1 to 8-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules
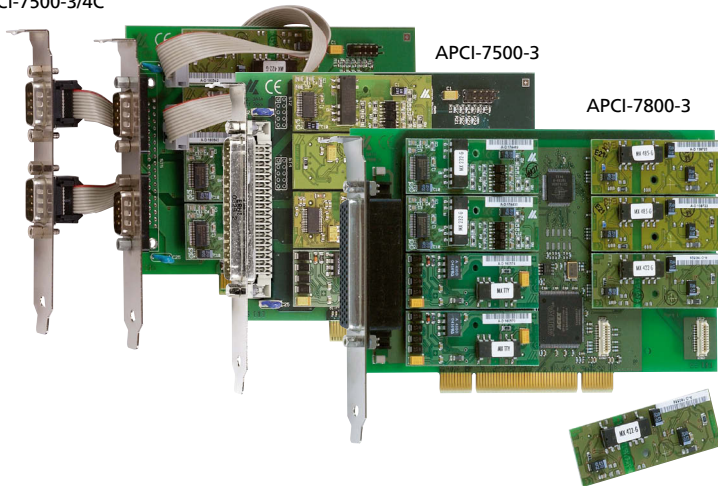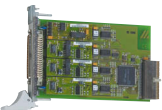
APCI-7500-3/4C

APCI-7500-3

APCI-7800-3

APCI-7300-3 – 1-port serial interface
APCI-7420-3 – 2-port serial interface
APCI-7500-3 – 4-port serial interface
APCI-7800-3 – 8-port serial interface

RS232, RS422, RS485, 20 mA Current Loop

Free mode configuration for each port through MX modules

With/without optical isolation 1000 V

128-byte FIFO buffer for each port

16C950 UART downward compatible

PCI 3.3 V or 5 V

RoHS 2002/95/EC

PCI 32-bit

Also for
PCI EXPRESS®
see APCIe-7xxx, page 154

Also for *CompactPCI™*
See CPCI-7500, page 254

Windows
64/32-bit drivers

The APCI-7xxx-3 communication boards are configured by inserting MX modules which the board identifies automatically. The 1- to 8-port serial interfaces APCI-7xxx-3 can be used as universal PCI boards in 3.3 V or in 5 V systems, and in PCI or PCI-X systems. The serial interfaces can be configured through modules in the following modes: RS232, RS422, RS485 (with or without optical isolation) and 20 mA current loop (with optical isolation).
The MX modules with optical isolation allow a protection 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 serial interfaces
- PCI 3.3 V or 5 V
- Modular mounting through MX modules
  1 socket for 1-port serial interface (APCI-7300-3)
  2 sockets for 2-port serial interface (APCI-7420-3)
  4 sockets for 4-port serial interface
  (APCI-7500-3 and APCI-7500-3/4C)
  8 sockets for 8-port serial interface (APCI-7800-3)
- 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

Safety features

- MX modules available with optical isolation 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

Applications

- Data acquisition • Industrial process control
- Direct connection to sensors
- Multi-user systems
- PLC interface
- Multidrop applications
- Weighting devices, modem and printer control, etc.

Software drivers

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

Standard drivers for:
- Linux
- 32-bit drivers for Windows 8 / 7 / Vista / XP / 2000
- Signed 64-bit drivers for Windows 8 / 7 / XP
- Real-time use with Linux and Windows on request

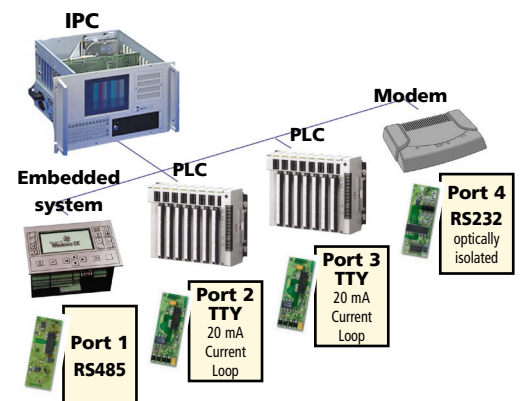Drivers and samples for the following compilers and software packages:
- Microsoft VC++
- Visual Basic • Delphi
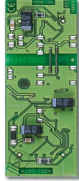
On request:
Further operating systems, compilers and samples.

