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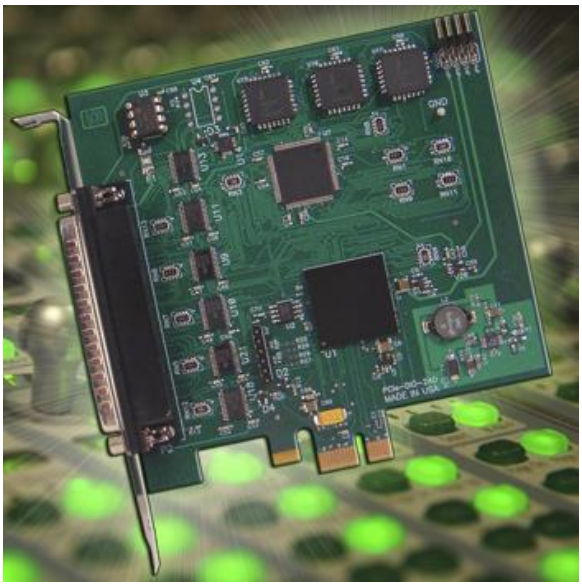
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PCIe-DIO-24DCS

Digital I/O with Counters and COS IRQ



FEATURES

- 24 high-current DIO lines
- Three optional 82C54 Counter/Timers
- IRQ generation from Port C bit 3, Counter A2 (“C” models) or Change of State (COS) Detection (“S” models)
- DIO lines buffered
- Four and eight bit ports independently selectable for inputs or outputs
- Jumper selectable 10k ohm Pull-up/Pull-down resistors on DIO lines
- Jumper selectable VCCIO (5V, 3.3V, 2.5V, 1.8V)
- VCCIO voltage available to the user via 0.5A resettable fuse

FACTORY OPTIONS

- Extended temperature operation (-40° to +85°C)

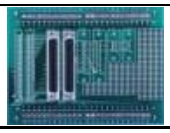
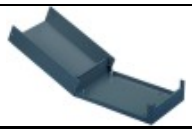
FUNCTIONAL DESCRIPTION

This product is a x1 lane PCIe DIO board available in four models ranging from basic DIO to advanced COS detection and Counter/Timer capabilities. The card emulates an 8255 compatible chip, providing 24 DIO lines. The DIO lines are grouped into three 8-bit ports: A, B, and C. Each 8-bit port is configured via software to function as either inputs or outputs. Port C can be further broken into two 4-bit nybbles via software and configured as either inputs or outputs.

Each DIO line is buffered and capable of up to 32mA source/sink. The VCCIO logic level is globally configured via jumper selection as 5V, 3.3V, 2.5V or 1.8V. Also, ports A, B, C low nybble, and C high nybble are individually jumper configurable as pull-up or pull-down through 10kΩ resistor networks.

The card is 6.6 inches in length and 4.2 inches seated height. I/O wiring connections for this board are via a male 37-pin D-sub connector. A ribbon cable can be used to connect this card to termination panels.

ACCESSORIES

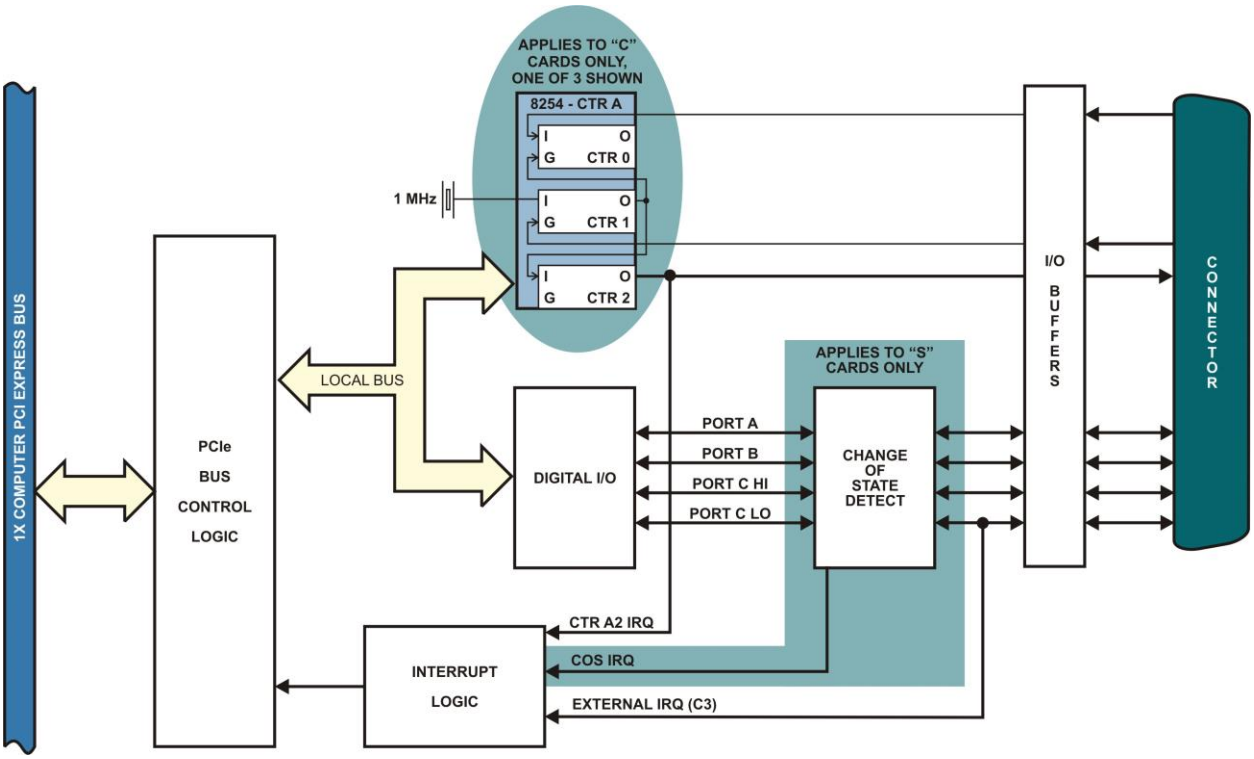
ADAP37	CAB37-XX	STA-37	T-BOX	STB-37	DIN-SNAP-6
DB37F screw terminal board plugs directly onto the card’s I/O connector	Ribbon Cable Assy, XX=length in inches	Screw terminal board mounted on standoffs with bread-board area	Metal enclosure with powder coated finish, use to mount STA-37 to panel	Screw terminal board, ships with standoffs but can also mount on SNAP-TRACK or DIN-SNAP	SNAP-TRACK for DIN-rail mounting one STB-37
					

