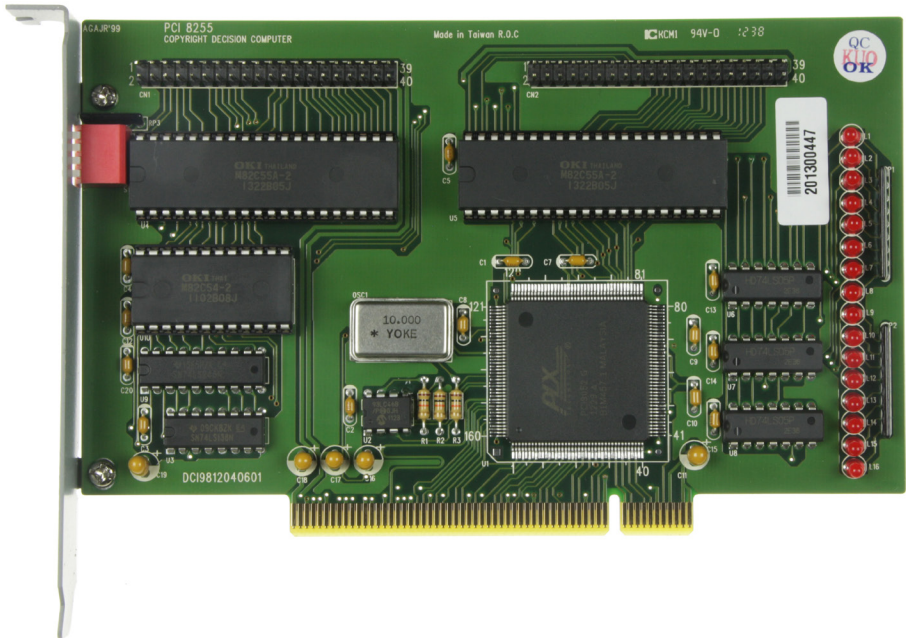# 8255-I/O Manual

PCI - 8255-P2

48 Digitale I/O 8255 - 3 Timer/Counter 8254

Item-No.: 8255-P2
Taiwan Product Code: APCI8255/CE

Data

Bus: 32 bit PCI card with PnP features

Description:

PIO card with 48 digital I/0 channels and three 16-bit counters. Equipped with two socketed 8255 and one 8254.

•   Equipped with 2 x 8255 (OKI M82C55A-2
•   1 x 8254 (OKI M82C54-2)
•   Input/output programmable for each channel
•   Up to 48 I/0 lines
•   Three independent 16-bit counters / 10MHz
•   Connection via 40-pin male connectors on the board
•   8255N compatible

Features:

Software/Driver:

English manual with setting plan, connection diagram, data sheets and program examples. With Windows-98/NT/2000/ XP/WIN-7-8-10, Linux and DOS drivers or programming examples

Per delivery you will receive a freshly burned „Decision-Computer Deutschland Service CD" with current drivers, manuals, installation instructions and additional German information.

The extent depends on the product!

Installation instructions

Avoiding problems when commissioning new cards

f a new or checked, returned card still does not work, please contact me before sending it back to me again to solve the problem!

The following problems can be avoided by following these instructions:

No function or partial malfunction during initial operation
The card does not appear in the PCI device listing (Vendor ID 6666) at system startup.
The driver is not or not completely installed for serial cards.
The address of the card or card is not recognized.

Remedy:

Due to high humidity in Taiwan, a wafer-thin, insulating film may occasionally form on the slot contacts.
Older PCs from nicotine-containing environments are also a problem.

This „error" usually disappears when the slot is changed or the contact strip is cleaned. These cards then work without problems when checked. With ISA cards the problem rarely occurs because of the stronger contacts!

If a card does not work after the first insertion, please clean the contacts first with a paper towel, avoiding static charge.

The cards must be inserted straight and deep enough!

Safety notice

This product is not fail-safe and may therefore be used in applications where risks to health, life and property may occur! Connection and repairs may only be carried out by a specialist.

When installing the product in a machine or plant, ensure that the relevant regulations, rules and directives continue to be observed after installation!

