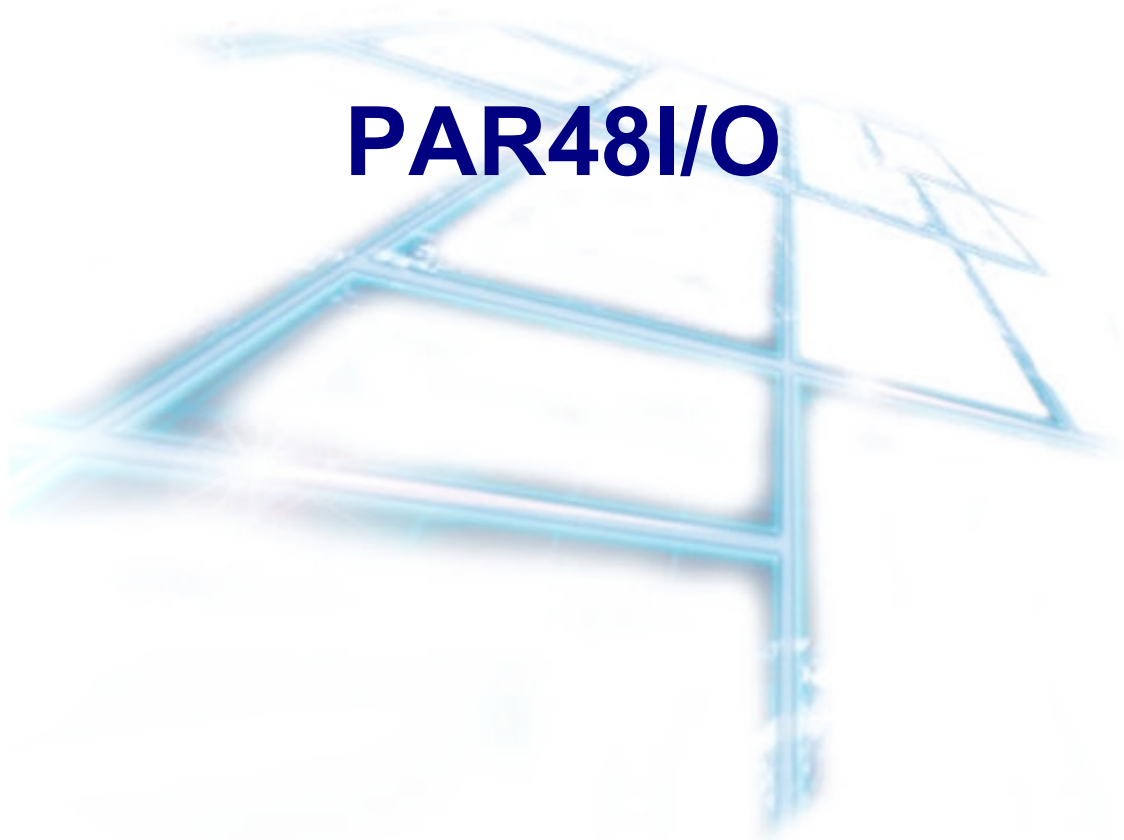


User's Guide

PAR48I/O



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1 Overview

1.1 Introduction

Congratulations! You've bought a QUANCOM high quality measurement and automation module, which shows the newest update of technology and whose attributes and functions are able to compete with every other instrument and even beats them. The following special attributes are included:

Features of the board

- Easy programming
- Various sample applications in different programming languages
- Driver support by Windows XP, 2000, NT and Me/98/95 with the **QLIB (QUANCOM Driver Library)**

1.2 Our experience is your profit

We from QUANCOM are specialists for the development of hard- and software. QUANCOM has grown to become one of the leading suppliers of measuring and automation technology to industry. At its design centres QUANCOM has developed an impressive range of products.

1.3 Customer Communication

QUANCOM wants to receive your comments on our products and manuals. We are interested in the applications you develop with our products, and we want to help if you have problems with them. To make it easy for you to contact us, this manual contains comment and configuration forms for you to complete. These forms are in chapter 7.5 "Documentation comment form" at the end of this manual.

