

# PCI-TMC12A

PCI Bus, 12-channel Timer/Counter Board with Digital I/O



## Features

- PCI (5 V) Interface
- 4 Onboard 8254 Timer/Counter Chips
- 12 Independent 16-bit Timers/Counters
- 12 External Clock Input Channels
- 12 Timer/Counter Output Channels
- 4 Interrupt Sources
- 16-bit Timer/Counter can be cascaded to create a 32/48-bit Timer/Counter
- 16-channel, 5 V/TTL Digital Input and 16-channel, 5 V/TTL Digital Output
- Gate Input can be sourced from External or Previous Timer/Counter Output
- 2 Internal Clock Sources
- More Flexible Interrupt Mechanism
- Hardware Mechanism to generate two Starting Clocks

## Introduction

The PCI-TMC12A is a general purpose timer/counter card that supports the 5 V PCI bus and "Plug & Play" functionality to automatically obtain I/O resources from the BIOS. This card contains 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 high-resolution 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-width-modulated) output, and pulse (square wave) and rate generation, etc.

## Software

### Drivers

- 32/64-bit Windows XP/2003/2008/Vista/7/8
- Linux

### Sample Programs

- DOS Lib and TC Demo
- LabVIEW Toolkit
- VB/VC/Delphi/BCB/MATLAB Demo
- VB.NET/C#.NET/VC.NET Demo

## 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	2.0 MHz (Typical)
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	2.0 MHz (Typical)
Timer/Counter	
Channels	12 (Independent x 12)
Resolution	16-bit
Input Frequency	10 MHz Max.
Reference Clock	Internal: 8 MHz
General	
Bus Type	5 V PCI, 32-bit, 33 MHz
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

## Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
ECLK1	01	20	EXTG1	DI 0	01
COUT1	02	21	ECLK2	DI 2	03
EXTG2	03	22	COUT2	DI 4	05
ECLK3	04	23	EXTG3	DI 6	07
COUT3	05	24	ECLK4	DI 8	09
EXTG4	06	25	COUT4	DI 10	11
ECLK5	07	26	EXTG5	DI 12	13
COUT5	08	27	ECLK6	DI 14	15
EXTG6	09	28	COUT6	GND	17
ECLK7	10	29	EXTG7	+5 V	19
COUT7	11	30	ECLK8		
EXTG8	12	31	COUT8		
ECLK9	13	32	EXTG9		
COUT9	14	33	ECLK10		
EXTG10	15	34	COUT10		
ECLK11	16	35	EXTG11		
COUT11	17	36	ECLK12		
EXTG12	18	37	COUT12		
GND	19				

## Ordering Information

PCI-TMC12A	PCI Bus, 12-channel Timer/Counter Board. Includes one CA-4002 D-sub Connector.
PCI-TMC12A CR	PCI Bus, 12-channel Timer/Counter Board (RoHS). Includes one CA-4002 D-sub Connector.