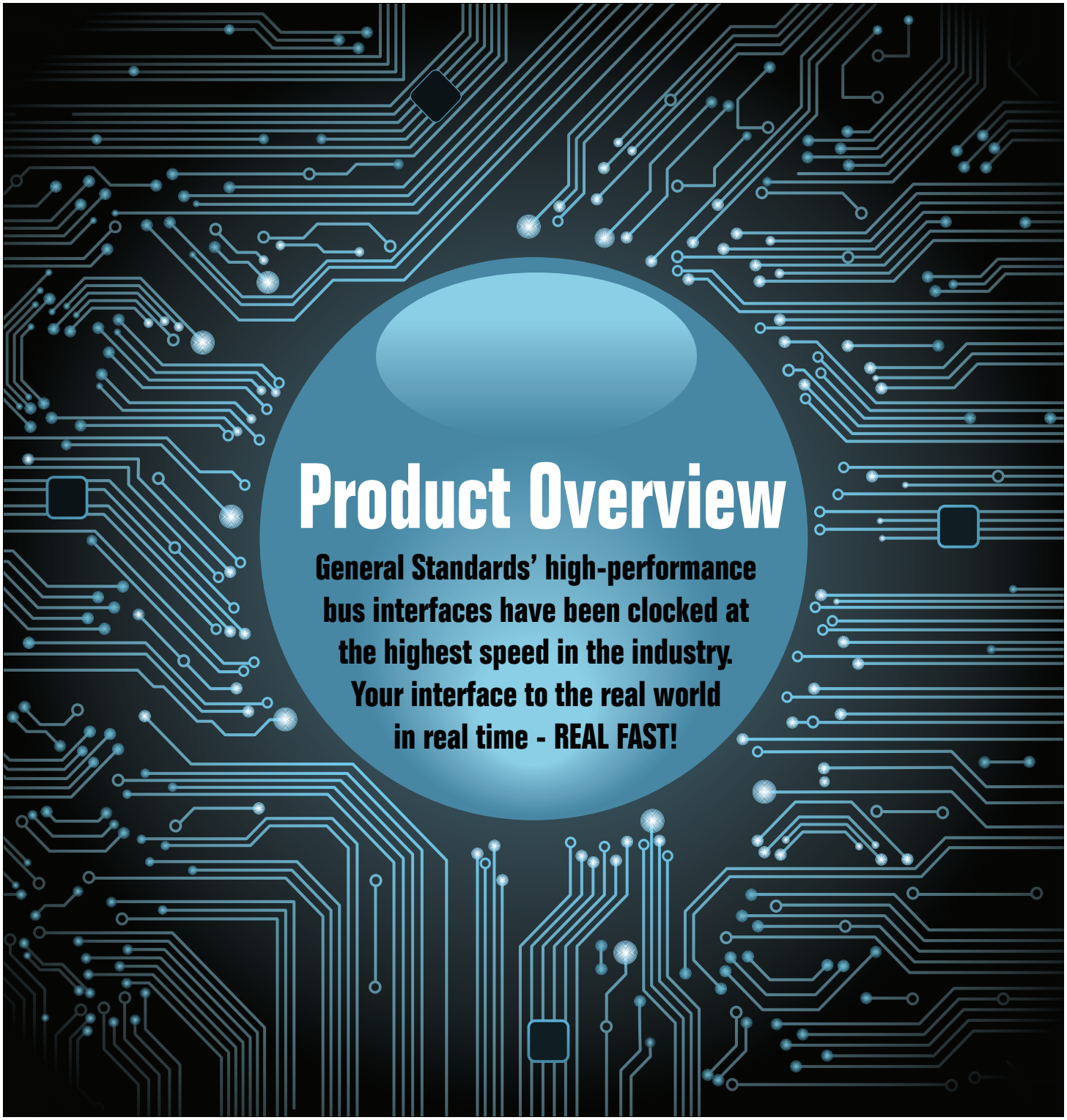
General Standards Corporation

High Performance Bus Interface Solutions

February 2013



ISO 9001 COMPLIANT

1-800-653-9970

www.generalstandards.com

REAL-TIME
REAL-FAST™

Distinct Features & Advantages of Our Products

Advantages of Sigma-Delta and Delta-Sigma Boards
- Multiple, adjustable high-resolution clocks
- Independent sample rate control per channel
- Asynchronous or synchronous inter-channel operation
- Programming of harmonic sampling rates
- Image Filters
- Software Sampling rates from 5 KSPS to 1.1 MSPS
- Software-selectable input voltage ranges from +1.25 Volts to +10 Volts

Advantages of Analog I/O Boards
- Hardware auto calibration; No missing codes introduced
- Autonomous operation; No host overhead
- Integrated EMI Shield for analog components reduces radiated EMI from host CPU
- Includes absolute analog accuracies in spec
- Lo-Profile 5-Volt DC/DC converters. Clean power and maximum efficiency with no +12 Volt power requirement
- Autonomous built-in test (Autocal)-No host involvement
- No field jumpers-Completely configurable via software
- Pluggable firmware-easy to upgrade. Custom features available
- Individually buffered analog inputs; Minimizes cross-talk and input leakage

Advantages of Digital I/O Boards
- Fastest general purpose Digital I/O board on the market (HPDI32 family)
- Deepest buffer storage (Up to 2 Mbyte total FIFO)
- Most flexible parallel I/O interface (Able to meet most peripheral requirements)
- We change our cable interface to meet customer requirements
- We routinely modify and ship custom handshake modifications in 3-4 weeks

Advantages of Serial I/O Boards
- High-end Universal Serial Controller supports Asynchronous, Bisync, HDLC, SDLC, & 9-Bit protocols
- Up to 10 Mbits/sec operation on all four channels simultaneously
- Serial I/O protocol (RS-232, RS-422/485, V.35, EIA-530) is software selectable on some models
- Deep FIFO buffers (32 Kbyte deep) for both Transmit and Receive on each channel

Advantages of Working with General Standards Corporation
- Customization to meet your requirements on most boards
- Quick-turn custom and new product developments
- Explicit Specifications
- Include Absolute Accuracies
- Comprehensive Documentation
- Talk directly to an application design engineer
- Commitment to continued growth and support
- Expanding Product Line

Software Drivers:
- Linux, VxWorks, Windows, & LabView drivers available. Call for others.

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Custom Board Design Service

Your Competitive Edge in Custom Designed Board Products

How do you select a business partner in custom-designed board products? If quality, service, and value are important to you—not to mention leading-edge design, engineering, and manufacturing capabilities—General Standards Corporation is tough to beat. In short, we give you the edge you deserve.

