



Introduction

The PEX-TMC12A provides twelve 16-bit timers/counters (four 82C54 chips x 3 timers/counters), 16 TTL digital input channels and 16 TTL digital output channels. The two onboard clocks (8 M/1.6 M and 0.8 M/80 K) are jumper selectable and provide a highresolution clock source for timers/counters. Counters/timers can be used for industrial and laboratory applications such as pulse/ event/switch-toggle counting, frequency readings, elapsed time measurement, pulse-width measurement, PWM (pulse-widthmodulated) output, and pulse (square wave) and rate generation, etc.

Pin Assignments

Features

- Supports PCI Express x 1
- 4 onboard 8254 timer/counter chips
- 12 independent 16-bit timers/counters
- 12 external clock inputs
- 12 external gate control inputs
- 12 timer/counter output channels
- 16-bit timer/counter can be cascaded to create 32/48-bit timer/counter
- Gate input can be either an external signal or the output of a previous timer/counter channel
- Four interrupt sources
- Two internal clock
- Supports Card ID (SMD Switch)
- 6 TTL D/I channels and 16 TTL D/O
- Supports DO Status Readback
- More flexible interrupt
- Hardware mechanism for the generation of two starting-clocks



Software

Sample Programs

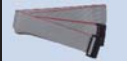
- ## Hardware Specifications

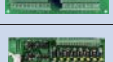
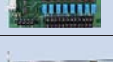
Digital Input	
Channels	16
Compatibility	5 V/TTL
Input Voltage	Logic 0: 0.8 V Max. Logic 1: 2.0 V Min.
Response Speed	500 kHz
Digital Output	
Channels	16
Compatibility	5 V/TTL
Output Voltage	Logic 0: 0.4 V Max. Logic 1: 2.4 V Min.
Output Capability	Sink: 24 mA @ 0.8 V Source: 15 mA @ 2.0 V
Response Speed	500 kHz
Timer/Counter	
Channels	12 (Independent x 12)
Resolution	16-bit
Input Frequency	10 MHz Max.
Reference Clock	Internal: 8 MHz
General	
Bus Type	PCI Express x 1
Card ID	Yes (4-bit)
Connectors	Female DB37 x 1 20-pin Box Header x 2
Power Consumption	500 mA @ +5 V
Operating Temperature	0°C to +60°C
Humidity	5 to 85% RH, Non-condensing

Ordering Information

PEX-TMC12A CR	PCI Express, 12-ch Timer/Counter Board (RoHS) Includes one CA-4002 D-Sub connector.
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Accessories

	CA-2002 CR	20-pin fl at cable, 20 cm x 2 (RoHS)
	CA-2010 CR	20-pin fl at cable, 1 M (RoHS)
	CA-2020 CR	20-pin fl at cable, 2 M (RoHS)
	CA-3710 CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°)) (RoHS)
	CA-3710D CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°)) (RoHS)
	CA-3715DM-H CR	DB-37 Male-Male Cable, 1.5 M, 180° (RoHS)
	CA-3730DM-H CR	DB-37 Male-Male Cable, 3.0 M, 180° (RoHS)
	CA-3750DM CR	DB-37 Male-Male Cable, 5.0 M, 180° (RoHS)
	CA-3750DM-H CR	DB-37 Male-Male Cable, 5.0 M, 180° (RoHS)

	CA-4002 CR	37-pin Male D-sub connector with plastic cover (RoHS)
	DB-37 CR	Directly connect signal to D-sub 37-pin connector (RoHS)
	DN-37 CR	DIN Rail Mounting 37-pin Connector (RoHS)
	DN-20 CR	Two 20-pin header DIN-rail terminal board (RoHS)
	DN-20/N CR	DN-20 without DIN-Rail mount (RoHS)
	DB-16P CR	Isolated Digital Input Daughter Board (RoHS)
	DB-16R CR	Relay Output Daughter Board (RoHS)
	ADP-20/PCI CR	20-pin extender (RoHS)

