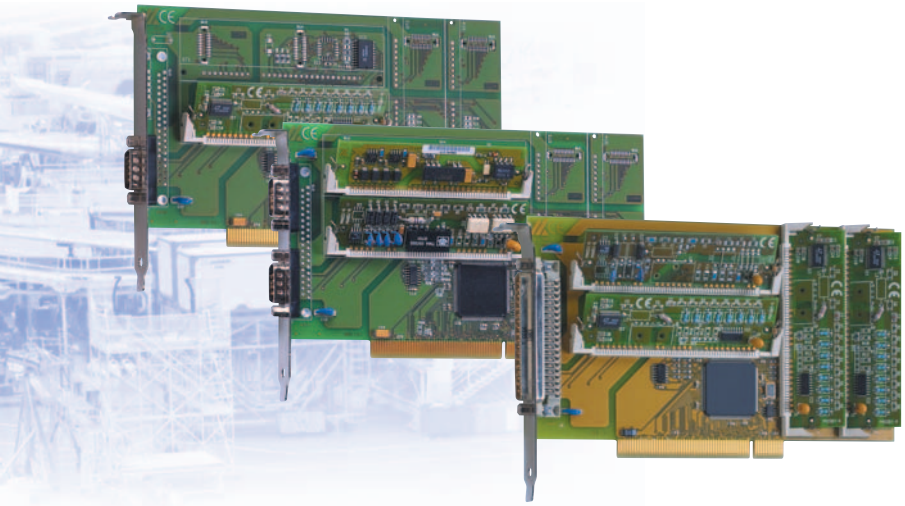
1-port, 2-port, 4-port serial interface, modular, with/without optical isolation



APCI-7300 - **1-port serial interface**
APCI-7420 - **2-port serial interface**
APCI-7500 - **4-port serial interface**

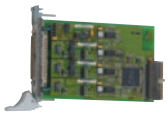
RS232, RS422, RS485, 20 mA Current Loop

Free mode configuration for each port through SI modules

With/without optical isolation

128-byte FIFO buffer

16C950 UART downward compatible



APCI-7500 as compatible version for the *CompactPCI™*-Bus

The APCI-7xxx series is configured by inserting SI modules which the board identifies automatically. The APCI-7300 is a 1-port serial interface, the APCI-7420 a 2-port, and the APCI-7500 a 4-port serial interface for the PCI bus.
The serial interfaces can be configured through modules in the following modes: RS232, RS422, RS485 (with or without optical isolation) and current loop (with optical isolation).
The modules with optical isolation allow a protection of up to 1000 V for the use in noisy environments where earth loops can occur.
The I/O lines are protected against short-circuits, fast transients, electrostatic discharge and high-frequency EMI. The interface is supported through a 128-byte FIFO buffer for sending and receiving data and guarantees reliable operation at high transfer rates.

Features

- Asynchronous communication adapter
- Modular structure through SI modules
  1 socket for 1-port serial interface (APCI-7300)
  2 sockets for 2-port serial interface (APCI-7420)
  4 sockets for 4-port serial interface (APCI-7500)
- Can be configured as RS232, RS422, RS485 with/without optical isolation, 20 mA current loop (active, passive), with optical isolation through separate SI modules
- Automatic addressing through BIOS
- Automatic module identification
- 128-byte FIFO buffer for sending and receiving buffers
- Programmable transfer rate
- 5, 6, 7 or 8-bit character
- 1, 1½ or 2 stop bits
- Parity: even, odd or none
- Automatic transmitter control for RS485 and transmitter control through FIFO level
- Common interrupt (APCI-7420 + APCI-7500)

Safety features

- SI modules available with optical isolation to 1000 V
- Creeping distance IEC 61010-1 (VDE411-1)
- Protection against fast transients (Burst)
- Short-circuit protection for RS422 and RS485
- Detection of false start bits
- Internal diagnostic possibility, break, parity, overrun and framing error

EMC tested according to 89/336/EEC

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

Applications

- Data acquisition
- Industrial process control
- Industrial serial communication
- Multi-user systems
- SPS-interface
- Modem and printer interface
- Multidrop applications
- Weighting devices
- ...

