

PCI-FC16U

Universal PCI, 16-channel Counter/Frequency with 32-channel Programmable Digital I/O Board

Introduction

PCI-FC16U is a 32-bit hardware-type high-speed Counter/Frequency card that supports both the 3.3 V and the 5 V Universal PCI bus. The card provides 16 channels that can be individually configured for either frequency measurement or up-counter applications, and can support high-frequency signals up to 250 kHz. The PCI-FC16U also includes 32 programmable Digital I/O channels.

The PCI-FC16U card includes an onboard Card ID switch that enables the board to be recognized via software if two or more boards are installed in the same computer. The pull-high/pull-low resistors allow the DI status to be predefined as either high or low instead of remaining floating if the DI channels are disconnected or interrupted.

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
C0+	01	C0-	PB 0	01	PB 1
C1+	02	C1-	PB 2	03	PB 3
C2+	03	C2-	PB 4	05	PB 5
C3+	04	C3-	PB 6	07	PB 7
C4+	05	C4-	PB 8	09	PB 9
C5+	06	C5-	PB 10	11	PB 11
C6+	07	C6-	PB 12	13	PB 13
C7+	08	C7-	PB 14	15	PB 15
N.C.	09	N.C.	GND	17	GND
C8+	10	N.C.	+5 V	19	+12 V
C9+	11	C8-	CON1		
C10+	12	C9-	Pin Assignment	Terminal No.	Pin Assignment
C11+	13	C10-	PA 0	01	PA 1
C12+	14	C11-	PA 2	03	PA 3
C13+	15	C12-	PA 4	05	PA 5
C14+	16	C13-	PA 6	07	PA 7
C15+	17	C14-	PA 8	09	PA 9
N.C.	18	C15-	PA 10	10	PA 11
N.C.	19	N.C.	PA 12	12	PA 13
			PA 14	14	PA 15
			GND	16	GND
			+5 V	18	+12 V
			CON2		

Features

- Universal PCI (3.3 V/5 V) Interface
- 32-channel Programmable Digital I/O
- 16-channel Up Counter or Frequency Measurement (Pulse Width = 2 μ s Min.)
- Digital Filter: 1 to 32767 (μ s)
- Pull-high and Pull-low Resistors for DI Channels
- Supports Card ID (SMD Switch)



Software

Drivers

- 32/64-bit Windows 10/11

Sample Programs

- VB/VC/Delphi/VB.NET/C#.NET/VC.NET/LabVIEW/Python/MATLAB










Hardware Specifications

Counter/Frequency		
Counter/Frequency	16-channel Up Counter 16-channel Frequency	
Resolution	32-bit	
Digital Noise Filter	1~32767 μ s	
Min. Pulse Width	2 μ s (250 kHz Max.)	
Isolated Input Level	ON Voltage	+4.5 ~ +30 VDC
	OFF Voltage	+1 VDC Max.
Isolation Voltage	2500 VDC	
ESD Protection	2 KV (Contact for each Channel)	
Programmable I/O		
Channels	32	
Digital I/O		
Input Voltage	Logic 0	0.8 V (Max.)
	Logic 1	2.0 V (Min.)
Output Voltage	Logic 0	0.4 V (Max.)
	Logic 1	2.4 V (Min.)
Output Capability	Sink	2.4 mA @ 0.8 V
	Source	0.8 mA @ 2.0 V
General		
Bus Type	3.3 V/5 V Universal PCI, 32-bit, 33 MHz	
Card ID	Yes (4-bit)	
Connectors	Female DB37 x 1 20-pin Box Header x 2	
Power Consumption	700 mA @ +5 V	
Operating Temperature	0°C to +60°C	
Humidity	5 to 85% RH, Non-condensing	

Ordering Information

PCI-FC16U CR	Universal PCI, 16-channel Counter/Frequency with 32-channel Programmable Digital I/O (RoHS). Includes one CA-4002 D-sub Connector.
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Accessories

	CA-2002 CR	20-pin flat cable, 20 cm x 2 (RoHS)
	CA-2010 CR	20-pin flat cable, 1 M (RoHS)
	CA-2020 CR	20-pin flat 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-4002 CR	37-pin Male D-sub connector with plastic cover (RoHS)
	DN-37 CR	DIN Rail Mounting 37-pin Connector (RoHS)
	DN-20 CR	Two 20-pin header DIN-rail terminal board (RoHS)
	DB-16P CR	Isolated Digital Input Daughter Board (RoHS)
	DB-16R CR	Relay Output Daughter Board (RoHS)