The General Standards' Advantage: Meeting Your Most Demanding Challenges Fast

The speed of the engineers in our design department, and the turnaround time of those who build our prototypes is unsurpassed. Combine that with the quality of our customer service resources, and you begin to understand how General Standards can ship even your largest order so quickly. That's a competitive edge you can use to your advantage in today's hurry-up marketplace. Another way General Standards gives you an edge is by constantly staying abreast of new technologies. If there is a better way to do something, we will find it or invent it. Many of General Standards' processes are innovative and a direct result of our employees and clients collaborating, recognizing, and then acting on new opportunities.

Responsive General Standards Service Before, During, and After Your Order

To General Standards, customer service actually starts before you are a customer. It starts with our listening and learning from you. Top management is accessible to every client, large or small, taking the time to understand our requirements up front. We are careful to build products that meet your needs in your specific application. Not only is your product custom-designed, but the process that creates it is too.

When You Call General Standards, You Can Talk to an Engineer

Our thoroughly trained design engineers make sure you never have to wait for answers or more importantly, action. Why do we work so hard at customer service? To save you valuable time—it's an edge we think you deserve.

General Standards: The Comprehensive Source for ALL Your Custom I/O Needs

We think about quality, service, and value so you don't have to. We make sure things are done right, consistently, and predictably. We stake our reputation on our ability to work with customers to solve any problems that may arise without saying "it's not our problem." We help you explore new ways of doing things, so why not choose us to take your project to the next level. Besides, it just makes good sense.

REAL-TIME REAL-FAST™

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New Products

Please see our website for the newest products

PMC66-18AISS6C

18-Bit, 6-Channel, 550KSPS, Analog Input Module with 6 Simultaneously Sampled Analog Inputs and 8-Bit Digital I/O Port

NEW

CCPMC66-16AI32SSC

Conduction-Cooled, 32 Differential Channels; 16-Bit Simultaneous Sampling; PMC Analog Input Board with 200 KSPS Sample Rate per Channel, 66 MHz PCI Support, and Rear-Panel I/O

NEW

PMC-24DSI16WRC

Wide-Range, 24-Bit, 16-Channel, 105KSPS Analog Input Module with 16 Wide-Range (High-level, Low-level) Delta-Sigma Input Channels, High DC Accuracy

NEW

PMC66-SI04BXR

High-performance Multi-Protocol Serial I/O with Software Configurable Cable Transceivers (RS422, RS232 and others) with Rear I/O

NEW

PMC66-18AI32SSC1M

32 Differential Analog Inputs with dedicated 1.0MSPS SAR 18-Bit ADC per channel, Exceptional combination of precision, Throughput and channel density on PMC

NEW

cPCI6U64-24DSI20C500K

Multi-Range 24-Bit, 20-Channel, 500ksps cPCI 6U Analog Input Modulewith 20 Multirange Delta-Sigma Input Channels

NEW

PCIe-16AI64SSC

64-Channel,16-Bit Simultaneous Sampling with Dedicated 200KSPS, PCIe Analog Input Board, 1MByte FIFO Data Buffer

NEW

cPCI6U64-20A0F16C500KR

20-Bit, 16-Output 500 KSPS Precision Wideband cPCI 6U Analog Output Board, Simultaneous Clocking, 8th-Order reconstruction filter at each output

NEW

PMC66-16AI32SSC

New Time Stamping. 32-Channel, Differential, 16-Bit Simultaneous Sampling; PMC Analog Input Board with 200 KSPS Sample Rate per channel and 66 MHz PCI Support

NEW

REAL-TIME REAL-FAST™

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Form Factors:

PCI

PMC

VME

CCPMC

PXI

PCI-X

XMC

PC/104-Express

PC/104-Plus

cPCI-X

cPCI

PCI-Express

Other Form Factors available or supported via adapters.

PMC64-HPDI40C2L-LVDS

High-speed 40-Bit Parallel Digital I/O PCI Board, 600 Mbytes per second I/O transfer rate via the front panel connector (LVDS transceivers)

NEW

PCIe4- to PMC Adapter

Supports 32/64 bit PCI/PCI-X Bus, both 3.3v & 5v PCI Signaling, and Rear I/O. Adapts a single-width PMC form factor to a 4 lane PCI Express (x4 link)

NEW

PMC66-18AI64SSC500K

64-Channel, 18-Bit Simultaneous Sampling Analog Input Board, Sampling Rates to 500 KSPS per Channel, 1 MByte FIFO Data Buffer provides 256K-Sample data capacity

NEW

PMC66-1616AO64C

16-Bit, 64/32-Channel, 500 KSPS PMC Analog Output Board, Software-configurable as either 64 single-ended outputs, or as 32 balanced-differential outputs

NEW

PMC66-16CLI8CL04

16-Bit Analog Input/Output Board with 8 Current Loop inputs, 4 Current Loop Outputs, and 16-Bit Digital I/O Port, Independent 32K-sample analog input and output FIFO buffers

NEW

PCIe4-SIO8BX

Eight Channel, High Performance Serial I/O PCI CARD featuring Multi-Protocol Serial I/O with Software Configurable Cable Transceivers and 32k byte FIFO Buffers (512k byte total)

NEW

CCPMC-24DI8R

8-Channel 24-Bit Delta-Sigma Conduction Cooled PMC Analog Input Board With 200 KSPS Sample Rate per Channel, Supports GPS Synchronization to a 1PPS Input

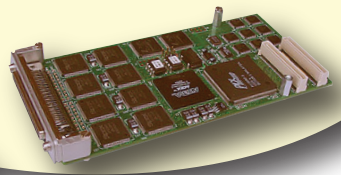
NEW

XMC-SIO4BX

Four channel, High Performance Multi-Protocol Serial I/O with Software Configurable Cable Tranceivers (RS422, RS232 and others), Provides high speed, full-duplex, multi-protocol serial capability for XMC applications

NEW

Free Loaner Boards Available!



Free Drivers Available!

Our claim to fame is our ability to develop custom boards as well as new products quickly and efficiently. We place emphasis on making product designs as simple and portable as possible. This approach results in faster time-to-market of new standard products as well through the re-use of core designs on alternative form factors.