1.4 Changes in this manual and software updates

QUANCOM - products are marked out by their constant further development. You can watch all the actual information of the changes in the README-file on the installation disk or CD. You can always get more information and free software updates on our internet website at WWW.QUANCOM.DE.

1.5 Scope of supply

- Measuring and automation module
- User's manual
- QUANCOM CD

If a component is missing please contact your dealer. QUANCOM reserves the right to change the extent of delivery without a preliminary announcement.

2 Installation procedures



2.1 System requirements

- Personal computer: The QUANCOM modules are designed to operate with IBM-AT compatible computers with 80X86 or compatible. (i.e. 80386 / 80486 / Pentium)
- Interface: Your computer must have a parallel-port interface.

You can find more information in chapter 3, “Technical hardware description”.

2.2 Safety precautions

For the sake of your security and of a safe function of your new QUANCOM module mind the following advice:

- Computer motherboards and components contain very delicate integrated circuit (IC) chips. To protect them against damage from static electricity, you must follow some precautions whenever you work on your computer. Use a grounded wrist strap before handling computer components. If you don't have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
- Hold components by the edges and try not to touch the integrated circuit chips, leads or circuitry.
- Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

! ATTENTION !	Modifications of the device made without express permission of QUANCOM Informationssysteme GmbH, lead to the loss of warranty and certification
----------------------	---

3 Technical hardware description

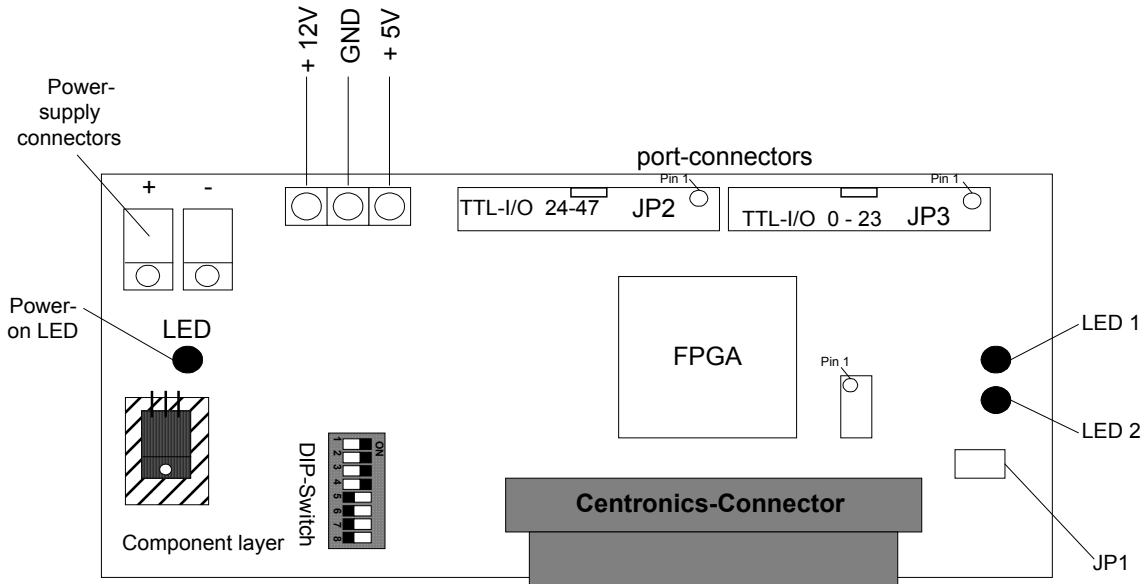
3.1 Module information

With it's 48 TTL I/O-ports, programmable as input or output, and one 16-bit timer this module may be easily programmed using the parallel-port of a PC. The register-bits are multiplexed and will be strobed out simultaneously.

