Multifunction counter board CPCI-1710, isolated







also for **PCI** See page 34

Function selected through software:

Incremental counter see page 36

SSI Synchronous Serial Interface see page 36

Chronos see page 37

Counter/Timer

see page 38

see page 39

Pulse counter see page 40

PWM see page 40

ETM

see page 41

Digital I/O see page 41







The board CPCI-1710 is a fast multifunction and multichannel counter board for the CompactPCI bus. The strengths of this board are its wide range of applications and high precision and reliability for though industrial applications. With this board you can realise many different applications on the same hardware base. The board is supplied with a pool of functions which provides the user with maximum efficiency yet minimum space and parts requirement. The functions are individually configured for each channel through the supplied sofware. The flexible programming facilities on this board allow many different user applications to be quickly and easily developed or reconfigured as further requirements arise.

Thanks to the FPGA board structure, further counting applications can be realised through software adaptation. Contact us!

Features

- Can be inserted in PXI systems, with restricted functionalities
- 32-bit data access
- Counter component with 32-bit counting depth and 5 MHz counting frequency
- Signals in TTL or RS422 mode,
- 24 V signals optional
- Four onboard function modules
- Programmable functions

Functions (detailled description on page 42 and following)

- Incremental counter for the acquisition of incremental encoders (90° phase-shifted signals)
- SSI synchronous serial interface. The SSI function is an interface for systems which allow an absolute position information via serial data transfer.
- Counter/timer (82x54)
- Pulse acquisition
- Frequency measurement
- Pulse width measurement
- Period duration measurement
- Velocity measurement
- Edge time measurement (ETM)
- PWM (Pulse Width Modulation)
- Digital I/OCustomised functions

Available channels for the 4 function modules

- 20 isolated channels for digital inputs
- 8 isolated channels, programmable either as digital input or output

CPCI-1710

Available functions:

incremental encoder, SSI synchronous serial interface, counter/timer, pulse acquisition, measurement of frequency, pulse width, period duration and velocity measurement, PWM, digital inputs and outputs, ...

Function selection through software

Optical isolation, MTBF: 54,287 hours at 45 °C

TTL, RS422, 24 V

Tailored functions

• 4 isolated digital power outputs

Available lines for each function module

- 8 lines are available for each function module, • Input lines:
- 2 x TTL and R\$422 (CPCI-1710), or 2 x 24 V (option) - 3 x 24 V, optional 5 V for channels E, F, G
- Output lines:
- 1 x 24 V, optional 5 V (power output)
- 2 channels, programmable either as digital input or output, isolated: 2 x TTL, RS422

Safety features

- Creeping distance 3.2 mm on the printed circuit
- Optical isolation 1000 V
- Noise neutralization of the PC supply

EMC tested according to 89/336/EEC

• IEC 61326: electrical equipment for measurement, control and laboratory use

Applications

- Event counting
- Position acquisition
- Axis control
- Batch counting,...

Software drivers

A CD-ROM with the following software and programming examples is supplied with the board.

Standard drivers for:

Windows XP/2000/NT/98/95, Windows 3.11, MS-DOS, Real-time driver for Windows XP/2000/NT/98/95 on request: RTX-Treiber

Samples for the following compilers:

Depending on the function, the samples are not always available for each compiler. See a detailled list on the web. Microsoft VC++ 5.0 • Microsoft C 6.0

Borland C++ 5.01 • Borland C 3.1 Visual Basic 1.0; 4.0; 5.0 • Delphi 1 • Delphi 4 Turbo Pascal 7.0

Drivers for the following application software : LabVIEW 5.01 (according to the function) On request: DasyLab 6/7 • Diadem 6/7

Current driver list on the web: www.addi-data.com The software functions can be adapted to your application on request. The board can also be implemented for other application software. Contact us!