General Standards Corporation

High Performance Bus Interface Solutions

Analog I/O Boards

General Standards Corporation is a leading supplier of a wide range of high speed Analog I/O boards for embedded applications on several form factors/buses, and for many operating systems. See our selections below:

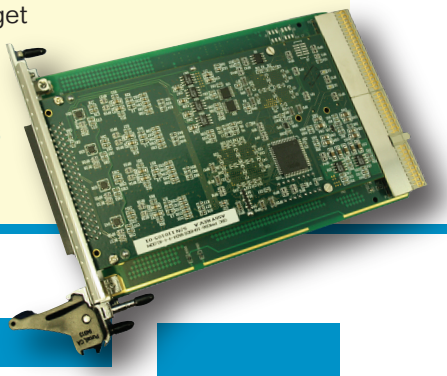
Features Include:

- Up to 64 Input Channels per Board
- Programmable Sampling Rates to 50M SPS
- GPS Synchronization
- Auto-Calibration
- Multi-Board Synchronization
- Sigma-Delta and Delta-Sigma Analog I/O
- Resolutions from 12 bits to 24 bits

Software Drivers

- Windows
- Linux
- Labview
- VxWorks
- MathWorks
- xPC Target
- QNX
- Solaris

Ask About Other Drivers



Sigma-Delta Analog I/O

24-Bit Delta-Sigma Analog In

24DSI8R 8-Channel 24-Bit Delta-Sigma Conduction Cooled PMC Analog Input Board With 200 KSPS Sample Rate per Channel

24DSI20C500K Multi-Range 24-Bit, 20-Channel, 500KSPS cPCI 6U Analog Input Module With 20 Multirange Delta-Sigma Input Channels

24DSI16WRC Wide-Range 24-Bit, 16-Channel, 105KSPS Analog Input Module With 16 Wide-Range (High-Level, Low-Level) Delta-Sigma Input Channels

24DSI32 32-Channel 24-Bit Delta-Sigma PCI Analog Input Board, low noise, low phase distortion and multi-board synchronization, ideal for state-of-the-art sonar and noise monitoring applications. cPCI6U version has rear I/O

24DSI12 12-Channel 24-Bit Delta-Sigma PMC Analog Input Board, Simultaneous Sampling, Sample rates are adjustable from 2KSPS to 200KSPS

24DSI6LN Six-Channel Low-Noise 24-Bit Delta-Sigma PC104-Plus board with 200 KSPS Sample Rate per Channel provides high-density 24-bit analog input resources on a standard PC104-Plus module.

24DSI6C500K 24-Bit, 6-Channel, 500KSPS, Analog Input Module With 6 Delta-Sigma Input Channels

Sigma-Delta Analog I/O

16-Bit Sigma Delta Analog I/O

16HSDI4A04 16-Bit, 8-Channel, 1-MSPS PMC Analog Input/Output

Sigma-Delta Analog I/O

16-Bit Sigma Delta Analog In

16SDI Sigma-Delta A/Ds to 220K Samples/Sec per Channel (Precise Instrumentation/ Wideband Audio)

16SDI-HS 16-Bit, Six-Channel Sigma-Delta Analog Input PMC Board With 1.1 MSPS Sample Rate per Channel, and Two Independent Clocks

16HSDI
High-Speed Sigma-Delta A/Ds to 1.1M Samples/ Sec per Channel (Instrumentation Precision/ Wideband Audio)

Analog Input

18-Bit Analog In

18AISS6C **New Product**
Six differential analog inputs with dedicated 18-Bit ADC per channel, True simultaneous sampling of all inputs to 500KSPS per channel, SAR architecture, No minimum sample rate

18AI32SSC1M **New Product**
32 Differential Analog Inputs with dedicated 1.0MSPS

18AI64SSC500K **New Product** 64-Channel 18-Bit Simultaneous sampling Analog Input Board, Sampling rates to 500 KSPS per channel, 1MByte FIFO Data Buffer provides 256K-Sample data capacity

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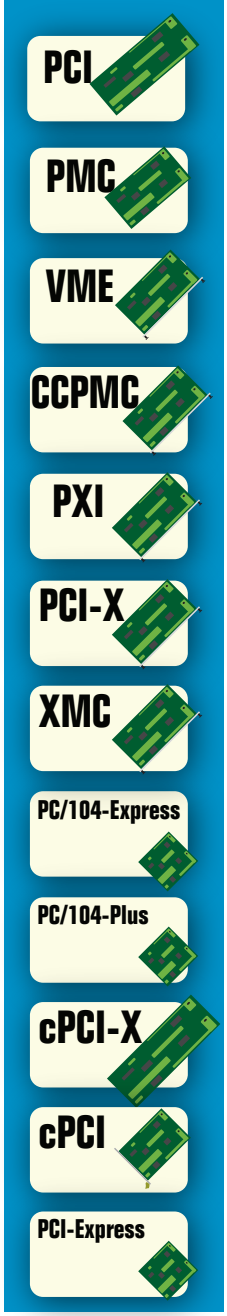
Form Factors:



Other Form Factors available or supported via adapters.

Analog Input

16-Bit Analog In

16AI32SSA Conduction-Cooled, 32 Differential Channels; 16-Bit Simultaneous Sampling; PMC Analog Input Board With 200 KSPS Sample Rate per Channel, 66 MHz PCI Support, and Rear-Panel I/O

16AI32SSC **New Product**
32-Channel, Differential, 16-Bit Simultaneous Sampling; PMC Analog Input Board With 200 KSPS Sample Rate per Channel and 66 MHz PCI Support

16AI64 64 Analog Input Channels (16-bit A/D), High Density, Provides a cost effective 500,000 conversions-per-second

16AICS32 32-CHANNEL 16-BIT TRANSDUCER INPUT board With Scanning Input Current Source

16AI64SSC **New Product**
64-Channel, 16-Bit Simultaneous Sampling PMC Analog Input Board with Large FPGA

Analog Input

14-Bit Analog In

14HSAI2 **New Product**
14-Bit, 2-Channel, 50MSPS/Channel Conduction Cooled PM Analog Input Board With 66MHz PCI Compatibility, Multiple Ranges, and Data Packing

14HSAI4 14-Bit, 4-Channel, 50MSPS/Channel PMC Analog Input Board

Analog Input

12-Bit Analog In

12AI64 64 Analog Input Channels (12-bit A/D), Provides cost effective 1,500,000 conversions-per-second

Analog Output

20-Bit Analog Out

20AOF16C500KR **New Product**
20-Bit 16-Output 500KSPS Precision Wideband cPCI 6U Analog Output Board

Analog Output

18-Bit Analog Out

18AO8 **New Product**
18-Bit Eight-Output 500KSPS Precision Wideband

Analog Output

16-Bit Analog Out

16AO64C **New Product**
16-Bit, 64/32-Channel, 500KSPS PMC Analog Output Board

16AO16 **New Product**
16-Channel 16-Bit Differential High-Speed PMC Analog Output Board With 440,000 Samples per Second per Channel, and 66 MHz PCI Support

16AO16FLV **New Product**
16-Channel 16-Bit Differential High-Speed PCI Analog Output Board With 450,000 Samples per Second per Channel, 66 MHz PCI Support, and Selectable Reconstruction Filters