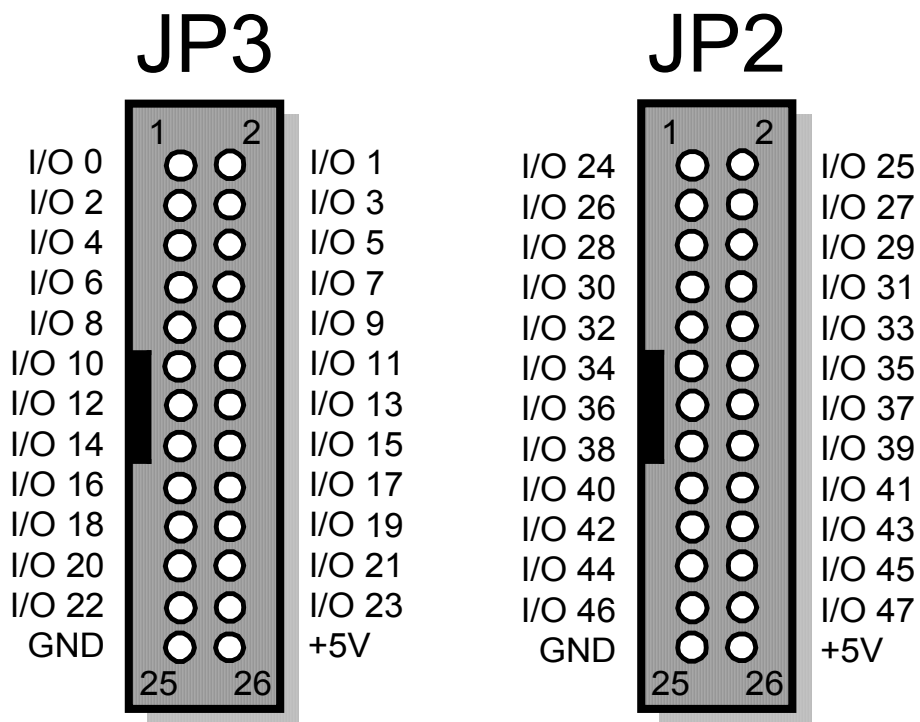
3.2 Technical data

Interface:	LPT
I/O ports:	48 x TTL
Counter:	16 Bit
TTL Fan-Out:	2 mA
Current rating:	approximately 80 mA
Supply voltage:	7,5..15 Volt
Sampling-rate:	> 10 kHz
Connectors:	2 * 26pin post pole.
Dimensions:	135 x 78 mm
Temperature range:	-10..65 Grad Celsius

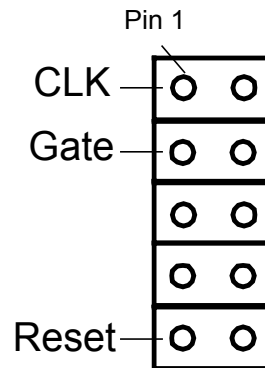
3.3 Board overview



3.3.1 Pin assignment of JP2 and JP3 (TTL I/O)



3.3.2 Pin assignment of JP4 (Counter)



CLK: Increment with rising edge

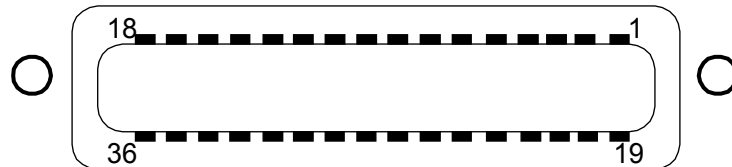
GATE: GATE = high - CLK will be counted,
GATE = low - CLK will be ignored.

RESET: Active low, reset counter.

CLK, GATE and RESET are pull-upped with resistors.

3.3.3 Pin assignment of Centronics interface

Centronics-Buchse (Draufsicht)



Pin assignment:			
Pin	Signal	Pin	Signal
1	Strobe	19	GND
2	Data 0	20	.
3	Data 1	21	.
4	Data 2	22	.
5	Data 3	23	.
6	Data 4	24	.
7	Data 5	25	.
8	Data 6	26	.
9	Data 7	27	.
10	ACK	28	.
11	BUSY	29	.
12	PE (Paper END)	30	GND
13	SELKT	31	Nc.
14	Nc.	32	Nc.
15	Nc.	33	Nc.
16	GND Signal	34	Nc.
17	Nc.	35	Nc.
18	Nc.	36	Nc.