Driver download: www.addi-data.com, download menu

Application example for APCI-7500-3

IPC

Modem

PLC

PLC

Embedded system

Port 4 RS232 optically isolated

Port 3 TTY 20 mA Current Loop

Port 2 TTY 20 mA Current Loop

Port 1 RS485

Phone: +49 7229 1847-0   info@addi-data.com
Fax: +49 7229 1847-222   www.addi-data.com

ADDI-DATA®
SPIRIT OF EXCELLENCE

MX modules

Operating mode	RS232		RS422		RS485		20 mA CL
	MX232-G	MX232	MX422-G	MX422	MX485-G	MX485	MXTTY
Optical isolation 1000 V	✓		✓		✓		✓
Creeping distance 3.2 mm	✓		✓		✓		✓
Short-circuit protection			✓	✓	✓	✓	
ESD protection	✓	✓	✓		✓		
Burst protection	✓	✓	✓	✓	✓	✓	✓
Duplex	Full	Full	Full	Full	Half	Half	Full
Max. Baud rate	1MBaud	1MBaud	1MBaud	1MBaud	1MBaud	1MBaud	19.2 kBaud
Modem control signals	✓	✓	Optional RTS/CTS (MX-422-PEP)				
Autom. transmitter control					✓	✓	
Current consumption	16 mA	1 mA	15 mA	5 mA	15 mA	5 mA	82 mA

Specifications — APCI-7300-3 / APCI-7420-3 / APCI-7500-3/4C / APCI-7500-3 / APCI-7800-3

Serial interface – 1-port, 2-port, 4-port, 8-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

EMC – Electromagnetic compatibility

The product complies with the European EMC directive. The tests were carried out by a certified EMC laboratory in accordance with the norm from the EN 61326 series (IEC 61326). The limit values as set out by the European EMC directive for an industrial environment are complied with. The respective EMC test report is available on request.

Safety features

Optical isolation:	1000 V (MX modules)

Physical and environmental conditions

Dimensions:	151 x 99 mm / APCI-7800-3: 175 x 99 mm
System bus:	PCI 32-bit, 3.3 V/5V acc. to spec. 2.2 (PCISIG)
Space required:	1 PCI slot
Operating voltage:	+5 V, ± 5 % from the PC
Current consumption (without modules):	160 mA typ. / APCI-7800: 220 mA
Front connector:	9-pin D-Sub male connector (APCI-7300-3) 2 x 9-pin D-Sub male connector (APCI-7420-3) 4 x 9-pin D-Sub male connector on separate bracket (APCI-7500-3/4C) 37-pin D-Sub male connector (APCI-7500-3) 78-pin D-Sub female connector (APCI-7800-3)
Temperature range:	0 to 60 °C (with forced cooling)

Ordering information

APCI-7300-3 / APCI-7420-3 / APCI-7500-3 / APCI-7800-3

APCI-7300-3: 1-port serial interface (1 x 9-pin D-Sub)
APCI-7420-3: 2-port serial interface (2 x 9-pin D-Sub)
APCI-7500-3: 4-port serial interface (1 x 37-pin D-Sub)
APCI-7500-3/4C: 4-port serial interface incl. 4 x 9-pin D-Sub male connector on separate bracket (incl. ribbon cable)
APCI-7800-3: 8-port serial interface (1 x 78-pin D-Sub)
Each incl. technical description and software drivers.

MX modules: Please order the modules separately!

MX232-G:	RS232 mode, optically isolated
MX232:	RS232 mode
MX422-G:	RS422 mode, optically isolated
MX422-PEP:	RS422 mode, optically isolated, with RTS/CTS
MX422:	RS422 mode
MX485-G:	RS485 mode, optically isolated
MX485:	RS485 mode
MXTTY:	20 mA Current Loop mode (active, passive), optically isolated
Option	
Quarz:	<1 MBaud transfer rate for RS232, RS422, RS485, TTY

Accessories

ST075:	Shielded round cable, 37 to 4 x 9-pin (for APCI-7500-3)
ST074:	Shielded round cable, 37 to 4 x 25-pin (for APCI-7500-3)
ST7809:	Shielded round cable, 78 to 8 x 9-pin (for APCI-7800-3)
ST7825:	Shielded round cable, 78 to 8 x 25-pin (for APCI-7800-3)