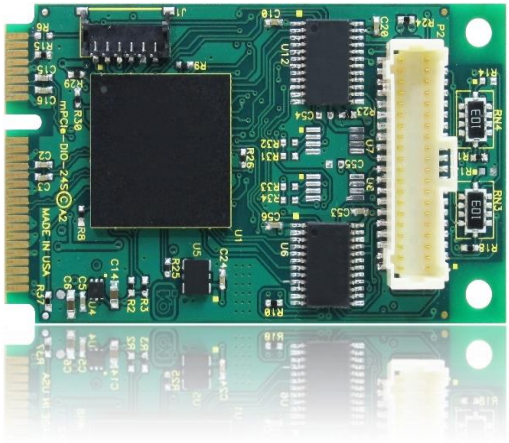
ACCES I/O PRODUCTS, INC.

24 Digital I/O with CoS IRQ
PCI Express Mini Card Datasheet

Features

Models mPCIe-DIO-24S and mPCIe-DIO-24



- PCI Express Mini Card (mPCIe) type F1, with latching I/O connectors
- 24 high-current DIO lines (24mA source/sink)
- Change-of-State (CoS) detection IRQ generation
- 10K ohm Pull-Up resistors
- Four and eight bit ports independently selectable for use as inputs or outputs
- All signals brought out to optional panel-mountable 37-pin male DSUB connector
- RoHS standard
- Available Industrial Temp (-40°C to +85°C)

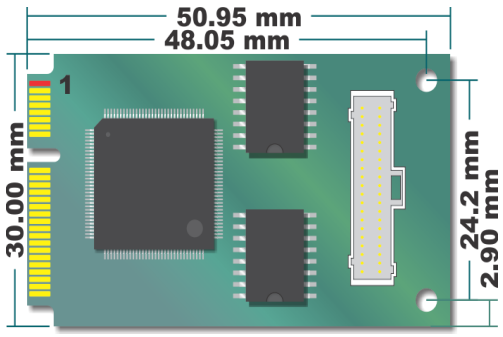
Functional Description

The mPCIe-DIO-24S is a type F1 PCI Express Mini Card (mPCIe) and optional cable assembly (DSub 37-pin Male connector) designed to be easily panel-mounted in any application environment. It uses the high speed PCI Express bus to transfer digital data to and from the card. The digital I/O is compatible with 8255 PPI chips making it easy to program. This also allows for simple and trouble-free migration from other ACCES PCI and PCI Express digital I/O cards, but also provides for advanced features enabled by the onboard FPGA logic.

The card provides three 8-bit I/O ports designated A, B and C. Port C can be further divided into two 4-bit nybbles. Each port can be programmed as inputs or outputs. Change of State (COS) detection and interrupt capabilities are designed to relieve software from polling routines that can consume valuable processing time. Each port can be programmed for detecting state changes on their lines, in which any changes of the enabled port's bits (low-to-high or high-to-low) will generate an IRQ. An ISR (interrupt service routine) then determines which bit changed state and clears the interrupt.

Special Order

Please contact ACCES with your precise requirement. Examples of special orders would be pull-down resistors, conformal coating, a TTL version with user supplied 5VDC VCCIO, custom software or product labelling, and more. We will work with you to provide *exactly* what is required.



Accessories

Available accessories include:	
CAB-mPCIe-DB37M	40-pin to DB37-pin Male cable
ADAP37, STA-37	37-pin Screw Terminal Accessories
mPCIe-HDW-KIT2	2mm mounting hardware
mPCIe-HDW-KIT2.5	2.5mm mounting hardware

Software

The card is supported for use in most operating systems and includes a free DOS, Linux , and Windows 2000/XP/2003/Vista/7/8/10 compatible software package. This package contains sample programs and source code in Visual Basic, Delphi, and Visual C++ for Windows. Also provided is a graphical setup program in Windows. Linux support includes installation files and basic samples for programming from user level via an open source kernel driver. Third party support includes a Windows standard DLL interface usable from the most popular application programs, and includes LabVIEW 8.5+ VIs. Embedded OS support includes Windows XPe, WES7, WES8, etc. Full register-level documentation of all features ensures easy compatibility in any application environment.