16AO20 **New Product**
20-Channel 16-Bit High-Speed Analog Output PC104 Plus Board With 400,000 Samples per Second per Channel, and Simultaneous Clocking

16AO4MFS
16-bit Analog Multifrequency Analog Output (4 Channels)

Analog I/O

18-Bit Analog I/O

18AISS8AO8 **New Product**
8-Input, 8-Output High-Precision Wideband 18-Bit 500KSPS PCI Analog Input/Output Board With Selectable Current-Loop Input Terminator

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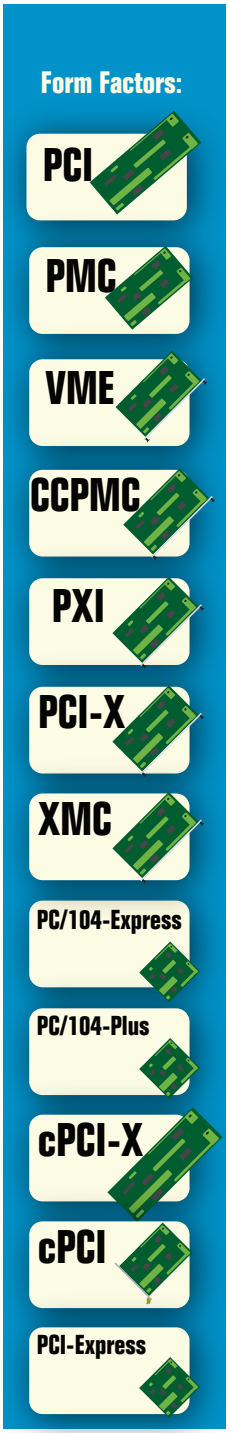
Form Factors:



Other Form Factors available or supported via adapters.

Analog I/O

18-Bit Analog I/O

18AISS8A08 **New Product**
8-Input, 8-Output High-Precision Wideband 18-Bit 500KSPS PCI Analog Input/Output Board With Selectable Current-Loop Input Terminator

16-Bit Analog I/O

16CLI8CL04 16-Bit Analog I/O Board with 8 current loop inputs, 4 current loop outputs, and 16-Bit Digital I/O port, Independent 32K-sample analog input and output FIFO buffers

16AI0 16-bit Analog I/O, 32-Input/4-Output Channels, 16 bit Digital I/O Port and 300k-Conversions/sec

16AI0168 16-bit Analog I/O, 16 single ended or 8 differential Input Channels, 32-K sample FIFO buffers

ADADIO 12-Channel, 16-Bit Analog I/O PMC With 8 Simultaneous Input Channels at 200K Samples per Second per Channel, 4 Output Channels, and Byte-Wide Digital I/O Port

16AISS8A04 12-Channel, 16-Bit PMC Analog Input/Output Board With Eight Simultaneously Sampled Analog Inputs, Four Analog Outputs, and Input Sampling Rates to 2.0 MSPS per channel

16AISS16A02 16-Bit, 18-Channel, 1.0-MSPS PMC Analog Input/Output Board With 16 Simultaneously Sampled Analog Inputs, Two Analog Outputs, and Input Sampling Rates to 1.0 MSPS per channel

16AI088 16-bit Analog In and Analog Out, 8 analog inputs and 8 analog outputs per board, Supports arbitrary waveform generation

Analog I/O

12-Bit Analog Out

12AI0 12-Bit Analog I/O, 32-Input/4-Output Channels, 16 Digital I/O Port and 1.5M-Conversions/secAnalog I/O, 32-Input,

12AISS44A04 12-Channel, 12-Bit PMC Analog Input/Output Board With Eight Simultaneously-Sampled Wide-Range Inputs at 2.0 MSPS per Channel, Four Analog Outputs, and 16-Bit Digital I/O Port

12AISS8A04 12-Channel, 12-Bit PMC Analog Input/Output Board with Eight 2.0 MSPS per Channel Analog Inputs, Simultaneous Input Sampling, Wide-Range Analog Inputs; ±100mV to ±10V Fullscale

General Standards Corporation
High Performance Bus Interface Solutions

Serial I/O Boards

General Standards Corporation is a leading supplier of a wide range of high speed Serial I/O boards for embedded applications on several form factors/buses, and for many operating systems. See our selections below:

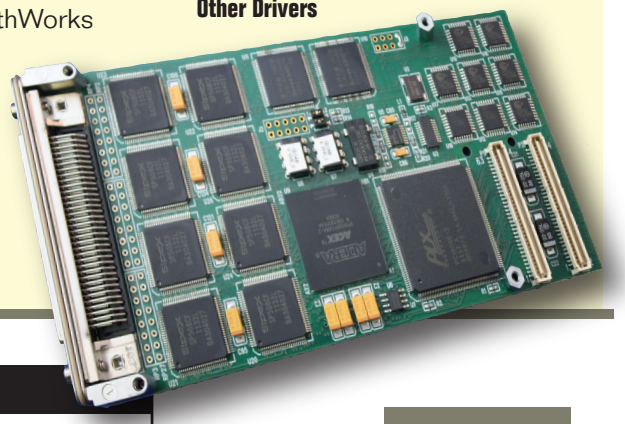
Features Include:

- Serial Mode Protocols include Asynchronous, Bisync,SDLC, HDLC, IEEE 802.3, Synchronous Telemetry, Simple Clock/Data ("-SYNC" product line), and Di-phase.
- Transceiver support RS485, RS422 (V.10), RS232 (V.28), RS423, V.35, RS530, as well as other software selectable mixed protocol modes
- Up to Eight Independent Serial Channels per Board
- Synchronous Serial Data Rates up to 10 Mbits/sec
- Asynchronous Serial Data Rates up to 1 Mbits/sec
- Deep Transmit and Receive FIFOs up to 128K
- PMC and cPCI rear I/O support
- Custom Protocols Available

Software Drivers

- Windows
- Linux
- Labview
- VxWorks
- MathWorks
- xPC Target
- QNX
- Solaris

Ask About Other Drivers



Serial I/O

SIO8BXS

SIO8BXS **New Product**
8-channel High-performance Multi-Protocol Serial I/O with Software Configurable Cable Transceivers (RS422, RS232 and others.

Serial I/O

SIO8BX-SYNC

SIO8BX **New Product**
High Speed Eight Channel Synchronous Serial to Parallel Controller Featuring RS485/RS232 Serial I/O (Software Configurable) and 32k Byte FIFO Buffers (512k Byte total)

Serial I/O

SIO8BXS-SYNC

PCI-SIO8BXS-SYNC **New Product**
Eight Channel Synchronous Serial To Parallel Controller with Software Configurable Cable Tranceivers (RS422, RS232 and others).

