

1-port, 2-port, 4-port, 8-port serial interface, modular, with/without optical isolation, 3.3 V/5 V



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 interface

16C950 UART downward compatible

PCI 3,3 V or 5 V

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 as well as in 5 V systems, and in PCI as well as PCI-X systems.

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 3.3 V or 5 V
- Modular structure 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 (APCI-7420-3 + APCI-7500-3)

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

EMC tested according to 89/336/EEC - Preliminary

- in preparation 4th quarter 2005

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: Standard COM driver

Samples for the following compilers:

Microsoft VC++ 5.0

Visual Basic 5.0

Delphi 4

On request:

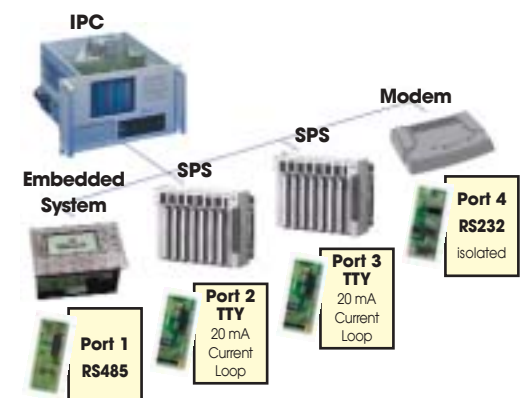
Drivers for Linux Kernel Version 2.4.2

MS-DOS

RTX

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








Application example for APCI-7500-3/4C



1-port, 2-port, 4-port, 8-port serial interface, modular, with/without optical isolation, 3.3 V/5 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							
Module	MX232-G	MX232	MX422-G	MX422	MX485-G	MX485	MXTTY
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	Optional RTS/CTS (MX-422-PEP)				
Autom. transmitter control					yes	yes	
Current consumption	86 mA	10 mA	46 mA	10 mA	58 mA	10 mA	75 mA

APCI-7300-3, APCI-7420-3, APCI-7500-3/4C, APCI-7500-3, APCI-7800-3

Specifications

Serial interface – 1-port, 2-port, 4-port or 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
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 (APCI-7800-3: 175 x 99)
System bus:	PCI 32-bit, 3.3 V/5 V acc. to spec. 2.2 (PCISIG)
Place required:	1 PCI slot + 1 slot opening for the APCI-7500-3/4C
Operating voltage:	+5 V, ± 5 % from the PC
Current consumption (without MX-modules):	160 mA typ. / APCI-7800-3: 220 mA typ.
Front connector:	9-pin SUB-D male connector (APCI-7300-3) 2x9-pin SUB-D male connector (APCI-7420-3) 4x9-pin SUB-D male connector (APCI-7500-3/4C) with separate bracket 37-pin SUB-D male connector (APCI-7500-3) 78-pin SUB-D male connector (APCI-7800-3)
Temperature range:	0 to 60 °C (with forced cooling)

Connection cable for APCI-7500-3



ORDERING INFORMATION

ADDICOM APCI-7300-3, APCI-7420-3, APCI-7500-3/4C, APCI-7500-3

APCI-7300-3: 1-port serial; **APCI-7420-3:** 2-port serial;
APCI-7500-3/4C: 4-port serial, 4 x 9-pin SUB-D male connector (incl. ribbon cable)
APCI-7500-3: 4-port serial, 37-pin SUB-D male connector
APCI-7800-3: 8-port serial, 78-pin SUB-D male connector
 Incl. technical description and software drivers

MX modules: Please order the modules separately!

MX232-G: RS232 mode with optical isolation
MX232: RS232 mode
MX422-G: RS422 mode with optical isolation
MX422-PEP: RS422 mode with optical isolation, with RTS/CTS
MX422: RS422 mode
MX485-G: RS485 mode with optical isolation
MX485: 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-7500-3 and APCI-7800-3

ST075: Shielded round cable, 37-pin to 4 x 9-pin
ST074: Shielded round cable, 37-pin to 4 x 25-pin
ST7809: Shielded round cable, 78-pin to 8 x 9-pin
ST7825: Shielded round cable, 78-pin to 8 x 25-pin

www.addi-data.com

Sales: +49(0)7223/9493-0
 Fax: +49(0)7223/9493-97