3.3.4 Setting of Dip switch

Dip-Switch settings								
1	2	3	4	5	6	7	8	Function
1	1	1						Adresse0
0	1	1						Adresse1
1	0	1						Adresse2
0	0	1						Adresse3
1	1	0						Adresse4
0	1	0						Adresse5
1	0	0						Adresse6
0	0	0						Adresse7
			1	0				ACK= 1
			0	1				ACK= 0
					1			Busy= 0
					0			Busy= X
						1		PE= 0
						0		PE= X
							1	SELKT= 0
							0	SELKT= x

While using only one module, the DIP-switch 6 (Busy) has to be set to “0”. If you’re using more than one module at the same port, the switch has to be “0” only at one device, preferable at the last device in the chain. DIP-Switch 6 forces the signal to be low (pulled down). The other switches may be set as your application requires them, where the position “0” means open.

3.4 Controlling the module

3.4.1 Data word for address and data

The upper 4 data bits are reserved for the address of the addressed module, therefore it is possible to connect and address up to 16 modules at the same port. As the data has to be divided into an upper- and a lower-nibble, one address-bit is used to show that either the upper- or the lower-nibble is transferred. So only 8 modules may be used at the same time.

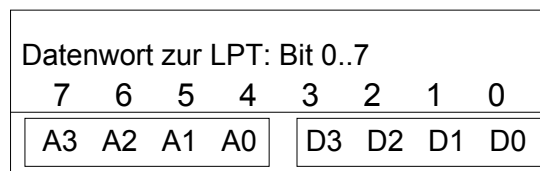
The address/data information is simply poked into the data-register of the parallel port interface and transferred to the module with a single strobe. The strobe normally is generated with a high, low, high combination poked into the 2nd address after the base-address of the interface.

In the example show below the strobe (Pin 1) is at 037A hex (BASE of LPT1: 0x378+2, Bit 0).

Example:

```

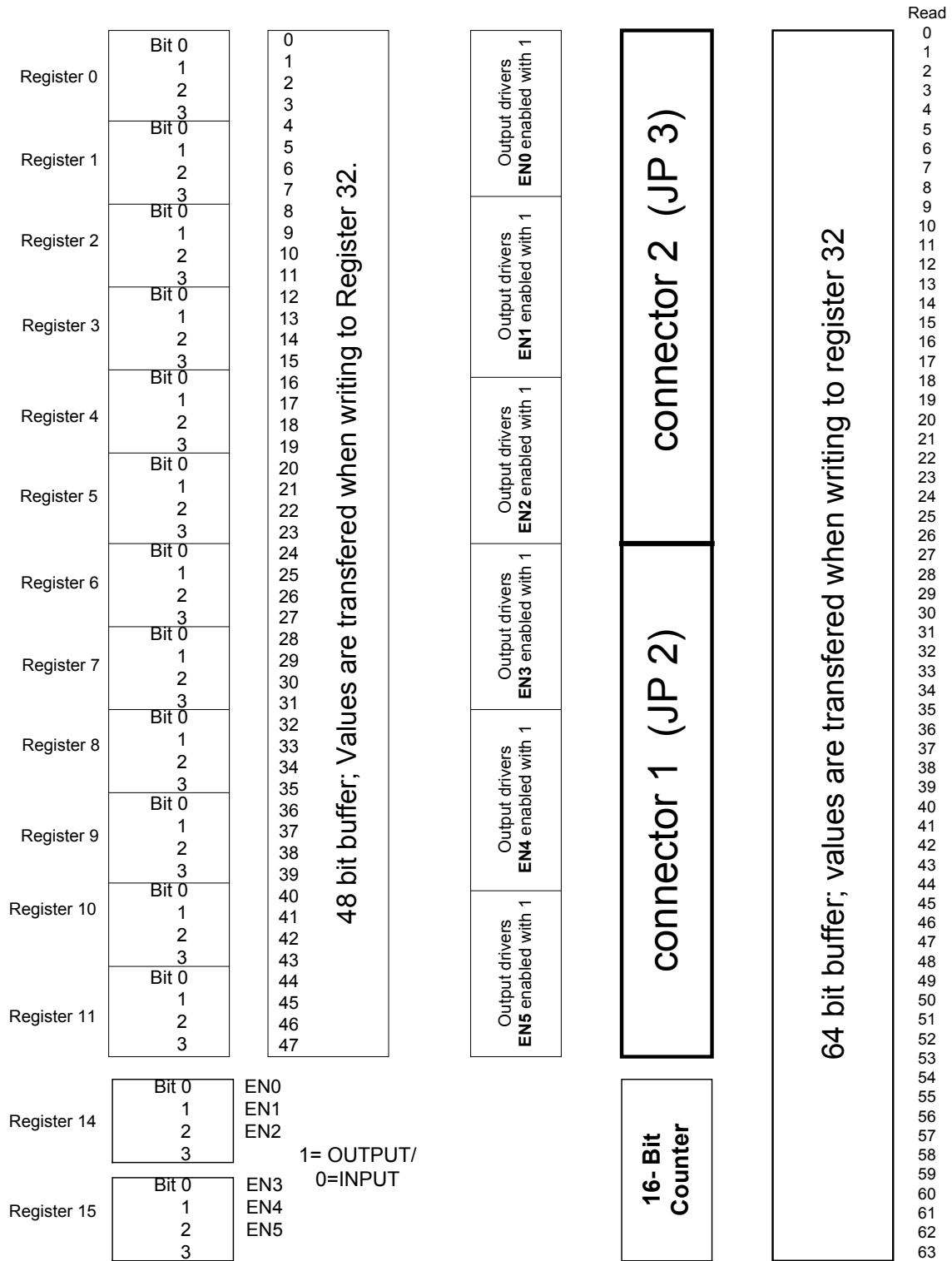
10  OUT &H037A,0: REM H
20  OUT &H037A,1: REM L
30  OUT &H037A,0: REM H
    
```