Serial I/O

SIO4BX

SIO4BX **New Product**
High-performance Multi-Protocol Serial I/O with Software Configurable Cable Tranceivers (RS422, RS232 and others)

Serial I/O

SIO8BX

SIO8BX **New Product**
Eight Channel High Performance Serial I/O PCI CARD Featuring Multi-Protocol Serial I/O with Software Configurable Cable Transceivers and 32k byte FIFO Buffers (512k byte total)

Serial I/O

SIO4BXR

SIO4BXR **New Product**
High-performance Multi-Protocol Serial I/O with Software Configurable Cable Tranceivers (RS422, RS232 and others) with Rear I/O.

REAL-TIME REAL-FAST™

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Form Factors:

PCI

PMC

VME

CCPMC

PXI

PCI-X

XMC

PC/104-Express

PC/104-Plus

cPCI-X

cPCI

PCI-Express

Other Form Factors available or supported via adapters.

Serial I/O

SIO4BX-SYNC

SIO4BX-SYNC
Quad Channel Synchronous Serial To Parallel Controller with Software Configurable Cable Tranceivers (RS422, RS232 and others).

Serial I/O

SIO4A

SIO4A Four RS-422/ 485 or RS232 Channels (Deep FIFOs)

Serial I/O

SIO4AR-SYNC

SIO4AR-SYNC Protocol Independant Serial I/O (up to 8 Mbits/sec) with Rear I/O and Deep FIFOs

Serial I/O

SIO4ARHM

SIO4ARHM High-performance Serial I/O (to 10Mbits/sec) with Deep FIFOs

Serial I/O

SIO4AR

SIO4AR High-performance Serial I/O (up to 10Mbits/sec) with Rear I/O and Deep FIFOs

Serial I/O

HPDI32A-ASYNC

HPDI32A-ASYNC High-Speed Async Serial I/O (to 5Mbits/sec) with Deep FIFOs

Serial I/O

SIO4B

SIO4B High-performance Serial I/O (to 10Mbits/ sec) with Deep FIFOs and FPGAs provide for Flexible Protocol.

Serial I/O

HPDI32A-DIPHASE

HPDI32A-DIPHASE High-Speed Di-Phase Serial I/O (to 10Mbits/sec) with Deep FIFOs

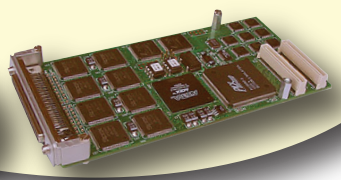
Serial I/O

SIO4B-SYNC

SIO4B-SYNC Quad Channel Synchro-nous Serial To Parallel Controller with Optional Deep Transmit and Receive FIFOs

Free Loaner Boards Available!

Free Drivers Available!



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High Performance Bus Interface Solutions

Digital I/O Boards

General Standards Corporation is a leading supplier of a wide range of high speed Digital I/O boards for embedded applications on several form factors/buses, and for many operating systems. See our selections below:

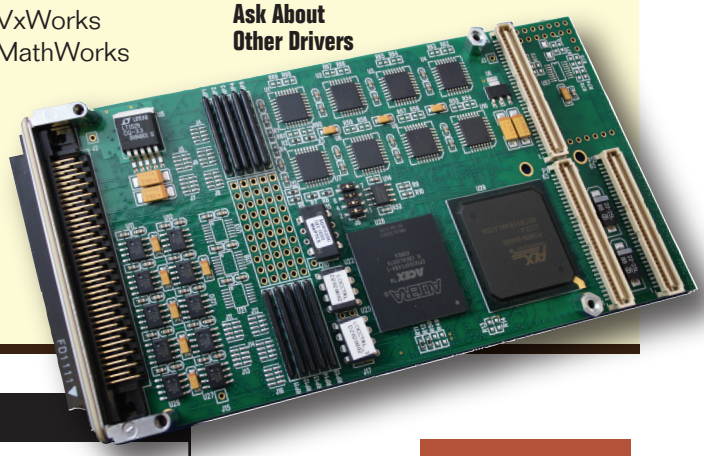
Features Include:

- Cable Transfer speeds up to 400 mb/per second
- Large FPGA provides for flexable cable interface

Software Drivers

- Windows
- Linux
- Labview
- VxWorks
- MathWorks
- xPC Target
- QNX
- Solaris

Ask About Other Drivers



Digital I/O

HPDI32A (RS-422/485)

HPDI32A Fast and flexible bi-directional 32-bit digital I/O board that transmits and receives data up to 80 Mbytes (differential I/O)

Digital I/O

HPDI32A

HPDI32A High-speed Digital I/O (Flexible Cable Interface), Bi-directional 32-bit digital I/O board that transmits and receives data up to 80 Mbytes (differential I/O) or up to 200 Mbytes (Pseudo ECL I/O) per second

Digital I/O

HPDI32A-COS

HPDI32A-COS PMC Digital I/O with Change-of-State, Deep FIFO buffers (128 Kbytes) allow data bursts to be transferred over the PCI bus independent of transfers over the cable

Digital I/O

OPTO32A

OPTO32A Optically-Isolated I/ O with Change-of-State Interrupts

Digital I/O

OPTO32B

OPTO32B 32 optically-coupled digital I/O channels consisting of 8 outputs and 24 inputs

Digital I/O

OPTO32C

OPTO32C True PCIe form factor, Optically-Isolated I/O with Change-of-State Interrupts

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Form Factors:

PCI

PMC

VME

CCPMC

PXI

PCI-X

XMC

PC/104-Express

PC/104-Plus

cPCI-X

cPCI

PCI-Express

Other Form Factors available or supported via adapters.

Digital I/O

HPDI32AL

HPDI32AL **New Product**
High-Speed Digital I/O; 64-bit PCI

Digital I/O

HPDI32AL (RS-422/485 or LVDS)

HPDI32AL **New Product**
High-Speed Digital I/O, 64-bit PCI interface capable of 400Mbytes/sec

Digital I/O

HPDI32AL (PECL)

HPDI32AL **New Product**
High-Speed Digital I/O, 64-bit PCI, 7 bi-directional programmable handshake lines to allow easy interfacing to most digital I/O

Digital I/O

HPDI32ALT

HPDI32ALT **New Product**
TTL or LVDS 32-bit Digital I/O, Flexible bi-directional 32-bit digital I/O board that transmits and receives data from 20 Mbytes (TTL I/O) to 200 Mbytes (LVDS) per second

Digital I/O

HPDI40C2L

HPDI40C2L High-speed 40-Bit Parallel Digital I/O PCI Board, 8 bi-directional signals can be used as clocks and/or handshaking protocol

Digital I/O

DIO24

DIO24 Simple 25-bit discrete I/O interface board, Host side connection is PCI based and the external I/O interface is variable

Digital I/O

DMI32

DMI32 Very High-speed Parallel Digital Input/Output Board Up to 200 Mbytes/s Cable I/O

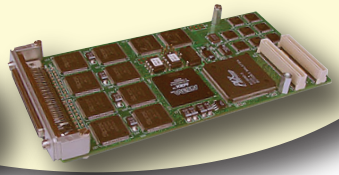
Digital I/O

HPDI32B

HPDI32B **In Development**
High-Speed Digital I/O; 64-bit PMC; Huge FIFO Buffer; LVDS or TTL Transceivers



Free Loaner Boards Available!



