ADDI-DATA®

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Technical description

ADDICOM

PA 7301, PA 7302 and PA 7303

January 1999

ADDI-DATA®

Technical description:
ADDICOM PA 7301, PA 7302, PA 7303

1. Intended purpose of the board

The boards PA 730x provide the PC with asynchronous serial interface for the communication with external devices.

The boards are to be used in a free PC ISA slot. The PC is to comply with the EU directive 89/336/EWG and the specifications for EMC protection. Products complying with these specifications bear the $C\epsilon$ mark.

2. Technical data
## 2.1 Electromagnetic compatibility (EMC)

The board has been subjected to EMC tests in an accredited laboratory in accordance with the norms EN50082-2, EN55011, EN55022.

The board complies with the limit values set by the norm EN50082-2 as follows:

	True value	Set value
ESD		4 kV
Fields		10 V/m
Burst		2 kV
Conducted radio interferences		10 V

2.2 Physical setup

The boards are assembled on 2-layer printed circuit cards
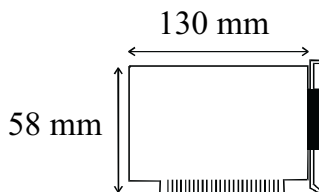
2.3 Board description

PA 7301
- 1-port serial interface; US norm EIA: RS232
- CCITT recommendation: V.24
- 16-byte FIFO memory
- COM1 to COM4
- Transfer rate 112 kBaud

PA 7302
- 1-port serial interface, US norm EIA: RS485
- CCITT recommendation: V.11
- Creeping distance: 3.2 mm
- Transil diodes, absorption power 1ms: 400 W
- Optical isolation
- 16-byte FIFO memory
- COM1 to COM4
- Transfer rate 112 kBaud
- Test voltage: 1000 VAC

PA 7303
- 1-port serial interface, US norm EIA: RS422
- CCITT recommendation: V.11
- Creeping distance: 3.2 mm
- Transil diodes, absorption power 1ms: 400 W
- Optical isolation
- 16-byte FIFO memory
- COM1 to COM4
- Transfer rate 112 kBaud
- Test voltage: 1000 VAC

2.4 Limit values

Operating temperature: .... 0 to 60C
Storage temperature: .... -25 to 70C
Relative humidity: .... 30% to 90% non condensing

Minimum PC requirements:
- operating system: .... MS DOS 3.3 or higher
                       .... Windows 3.1, NT, 95
- bus speed: .... 8 Mhz
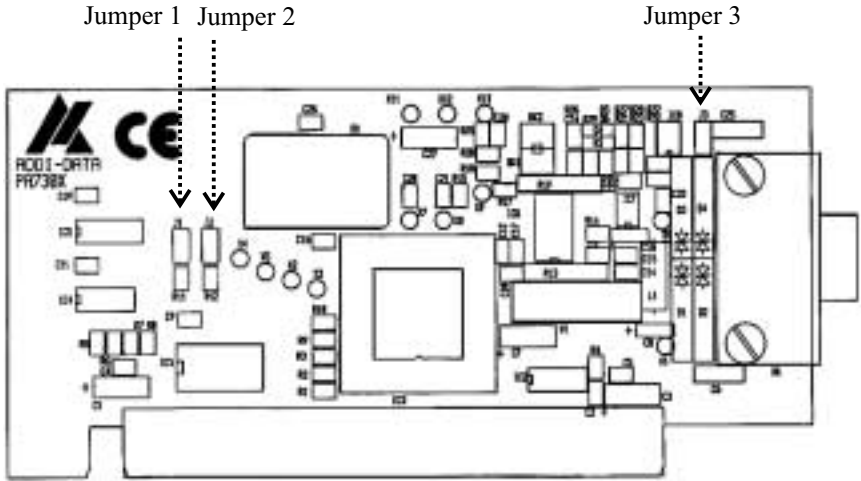
Energy requirements:
- operating voltage of the PC: .... 5V $\pm$ 5%
- current consumption in mA: typ. (without load):

	PA 7301	PA 7302	PA 7303
+ 5 V from PC	36 mA	95 mA	64 mA

3. Settings
3.1 General component scheme

3.2 Jumper settings

The board PA 730x decodes the ISA adress range A10 to A0. It is set to the wished address range by jumper.
Set the corresponding jumpers as follows to configure your board:

Description	Base address	Interrupt line	Jumper 1	Jumper 2
COM1	3F8	IRQ 4	open	open
COM2	2F8	IRQ 3	open	set
COM3	3E8	IRQ 10	set	open
COM4	2E8	IRQ 11	set	set

The jumper configuration simultaneously sets the base address and the interrupt line. A board set with the base address 0x2E8 can thus only function with the interrupt line IRQ11.
Make sure that there is no resource conflict with the interfaces already installed in the PC otherwise the PC could be damaged.
You avoid resource conflict by using the DEBUG program for DOS.
Under DOS:
Enter   C:\debug <Return>
On the screen: -
Enter   d 40:0 <Return>
On the screen   F8 03 00 00 00 00 00   "Adresse 03F8=COM1"
Enter   q <Return>
The interface COM1 is already installed on the address 03F8.
In this case the board cannot be installed on COM1 but only on COM2, COM3 or COM4.

3.2.1 ECHO mode settings

The ECHO mode allows the simultaneous reading of the value sent. You can activate the echo mode through jumper 3:

Jumper 3	Echo mode
set	deactivated
open	activated

4. Connection to the peripheral

PA 730x: with a shielded cable, twisted in pairs.
PA 7301:   the signal lines are to be twisted in pairs with GND
PA 7302:   Connect the peripheral cable so that the differential lines described in
                 the connector pin assignment with "+" and "-" are twisted in pairs.
The housing of the peripheral connector
- is to be firmly screwed together with the shield of the cable.
- is to assure a low-resistance connection ($< 100 \, m\Omega$) between the shield and the housing of the PC.
The shield of the cable is to be earthed on both sides.

The use of the board according to its intended purpose includes observing all advices given in this manual and in the safety leaflet. Uses beyond these specifications are not allowed. The manufacturer is not liable for any damages which would result from the non-observance of this clause.
The use of the board according to its intended purpose includes observing all advices given in this manual and the safety leaflet. Uses beyond these specifications are not allowed.

5. Pin assignment
9-pin SUB-D
male connector
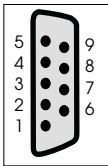
PA 7301: Mode RS232

Pin	Signal	Meaning
1	DCD	Data carrier detect
2	RxD	Received data
3	TxD	Transmitted data
4	DTR	Data terminal ready
5	GND	Signal ground
6	DSR	Date set ready
7	RTS	Request to send
8	CTS	Clear to send
9	RI	Ring indicator

PA 7302: Mode RS485

Pin	Signal	Meaning
1	-	Not connected
2	-	Not connected
3	Rx+ Tx+	Transmit & receive +
4	RT connec.	Connection to terminator
5	-	Isolated ground
6	RT	Terminator 120 Ω
7	-	Not connected
8	-	Not connected
9	Rx- Tx-	Transmit & receive -

PA 7303: Mode RS422

Pin	Signal	Meaning
1	Tx+	Transmit +
2	TX-	Transmit -
3	Rx+	Receive +
4	RT connec	Connection to terminator
5	-	Isolated ground
6	RT	Terminator 100Ω
7	-	Not connected
8	-	Not connected
9	Rx-	Receive -