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CPCI-1710

	Specifications			•••••
0		ON resistance of the output		
Counter components		(RDS ON-resistance):	0.4 Ω max.	
	Counting depth: 32-bit,	Overtemperature:	170°C (all outp	outs switch off)
	Counting frequency up to 5 MHz	Protection against overtempere	iture (24V outpu	its)
Free programming of the	functions	Activated:	from approx. 1	50-170°C (chip temperature)
rice programming of me	Acquisition of 32 hit/16 hit incremental encoders	Deactivated (automatically):	from approx. 1	25-140°C (chip temperature)
	Acquisition of absolute value encoders/SSI	Outputs (at overtemperature):	All outputs swi	tch off
	Counter/timer	Undervoltage (effective at Vext	< 5 V):	
	Chronos/TOP for frequency measurement	Outputs (at undervoltage):	All outputs swit	tch off
	Pulse acquisition	Switching characteristics of the	outputs	
	Chronos for pulse width measurement	(Vext = 24 V, 1=25°C, Onffic loc	(Am 000 in	
	Chronos for period duration measurement	Switch OFF time:	200 µs	
	TOR for velocity measurement	Swiich OFF lime.	15 µs	
	Digital I/O, 24 V, TTL, RS422	Output type:		
	PWM	Number of outputs:	1	
	ETM	Number of outputs.		
	Customised functions	Switching characteristics of the		
		(T=25°C TTL load).	ouipuis	
Signals		Switch ON time:	0.06.05	
	Digital I/O signals	Switch OFF time:	0.00 µs	
	TTL or RS422	Features for the ontion 24 V	0.02 μ3	
Investe			24 V input cha	nnels (channels A to G)
Inputs			This board vers	sion is especially used for
Input channels:	20		connecting 24	V encoders
Differential input channels			Only 24 V sign	als can be connected to the
Differential inputs, 5 V	8/16 (8 can be used as input or output)		input channels	
Nominal voltage:	5 VDC	Nominal voltage:	24 VDC / 10 m	A
Common mode range:	+12/-7 V	Max. input frequency:	1 MHz (at nom	iinal voltage)
Max. ameremiai voltage.	±12 V	Logic input level:	Unominal:	24 V
Input sensitivity.	200 mV	(Standard)	UH max.:	30 V
Input impedance:			UH min.:	17 V
Terminal register:	12 KS2		UL max.:	15 V
Signal dolay:	100 s2 serial will 10 Hr (iyp.)		UL min.:	0 V
Max input frequency:	5 MHz (at pominal voltage)	Catoby		
Mass-related inputs 24 V (char		Salely	10001/	
Number of inputs:	12	Optical isolation:	1000 V	
Nominal voltage:	24 VDC	Noise immunity		
Input current	21100	Test level:	- FSD [.] 4 kV	- Fields: 10 V/m
at nominal voltage:	11 mA		- Burst: 4 kV	- Cond. radio interferences: 10 V
Logical input level:	Unominal: 24 V			
	UH max.: 30 V	Physical and environment	ntal condition	าร
	UH min.: 17 V	Dimensions:	3U/4TE	
	UL max.: 15 V	System bus:	CompactPCI 3	2-bit 5 V acc. to spec. 2.1 (PCISIG)
	UL min.: 0 V	Place required:	1 slot	
Signal delay:	120 ns (at nominal voltage)	Operating voltage:	+5 V, ± 5 % from	m PC
Maximal input frequency:	2.5 MHz (at nominal voltage)		+24 V ext. / 10	mA
Outpute		Current consumption:	APCI-1710: 600	0 mA typ. ± 10 %
Naminaluation			APCI-1710-24V	/: 450 mA typ. ± 10 %
Nominal voltage:		Front connector:	50-pin SUB-D n	nale connector
Maximum output frequency:	5 MHZ (diff. outputs)	Temperature range:	0 to 60 °C (wit	h forced cooling)
Digital outputs 24 V:	8 (ii mey dre noi used as ain. inpuis)			
Output type:	High Side (logd at ground)	ADDI-	DATA conr	nection
Number of outpute:			F	
Nominal voltago:				
Panae of the voltage supply:	10 V to 36 VDC (through 24V ext. nin)			PX 8000
Max current		CPCI-1710	SUB-D female	SUB-D male
for 4 output channels	2 A typ (limited to the voltage supply)	(option URS-1710)	or connector	connector
Max output current	500 mA			
Short-circuit current/	0001111	CPC-1710/	1711	
output at 24 V. Rigged $< 0.1 \Omega$	1.5 A max. (output switches off)		\$137	
1000				
ADDICOUNT CPCI-17	/10		ORDERI	NG INFORMATION

Isolated multifunction counter board with 4 function modules. Incl. technical description and software drivers.

ADDICOUNT CPCI-1711:

Isolated multifunction counter board with 2 function modules. Incl. technical description and software drivers.

URS-1710-6U:	6U bracket for mounting in a 6U housing
Option 24 V:	24 V for differential input signals A to G
	(A and B for counter, I (index) and UAS (error) signals).
Option 5 V	5 V inputs signals instead of 24 V (channels E, F, G)

Zubehör

ST370-16: Shielded round cable, 2 m PX 8000:

Terminal board with screw terminals for DIN rail