These products come into contact with electrical voltage, therefore the applicable VDE regulations must be observed, in particular VDE 0100, VDE 0550/0551, VDE 0700, VDE 0711 and VDE 0860.

Board-ID

1	2	3	4	Card Number
OFF	OFF	OFF	OFF	15
ON	OFF	OFF	OFF	14
OFF	ON	OFF	OFF	13
ON	ON	OFF	OFF	12
OFF	OFF	ON	OFF	11
ON	OFF	ON	OFF	10
OFF	ON	ON	OFF	9
ON	ON	ON	OFF	8
OFF	OFF	OFF	ON	7
ON	OFF	OFF	ON	6
OFF	ON	OFF	ON	5
ON	ON	OFF	ON	4
OFF	OFF	ON	ON	3
ON	OFF	ON	ON	2
OFF	ON	ON	ON	1
ON	ON	ON	ON	0

The switch is used to identify the card number. Default setting is card 15, there are two methods:

a. PnP mode
Plug the PCI bus adapter into a slot. The PCI BIOS will automatically assign the I/O address for each adapter and will automatically assign each adapter a cardm number starting from 0. You can set any card number in PnP mode. To differentiate the port ID you need software tools. Almost all operating systems can run the PnP mode.

b.Manual mode
Set the card number with the ID switch. The PCI BIOS assigns an I/O address to each adapter in advance. Set different card numbers for each adapter. The card number must not be used twice!

Driver - Software

In the delivery you will find 2 CD's:

1. Decision utility driver CD - yellow - in each product package
he current software package with driver and software for XP, Vista and WIN-7/8/10 Manuals etc. from Taiwan

2. Decision-Computer Merz - Service CD - white - 1 x per delivery
This CD is a supplement to CD-1 and is intended to contain the latest information. The refore this CD is always freshly burned and can only be in the package once. The „old" German Dii-1811 driver and manuals can only be found on this CD.

Websites with drivers, software and manuals

http://www.decision-computer.de/

http://www.pci8255.net/

Port 1   (CN1)

The pin assignment of port 1/2 on page 8/9 in the original manual does not conform to the standards. The marking of pin 1 on the assembly print must be exchanged with pin 2.

Attention: If you connect directly to the post the original manual fits.
If a flat cable is plugged in, this pin assignment is valid.

D-Sub-37	IDC 40-Pin	Signal	D-Sub-37	IDC 40-Pin	Signal
1	PIN 1 rote Ader GND		20	PIN 2	GND
2	3	PA3	21	4	GND
3	5	PA2	22	6	PA1
4	7	PA0	23	8	CLKO
5	9	OUT0	24	10	GATEO
6	11	CLK2	25	12	OUT2
7	13	GATE2	26	14	CLK1
8	15	GATE1	27	16	OUT1
9	17	PA4	28	18	PA5
10	19	PA6	29	20	PA7
11	21	PC7	30	22	PC6
12	23	PC5	31	24	PC4
13	25	PC0	32	26	PC1
14	27	PC2	33	28	PB7
15	29	PC3	34	30	PB6
16	31	PB0	35	32	PB5
17	33	PB1	36	34	PB4
18	35	PB2	37	36	PB3
19	37	-5V	frei	38	+5V
frei	39	-12V	frei	40	+12V

The load capacity of the outputs is about 1.8 mA. Caution - in old building instructions the old 8255 version is sometimes loaded with 10 mA!

The 16 LEDs indicate activity on the first two ports and are connected to the I/O lines

PORT 2   (CN2)

The pin assignment of port 1/2 on page 8/9 in the original manual does not conform to the standards. The marking of pin 1 on the assembly print must be exchanged with pin 2.

Attention: If you connect directly to the post the original manual fits.
If a flat cable is plugged in, this pin assignment is valid.