Free Drivers Available!

General Standards Corporation
High Performance Bus Interface Solutions

Sigma-Delta and Delta-Sigma Products

Precision 8K Sampling Rate Combined with Integral Filters Make Sigma-Delta A/D Ideal for Telecom Applications.

Oversampling provides effective sampling rates equal to many times the corresponding rates for successive-approximation converters. Our Sigma-Delta boards provide precision 8TH anti-aliased input sampling up to 1.1M Samples/Sec.

No External Filters Required:

You always have the maximum input bandwidth available for any selected sampling rate. Integral anti-aliasing uses both digital and analog filters to adjust the bandwidth automatically to just under one-half of the selected sampling rate. Out-of-band interference is stopped in its tracks and never reaches your data arrays.

Large Data Buffers:

Data loss is unacceptable. General Standards designs integrate large data FIFO buffers to cope with operating system latencies and prevent the loss of your valuable data.

Flexible Sample Rate Control:

Sampling rates can be adjusted individually for each channel, or all channels can be sampled at a single common rate. Sampling rates are adjustable from 5 KSPS to 1.1 MSPS in increments of 0.2 percent. Custom oscillator frequencies are available to provide the exact set of sampling rates required for specific applications.

EMI Shields on PMC Boards:

The PMC environment allows for repositioning of sensitive analog components to within a fraction of a millimeter of high-energy digital devices and busses. To minimize induced noise, General Standards provides an essential EMI shield between the analog section of our PMC board and the host board.

Extremely Low Noise Levels:

Experience superior low-noise performance with a 1.5 LSB RMS typical noise specification, corresponding to just 57 microvolts on a +1.25 Volt range, or a signal-to-noise ratio of 93dB from 10Hz to 100kHz.

Applications:

- Acoustic Analysis
- Precision Voltage Measurement
- Audio and Sonar
- Sonograms, Oceans & Underground Radar
- Target Locator (VHF & UHF)
- Analog Inputs
- Audio Spectral Analysis
- Harmonic Sampling

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High Reliability is NOT Just Extended Temperature

General Standards Corporation introduces our new High-Reliability (HIREL) ordering option. If a product will experience environmental temperature fluctuations or power cycling, then the high reliability ordering option is recommended.

It is also recommended for applications where repairs are difficult for failure is unacceptable.

- Raw boards are gold immersion type
- Extended temperature parts are used
- Raw boards and large parts are cleaned and baked prior to assembly
- Leaded solder is used
- Cleanliness testing is done on one board from each lot
- Boards are subjected to a 72-hour burn-in (while operating)
- X-Ray photos of all BGAs are provided

DELTA-SIGMA DATA ACQUISITION BOARD

70% of orders ship from STOCK
Comparison of General Standards' Delta-Sigma Data Acquisition Board Characteristics with a leading competitor

KEY FEATURES	GENERAL STANDARDS PCI-24DSI32	LEADING COMPETITOR
Power Dissipation**	20 watts typical	35 watts/32-Channel
Phase Skew	55ns (0.1 deg at 5KHz)	Not Specified
Crosstalk	96dB	90dB
SINAD	93dB	90dB
Gain Accuracy	+/-0.1mV, +/-0.1 percent	Not Specified
Sample Rate	200K per Channel	108K per Channel
Commercial Temp Range	0 to 65	0 to 50
Industrial Temp Range	-40 to 85	-40 to 85
Cost for 32-Channel	$5,995 (Qty 1)*	$9,000

*Cost is for a 32-Channel Commercial Version. Quantity discounts available. conformal coating available
**Power is for a 32-Channel version of the board. Power dissipation for other versions is 6 Watts typical.

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High Performance Bus Interface Solutions

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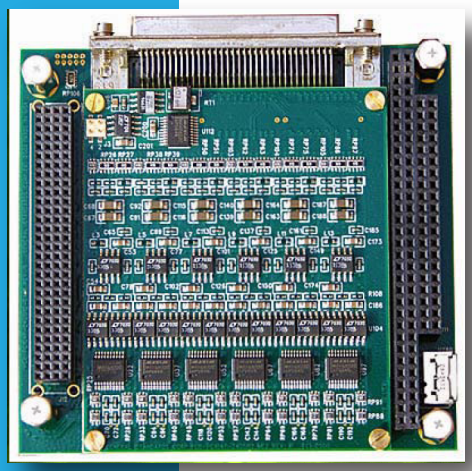
GPS Synchronization

Precision Time Sampling **Now Available!**



PC104P-24DSI12

12-Diff Channels, 24 Bit Analog Input
Compatible with PCI, PCI-X, PCIe, PC104P, & PMC

Advanced Features of the 24DSI12:

- Supports GPS Synchronization through a 1PPS input
- 12 Differential 24-Bit Analog Input Channels
- 200 KSPS Sample Rate per Channel
- Delta-Sigma Converter per Channel, with Linear Phase Digital Antialias Filtering
- Software Selectable Input Ranges: ±2.5V, ±5V, or ±10V
- 256K – sample FIFO Buffer
- Synchronous or Independent ADC Clocking
- Internal Sample Rate Generator

1-Year Warranty

Low noise, 24-bit resolution, low phase distortion and multi-board synchronization make the PC104P-24DSI12 board ideal for state-of-the-art sonar and noise monitoring applications.
The GPS Synchronization feature allows the 24DSI12 to synchronize to an external timing reference. The external sync input pins in the I/O connector can be configured to accept a 1PPS GPS clock (LVDS or TTL).

Background Information on GPS:

The GPS System (also called NAVSTAR) includes 24 satellites, each with three or four onboard atomic clocks. The US Naval Observatory monitors the satellite's clocks and sends control signals to minimize the differences between their atomic clocks and a master atomic clock for accuracy and traceable to national and international standards (known as UTC).