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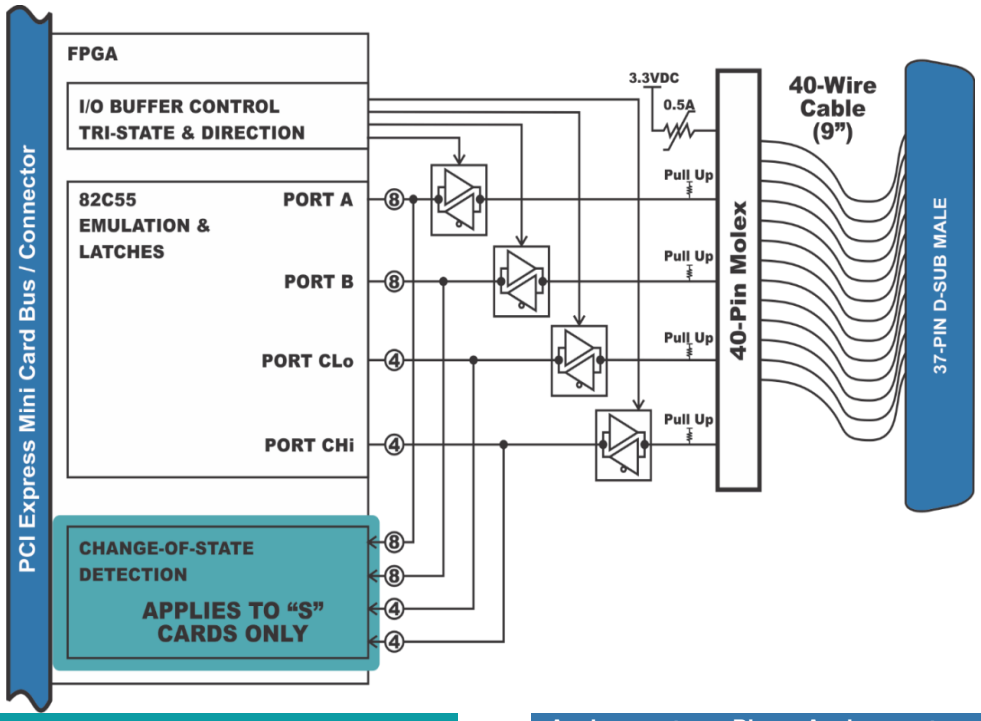


PC Interface

PCI Express Mini Card	Type F1 "Full Length" V1.2

Digital Input / Output Interface

Digital Bits		24
Compatibility		8255 Mode 0
Performance		1 µs per 32-bit transaction max ~3.5µs in Windows
Digital Inputs	Logic High	2.0V to VCCIO (3.3VDC, 5VDC tolerant)
	Logic Low	0V to 0.8V
Digital Outputs (Standard Version)	Logic High	2.0V (min) 24mA source
	Logic Low	0.55V (max) 24mA sink
	Power Output	+3.3 VDC via 0.5A polyfuse (resetting)
TTL w/user VCCIO	1.65V to 5.5V	At DB37M, via polyfuse
Digital Outputs (-TTL Option)	Logic High	3.8V (min) 32mA UVCCIO = 4.5V
	Logic Low	0.55V (max) 32mA UVCCIO = 4.5V

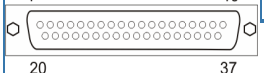
Environmental

Temperature	Operating	0° to 70°C (order "-T" for -40° to 85°C)
	Storage	-65° to 150°C
Humidity		5% to 95%, non-condensing
Power required		+3.3VDC @ 330mA (typical)

Physical

Weight		6.2 grams (+ 22.2g for the cable)
Size	Length	50.95mm (2.006")
	Width	30.00mm (1.181")
I/O connector	On-card	Molex 501190-4017 40-pin latching
	mating	Molex 501189-4010
	On cable	Male, D-Sub Miniature, 37-pin
	mating	Female, D-Sub Miniature, 37-pin

Assignment	Pin	Assignment	Pin
Fused VCCIO	20	Ground	1
Ground	21	No Connect	2
Port B 7	22	Port C 7 Hi	3
Port B 6	23	Port C 6 Hi	4
Port B 5	24	Port C 5 Hi	5
Port B 4	25	Port C 4 Hi	6
Port B 3	26	Port C 3 Lo	7
Port B 2	27	Port C 2 Lo	8
Port B 1	28	Port C 1 Lo	9
Port B 0	29	Port C 0 Lo	10
Port A 7	30	No Connect	11
Port A 6	31	No Connect	12
Port A 5	32	No Connect	13
Port A 4	33	No Connect	14
Port A 3	34	No Connect	15
Port A 2	35	Fused VCCIO	16
Port A 1	36	Fused VCCIO	17
Port A 0	37	Ground	18
		Ground	19



Pins 16 & 17 are connected to 20

Ordering Guide

mPCIe-DIO-24S	24 Digital I/O w/CoS IRQ PCI Express Mini Card
mPCIe-DIO-24	24 Digital I/O PCI Express Mini Card
Add –T to your model # for Industrial Temperature Option (-40° to 85°C)	
Add –TTL to your model # for TTL signaling w/user supplied VCCIO (+5V)	

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