Software drivers

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

Standard drivers for:
Windows XP/2000/NT/98/95/Embedded NT:
Standard COM driver

Samples for the following compilers:
Microsoft VC++ 5.0
Visual Basic 5.0
Delphi 4

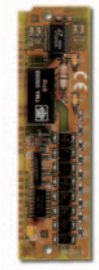
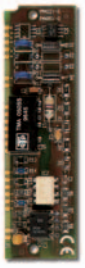
On request:
Drivers for Linux Kernel Version 2.4.2
MS-DOS
Windows 3.11
Embedded NT

Current driver list on the web: www.addi-data.com

www.addi-data.com
Sales: +49(0)7223/9493-120
Fax: +49(0)7223/9493-92

1-port, 2-port, 4-port serial interface, modular, with/without optical isolation

SI MODULES

Operating mode	RS232		RS422		RS485		20 mA CL
The SI modules can be freely selected for each port. They are not included with the board and have to be ordered separately.							
Modules	**PM232-G**	**PM232**	**PM422-G**	**PM422**	**PM485-G**	**PM485**	**PMTTY**
Optical isolation 1000 V	yes		yes		yes		yes
Creeping distance 3.2 mm	yes		yes		yes		yes
Short-circuit protection			yes	yes	yes	yes	
ESD protection	yes	yes					
Burst protection			yes	yes	yes	yes	yes
Duplex	Full	Full	Full/Half	Full/Half	Half	Half	Full
Max. baud rate	19.2 kBaud to 1MBaud on request	115.2 kBaud to 1MBaud on request	115.2 kBaud to 1MBaud on request	115.2 kBaud to 1MBaud on request	115.2 kBaud to 1MBaud on request	115.2 kBaud to 1MBaud on request	19.2 kBaud
Modem control signals	through software	through software	Automatic	Automatic	Automatic	Automatic	Automatic
Automatic transmitter control					yes	yes	
Current consumption	48 mA	21 mA	42 mA	5 mA	54 mA	5 mA	51 mA

APCI-7300 / APCI-7420 / APCI-7500

Specifications

Serial interface - 1-port, 2-port or 4-port

Modes:	RS232, RS422, RS485, 20 mA Current Loop (active, passive) with or without optical isolation through separate SI modules
Transmission mode:	Asynchronous, ful or half duplex (SI modules)
Addressing:	Automatic through BIOS
Memory:	128-byte FIFO buffer for transmitter and receiver
Transfer rate:	programmable up to 115.2 kBaud Baud rate up to 1 MBaud on request
Protocol:	5, 6,7 or 8-bit character 1, 1½ or 2 stop bits
Parity:	even, odd, none, mark, space
Interrupt lines:	Automatic configuration through BIOS

Safety features

Optical isolation:	1000 V (SI modules)

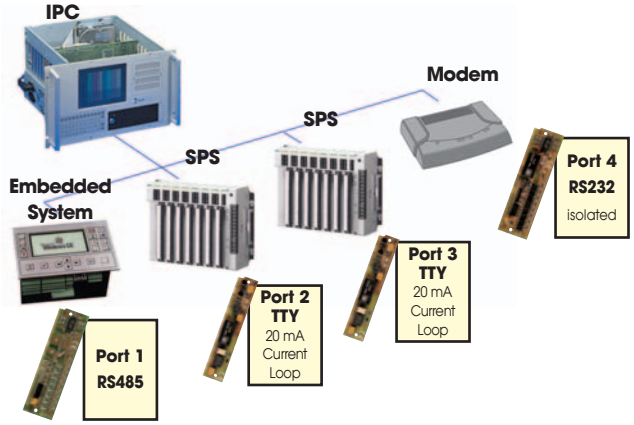
Noise immunity

Test level:	- ESD: 4 kV - Fields: 10 V/m - Burst: 4 kV - Conducted radio interferences: 10 V

Physical and environmental conditions

Dimensions:	175 x 99 mm
System bus:	PCI 32-bit 5 V acc. to specification 2.2 (PCISIG)
Place required:	1 PCI slot
Operating voltage:	+5 V, ± 5 % from the PC
Current consumption:	320 mA typ.
Front connector:	9-pin SUB-D male connector (APCI-7300) 2x9-pin SUB-D male connector (APCI-7420) 37-pin SUB-D male connector (APCI-7500)
Temperature range:	0 to 60 °C (with forced cooling)

Application example for APCI-7500



connection cable for APCI-7500

37-pin SUB-D female connector

4 x 9-pin SUB-D male connector (ST075)
or
4 x 25-pin SUB-D male connector (ST074)

ORDERING INFORMATION

ADDICOM APCI-7300 / APCI-7420 / APCI-7500

APCI-7300: 1-port **APCI-7420:** 2-port **APCI-7500:** 4-port serial interface. Incl. technical description and software drivers.

SI modules: Please order the modules separately!

PM232-G: RS232 mode with optical isolation
PM232: RS232 mode
PM422-G: RS422 mode with optical isolation
PM422: RS422 mode
PM485-G: RS485 mode with optical isolation
PM485: RS485 mode

PMTTY: 20 mA Current Loop mode (active, passive) with isolation
Option: Quartz: <1 MBaud transfer rate for RS232, RS422, RS485, PMTTY

Connection for APCI-7500

ST075: Shielded round cable, 37-pin to 4 x 9-pin
ST074: Shielded round cable, 37-pin to 4 x 25-pin

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