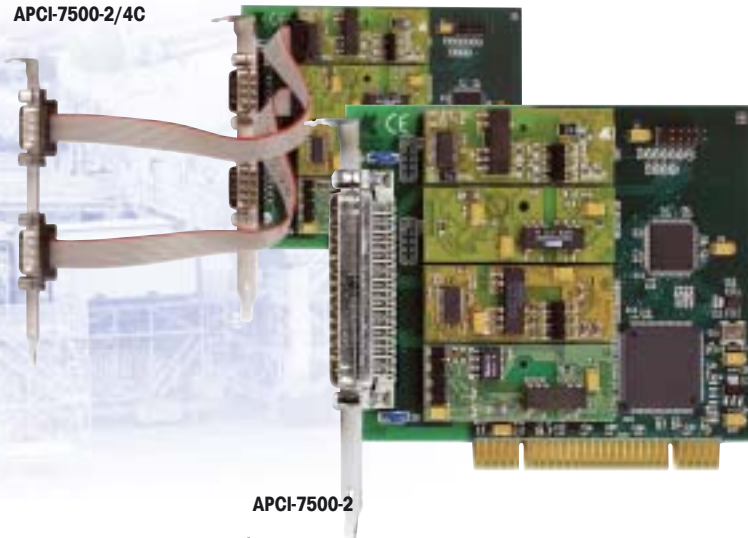


# 1-port, 2-port, 4-port serial interface, modular, with/without optical isolation, 3.3 V



APCI-7500-2/4C



APCI-7500-2

The APCI-7xxx series is configured by inserting MX modules which the board identifies automatically. The APCI-7300-2 is a single-port serial interface, the APCI-7420-2 a 2-port, and the APCI-7500-2 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 MX 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
- PCI bus – 3.3 V
- Modular structure through MX modules
  - 1 socket for 1-port serial interface (APCI-7300-2)
  - 2 sockets for 2-port serial interface (APCI-7420-2)
  - 4 sockets for 4-port serial interface (APCI-7500-2 and APCI-7500-2/4C)
- Can be configured as RS232, RS422, RS485 with/without optical isolation, 20 mA current loop (active, passive), with optical isolation through separate MX modules
- Automatic addressing through BIOS
- Automatic module identification
- 128-byte FIFO buffer for sending and receiving data
- 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-7420-2 + APCI-7500-2)

## Safety features

- MX 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

**APCI-7300-2 - 1-port serial interface**

**APCI-7420-2 - 2-port serial interface**

**APCI-7500-2 - 4-port serial interface**

**RS232, RS422, RS485, 20 mA Current Loop**

**Free mode configuration for each port through MX modules**

**With/without optical isolation**

**128-byte FIFO buffer for each interface**

**16C950 UART downward compatible**

**PCI 32-Bit, for PCI 3.3 V**

## 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 control
- Multidrop applications
- Weighing 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:

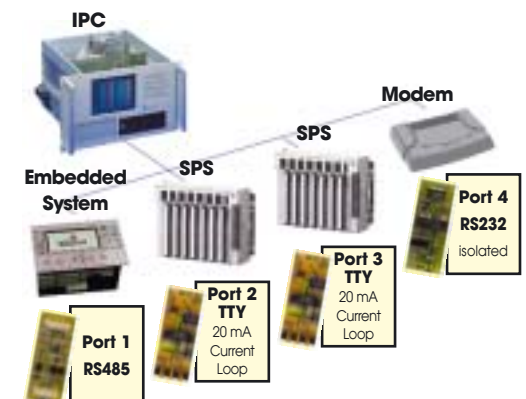
Microsoft VC++ 5.0  
Visual Basic 5.0  
Delphi 4

### On request:

Drivers for Linux Kernel Version 2.4.2  
MS-DOS  
RTX

Current driver list on the web: [www.addi-data.com](http://www.addi-data.com)








## Application example for APCI-7500-2/4C



# 1-port, 2-port, 4-port serial interface, modular, with/without optical isolation, 3.3 V



## MX-MODULES

Operating mode	RS232		RS422		RS485		20 mA CL
The MX modules can be freely selected for each port. They are not included with the board and have to be ordered separately							
<b>Module</b>	<b>MX232-G</b>	<b>MX232</b>	<b>MX422-G</b>	<b>MX422</b>	<b>MX485-G</b>	<b>MX485</b>	<b>MXTTY</b>
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	yes		yes		
Burst protection	yes		yes	yes	yes	yes	yes
Duplex	Full	Full	Full/Half	Full/Half	Half	Half	Full
Max. Baud rate	115.2 kBaud 1 MBaud opt.	115.2 kBaud 1 MBaud opt.	115.2 kBaud 1 MBaud opt.	115.2 kBaud 1 MBaud opt.	115.2 kBaud, 1 MBaud opt.	115.2 kBaud, 1 MBaud opt.	19.2 kBaud
Modem control signals	through software	through software					
Autom. transmitter control					yes	yes	
Current consumption	86 mA	10 mA	46 mA	10 mA	58 mA	10 mA	75 mA

## APCI-7300-2, APCI-7420-2, APCI-7500-2/4C, APCI-7500-2

### Specifications

Serial interface – 1-port, 2-port or 4-port	
Mode:	RS232, RS422, RS485, 20 mA Current Loop (active, passive) with or without optical isolation through separate MX modules
Transmission mode:	Asynchronous, full or half duplex (MX 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 (MX 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:	151 x 99 mm
System bus:	PCI 32-bit, 3.3 V acc. to spec. 2.2 (PCISIG)
Place required:	1 PCI slot + 1 slot opening for the APCI-7500-2/4C
Operating voltage:	+5 V, ± 5 % from the PC
Current consumption:	320 mA typ.
Front connector:	9-pin SUB-D male connector (APCI-7300-2) 2x9-pin SUB-D male connector (APCI-7420-2) 4x9-pin SUB-D male connector (APCI-7500-2/4C) with separate bracket 37-pin SUB-D male connector (APCI-7500-2)
Temperature range:	0 to 60 °C (with forced cooling)

### connection cable for APCI-7500-2



## ADDICOM APCI-7300-2, APCI-7420-2, APCI-7500-2/4C, APCI-7500-2

**APCI-7300-2:** 1-port serial; **APCI-7420-2:** 2-port serial;  
**APCI-7500-2/4C:** 4-port serial. 4 x 9-pin SUB-D male connector (incl. ribbon cable)  
**APCI-7500-2:** 4-port serial, 37-pin SUB-D male connector  
 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

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

### Connection for APCI-7500-2

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

## ORDERING INFORMATION

[www.addi-data.com](http://www.addi-data.com)

Sales: +49(0)7223/9493-120  
 Fax: +49(0)7223/9493-92