For time synchronizing a clock, the GPS signal is received and distributed by a master clock, time server, or primary reference source to a device, system, or network so the local clocks are synchronized to UTC. Typical accuracies range from better than 500 nanoseconds to 1 millisecond anywhere on earth.

The GPS clock synchronization eliminates the need for manual clock setting (an error-prone process). The benefits are numerous and include: legally validated time stamps, regulatory compliance, secure networking, and operational efficiency. The GPS synchronization feature may be added to other General Standards analog input boards. Call for availability.

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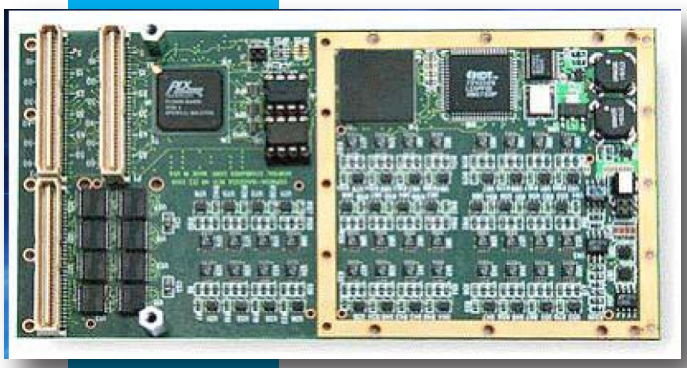
Conduction Cooled PMC

32 Differential Channels, 16-Bit Simultaneous Sampling

CCPMC66-16AI32SSA



32 Diff Channels, Simultaneous Sampling, 200 KSPS Sample Rate, 66MHz PCI Support

Advanced Features of the 16AI32SSA:

- 32 Differential Analog Inputs
- 200 KSPS Sample Rate per Channel
- Simultaneous Sampling of all Inputs with Minimum Data Skew
- 512K Sample Buffer
- Compatible with Conduction-Cooled or Air-Cooled Hosts Without Faceplate
- PMC Rear-Panel I/O (PMC P4)
- Single-width PMC Form Factor
- Allows for Maximum Heat Transfer, Especially in Non-Forced Air Applications
- Perfect for Avionics, Ground Vehicles, and Space Applications

1-Year Warranty

General Standards Corporation announces the CCPMC66-16AI32SSA, a New Conduction-Cooled, 32 Differential Channels, 16-Bit Simultaneous Sampling; PMC Analog Input Board.

The 16-Bit CCPMC66-16AI32SSA analog input board samples and digitizes up to 32 input channels simultaneously at rates up to 200,000 samples per second for each channel. Each input channel contains a dedicated 16 Bit sampling ADC, and the resulting 16-Bit sampled data is available to the PCI bus through a 1MByte FIFO buffer. The 32-Bit local data path supports full D32 local-bus data packing. Throughput capacity is further enhanced with 66MHz PCI support. All operational parameters are software configurable.

Inputs can be sampled in groups of 2, 4, 8,16, or 31/32 channels; or any single channel can be sampled continuously. The sample clock can be generated from an internal rate generator, or by software or external hardware. Input ranges are software-selectable as ±2.5V, ±1.25V, or ±0.625V. An on-demand auto-calibration feature determines offset and gain correction values for each input channel, and applies the corrections subsequently during acquisition. A self-test switching network routes calibration reference signals to each channel through internal self-test switches, and permits board integrity to be verified by the host.

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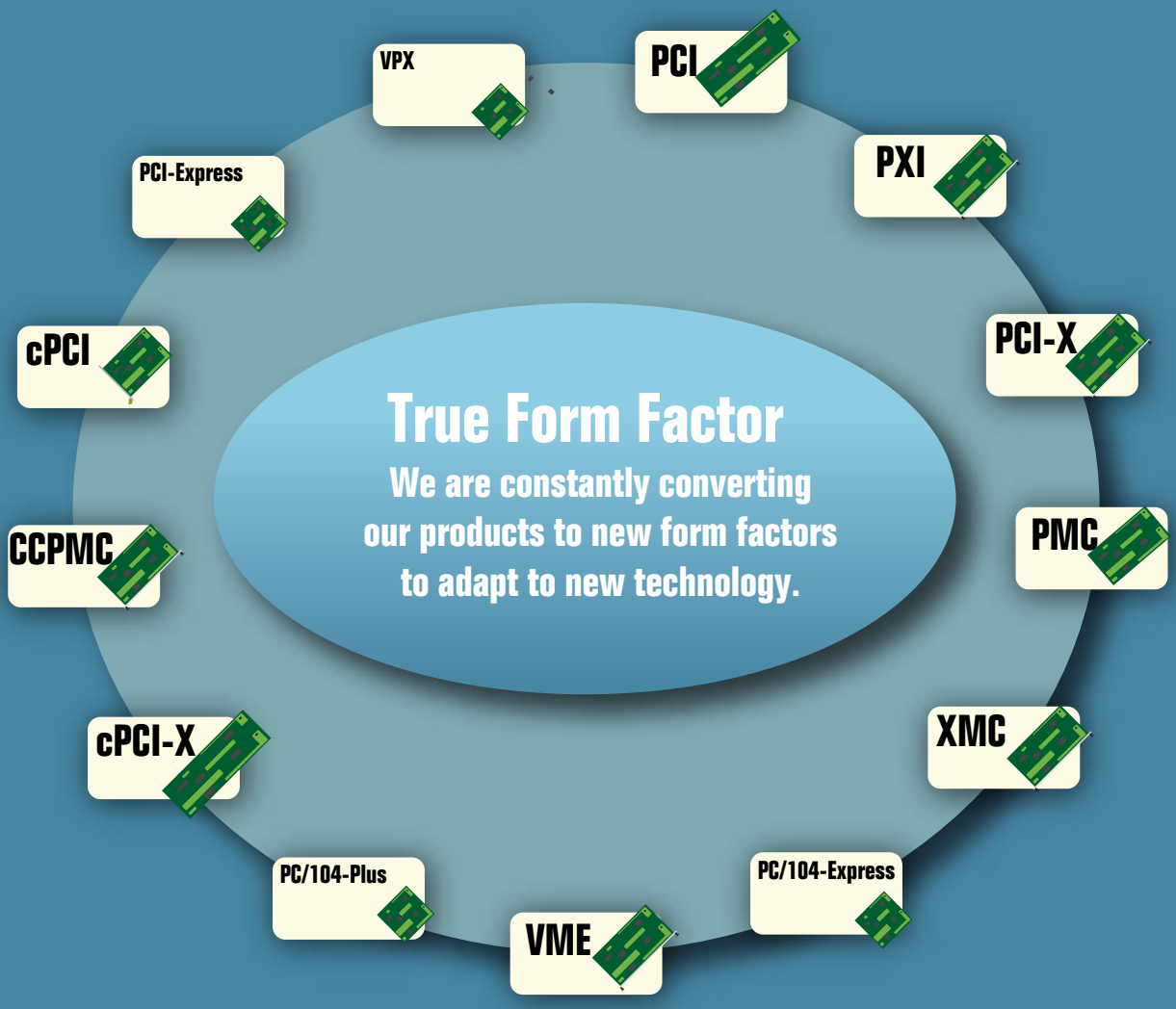
Adapter Boards