D-Sub-37	IDC 40-Pin	Signal	D-Sub-37	IDC 40-Pin	Signal
1	PIN 1 rote Ader GND	PIN 1 rote Ader GND	20	PIN 2	GND
2	3	GND	21	4	GND
3	5	GND	22	6	GND
4	7	GND	23	8	GND
5	9	GND	24	10	GND
6	11	GND	25	12	GND
7	13	PA1	26	14	PA0
8	15	PA3	27	16	PA2
9	17	PA5	28	18	PA4
10	19	PA7	29	20	PA6
11	21	PC6	30	22	PC7
12	23	PC4	31	24	PC5
13	25	PC1	32	26	PC0
14	27	PB7	33	28	PC2
15	29	PB6	34	30	PC3
16	31	PB5	35	32	PB0
17	33	PB4	36	34	PB1
18	35	PB3	37	36	PB2
19	37	-5V	frei	38	+5V
frei	39	-12V	frei	40	+12V

Strong electromagnetic sources such as power lines, large electric motors, switches or welding machines can cause strong electromagnetic interference. Video monitors and cables are also strong sources of interference.

If the cable must be routed through an area with considerable electromagnetic interference, shielded cables should be laid with grounding at the signal source.

Avoid placing your signal cables parallel to a high voltage line! Lay the signal cable at right angles to the power line to minimize unwanted effects.

PCI-8255 + DOS

The PCI 8255 is compatible with the ISA version 8255-N. DOS software can continue to be used without modification. Since no fixed address can be set on the PCI card by PnP, the setting must be made in the AUTOEXEC with the 8255SET software. Program and instructions can be found on the CD.

If the DOS software can still be modified, it is also possible to query the PnP. Instructions can be found on the next page.

Due to the PCI bus, no more BUS clock can be used for the timer. The clock must be supplied externally!

PCI-Karten + DOS

To use the PCI cards under DOS, the base address in the port I/O area of the computer must first be determined
will be. As soon as the base address is known, simple port I/O commands can be written to the board with simple port I/O commands, e.g. in assembler

```
            mov dx,BasisAddresse
            mov al,ZuSchreibenderWert
            out dx,al
or:         mov dx,BasisAddresse
i           n al,dx
```
can be accessed.

The base address of a PCI card is initially assigned by the BIOS, and may change at each startup of the computer.
The BIOS provides some additional functions for PCI cards via the special interrupt 15h.
is being resorted to.

Since each PCI card is identified by a unique manufacturer number (VendorID) and a card number (DeviceID)
you must adjust the corresponding values for the inserted card. Below is also a list
of the current cards, and the corresponding DeviceID's.

I/O Addresses

Base +	
0	Port 1A input/output buffer
1	Port 1B input/output buffer
2	Port 1C input/output buffer
3	Port 1 control register
4	Port 2A input/output buffer
5	Port 2B input/output buffer
6	Port 2C input/output buffer
7	Port 2 control register
8	Counter 0 input/output buffer
9	Counter 1 input/output buffer
A	Counter 2 input/output buffer
B	Counter control register

Steuerwort für Betriebsart des 8255

Gruppe B		Port C0-C3
	D0	1 Eingang 0 Ausgang
		Port B
	D1	1 Eingang 0 Ausgang
		Modus
	D2	0 Modus 0 1 Modus 1
Gruppe A		Port C4-C7
	D3	1 Eingang 0 Ausgang
		Port A
	D4	1 Eingang 0 Ausgang
		Modus
	D5 D6	00 Modus 0 01 Modus 1 1X Modus 2
	D7	1 Betriebsart setzen

	Operation
D0	0 zurücksetzen 1 setzen
	Bitauswahl
D1 D2 D3	000 Bit 0 001 Bit 1 010 Bit 2 011 Bit 3 100 Bit 4 101 Bit 5 110 Bit 6 111 Bit 7
D4	ohne Bedeutung
D5	ohne Bedeutung
D6	ohne Bedeutung
	Befehlsart
D7	0 Bitmanipulation

Bedeutung der Datenbits für die Funktion
Bit setzen oder rücksetzen von Port C.

Steuerwort für Betriebsart des 8254

	Zählweise
D0	0 duales Zählen 1 dezimales Zählen
	Modus
D1 D2 D3	000 0 001 1 X10 2 X11 3 100 4 101 5
	Ladefolge der Werte
D4 D5	00 speziell zum Lesen 10 nur MSB laden/lesen 01 nur LSB laden/lesen 11 erst LSB. dann MSB
	Zählerauswahl
D6 D7	00 Zähler 0 01 Zähler 1 10 Zähler 2 11 ungültig

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