SOFTWARE

The card is supported for use in most operating systems and includes a free DOS, Linux, and Windows 2000/XP/2003/Vista/7 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. Embedded OS support includes Windows XPe.

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BLOCK DIAGRAM

SPECIFICATIONS

Digital I/O

Lines	24; Ports A, B, and C
Type	Emulates 8255 compatible chips
Logic Level	VCCIO
Pull-up/down	10k ohm, jumper selectable

VCCIO

Logic Levels	5V	
Low Inputs	≤ 1.5V	≤ 2uA
High Inputs	≥ 3.5V	≤ 2uA
Low Outputs	≤ 0.55V	32mA
High Outputs	≥ 3.8V	32mA
Logic Levels	**3.3V**	
Low Inputs	≤ 0.8V	≤ 2uA
High Inputs	≥ 2.0V	≤ 2uA
Low Outputs	≤ 0.55V	24mA
High Outputs	≥ 2.4V	24mA
Logic Levels	**2.5V**	
Low Inputs	≤ 0.7V	≤ 2uA
High Inputs	≥ 1.7V	≤ 2uA
Low Outputs	≤ 0.3V	8mA
High Outputs	≥ 1.9V	8mA
Logic Levels	**1.8V**	
Low Inputs	≤ 0.63V	≤ 2uA
High Inputs	≥ 1.17V	≤ 2uA
Low Outputs	≤ 0.45V	4mA
High Outputs	≥ 1.2V	4mA

Counter / Timers

Number / Type	Three 82C54 programmable counters
Counter size	16-bit
Logic level	VCCIO
On-board clock	1MHz
Clock Pulse Width	High - 30ns (min) Low - 40ns (min)

Environmental

Operating Temperature	0° to 70°C, optional -40° to +85°C
Storage Temperature	-55° to +150°C
Humidity	5% to 95% RH, w/o condensation
Card Dimensions	Length - 6.6"; Height - 4.2" seated

ORDERING GUIDE

- PCIe-DIO-24D 24-line DIO Card
- PCIe-DIO-24DC 24 line DIO Card w/3 counters
- PCIe-DIO-24DS 24-line DIO Card w/COS IRQ
- PCIe-DIO-24DCS 24-line DIO w/3 Ctrs & COS IRQ

Factory Options

- Extended temperature operation (-40° to +85°C)

DB37M Connector Pin Assignments

Signal Name	Pin	Signal Name	Pin
Counter C2 Out	20	Ground	1
VCCIO		IRQ enable	2
Ground	21	PC7	3
PB7	22	PC6	4
PB6	23	PC5	5
PB5	24	PC4	6
PB4	25	PC3	7
PB3	26	PC2	8
PB2	27	PC1	9
PB1	28	PC0	10
PB0	29	Counter A0 In	11
PA7	30	Counter A1 Gate	12
PA6	31	Counter A2 Out	13
PA5	32	Counter B0 In	14
PA4	33	Counter B1 Gate	15
PA3	34	Counter B2 Out	16
PA2	35	Counter C0 In	17
PA1	36	Counter C1 Gate	18
PA0	37	Ground	19

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