Available Form Factor	Active/Passive	Key Features
PCIe4 to PMC Adapter	Active	Four Lane PCIe Interface, 64 / 32-Bit PMC Bus Width, 33MHz / 66MHz PMC Bus Speed, Cooling Fan Option, I/O Connector for Rear I/O, Forward Mode Only, No External Power Required.
PCIe1 to PMC Adapter	Active	One Lane PCIe Interface, 32-Bit PMC Bus Width, 33MHz / 66MHz PMC Bus Speed, Cooling Fan Option, I/O connector for Rear I/O, Forward Mode Only, No External Power Required.
PCI to PMC Adapter	Passive	32 / 64 Bit PMC Bus Width, 33MHz / 66MHz PMC Bus Speed, I/O Connector for PMC Rear I/O Option.
PMC to PCIx Adapter	Active	Short Length PCIx Card, Up to 133MHz PCIx Bus Speed, Up to 66MHz PMC Bus Speed.
cPCI to PMC Adapter	Passive	3U cPCI Form Factor PMC Bus Width, 32-Bit and 64-Bit Versions Available, 33MHz / 66MHz PMC Bus Speed, PXI Option Available.
PCIe to PMC Adapter	Active	One Lane PCIe Interface, 32-Bit PCI Bus Width, 33MHz / 66MHz PMC Bus Speed, I/O Connector for Rear I/O, Forward Mode Only; No external power required, also supports Conduction-Cooled PMC modules.
PCIe104x1 to PMC Adapter	Active	Supports 32-bit PCI Bus, Rear I/O, and both 3.3V and 5V Signaling; Adapts a single-width PMC form factor to a 1 Lane PCI Express.
PMC to PC104+ Adapter	Passive	108° Rotated Version with Connector for PMC Rear I/O option available; Rotary switch for PC104+ Slot Selection.
PC104+ Spacer	Passive	Allows for additional space between two PC104+ modules; PCI Only and ISA Only versions available.
PC104-Express Spacer	Passive	Designed to allow an additional amount of distance to be placed between two PCIe104 modules with minimum effort; Contains one stack-through PCIe104 and PCI connector.

Flexibility Means Adapting to Changing Technology

- Through the use of adapters, we extend the use of our boards to new system bus types and new technology.
- Our customers are no longer constrained to a specific bus type.
- They can even use the same PMC board on multiple platforms by simply plugging the PMC board into a different adapter.
- The adapters are transparent and do not need any changes to software when supporting/migrating to a new platform.



Our products are compatible with virtually every computer bus on the market.

Our Affirmations:

General Standards Corporation develops and manufactures the highest-performance Analog I/O, Digital I/O and Serial I/O products based upon a variety of buses such as PMC, PCI, VME, PC/104 and cPCI. Our extensive product line (currently over 70 products) includes I/O boards, high speed links, cables,and software drivers.

Product Features

Our products are designed to increase your system performance, improve your software integration, and maximize your development productivity. We serve a sophisticated customer base of engineers and scientists who demand high quality products and support; they provide us with valuable feedback that helps us develop better products. Our new product summary presents a number of new products, as well as enhancements to many of our existing products. We also are continuously upgrading the value of the Web site, to make it a better tool for you. I encourage you to visit the site often to gather the latest information on our products and product upgrades.

Customer Service

In all of our interactions, we strive to keep you satisfied with our company. Our technical staff is available to discuss your needs and explain our products. We also take great pride in providing good support for your system integration effort. You will talk to an seasoned engineer.

New Product Development

At General Standards Corporation we are committed to your success and we continuously improve our existing products and deliver innovative new products on a regular basis. We pay close attention to customer needs in an effort to provide the best products in the business. So, if you have an interesting or unique product idea, we would like to discuss it with you, please give us a call. We are continually adding new products and adding features; the latest versions of our product brochures are posted on our website.

Ordering and Availability

Most of our boards are available in small quantities from stock and can be shipped within 5 days. We can Email sample software and manuals (PDF or Word format). If necessary we can also mail hard copy manuals and sample software.

Mission Statement

General Standards Corporation's mission is to be the dominant provider of PMC and high performance PCI analog, digital, and serial I/O boards for the embedded market. We will achieve this through our commitment to open standards, high quality, and customer satisfaction. We work continuously with customers to ensure that investments made today will work in tomorrow's application environment.

Software Drivers

We have drivers for most of our products. We have VxWorks™, Windows™, Linux™, Labview™ and other drivers. We are constantly developing new drivers and porting our drivers to the newest processor boards.

Technical Support

We have a staff of Engineers to help answer any questions you may have about our products. We will patiently and courteously provide any support that you need to make sure that you are satisfied with our products. We pride ourselves on close customer teamwork and strategic alliances with vendors and computer board manufacturers. Our employees understand that our future is in the hands of our customers, and customer satisfaction is the driving force for long-term, mutually beneficial strategic partnerships. We stake our reputation on our ability to work with customers to solve any problems that may arise without ever saying "it's not our problem".

Custom Board Development

Our claim to fame is our ability to develop custom boards as well as new products quickly and efficiently. We emphasize the use of small development teams with one (or more) persons assigned to each major aspect of the design effort, conceptual design, PLD design entry, simulation schematic entry, test code, and documentation. We place a lot of emphasis on making documentation easy to understand; this allows for easier customization and re-use of core designs on variations of a product.

The time span to develop a new product is typically 8 to 14 weeks. In one case we made a major design variation (doubled FIFO width) in less than two weeks (from decision to delivered product); this included new artwork, raw board fab, assembly, and testing.

The challenge of doing a high quality design in the shortest time possible is an important part of our company's culture. We have a winning team focused on high quality, state-of-the-art products, and good customer service.

Give us a call. We will help you any way we can.
Paul Rainosek, President

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General Standards Corporation

High Performance Bus Interface Solutions

Call and talk to some of the most knowledgeable people in the business.

800-653-9970

Sales: 256-880-8787, ext. 2

General Standards' high-performance bus interfaces have been clocked at the highest speed in the industry. Your interface to the real world in real time - REAL FAST!

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