While writing the address/data byte to the module, a GAL assembles the complete data-byte. The lower address shows the lower nibble (LSB) and the upper address the upper nibble (MSB).

3.5 Hardware register

3.5.1 Register overview



4 Direct I/O programming

4.1 Software

4.1.1 Which software to use ?

The software to be use depends on the operating system being used or your application. To access the board, following possibilities exist:

- **Method 1:** Direct I/O (access the hardware registers directly, all operating systems)
- **Method 2:** High-Level programming (access the board with the QLIB)
- **Method 3:** Install the QLIB for use with existing software

If you use **Method 1 and 2** you need the sources for the application. You are responsible for adding the programming statements in the application. For using these methods, knowledge in programming is necessary. See chapter 3.5 for a complete discussion of the hardware registers. Chapter 5.2 shows you how to use and install the QLIB.

Method 3 allows you to get the QUANCOM board running with existing software, i.e. the Sitekiosk browser software. The only thing you have to do in this case, is to install the QLIB Driver Library from the Installation CD. For details on installing the QLIB see chapter 5.2.

4.2 Program examples

The following example shows how easy the programs for the QUANCOM boards are written.

4.2.1 Controlling the TTL I/O

Example: programming the TTL in C

```

/*Description: Program to control the PAR48IO */
/*Function: All 48-channels are accessed.

#define port1h 0x3bc      /*Hercules LPT*/
#define port1  0x378     /*COM1*/
#define port2  0x278     /*COM2*/

#define int  LPT_DATA = LPTBASE;      /* LPT-DATA address of LPT*/
          LPT_BUSY = LPTBASE+1;      /* bit 7 = BUSY of LPT */
          LPT_STB  = LPTBASE+2;      /* Strobe-address of LPT */

int modul_ad; LPTBASE port1h

main()
{
int modul;
int alt;
long int i;
int j;
int a;

printf("PAR48 I/O \n");
printf("-----\n");
alt = inp(LPT_STB);          /* read old state from Register */
outp(LPT_STB, 0);          /* set strobe to HIGH */

printf("Enter module address (0..7): ");
scanf("%d",&modul);        /* Module address 0..7 s. Dip.Switch */
modul_ad=(modul&7)*32;
printf("MODUL_AD=0x%x\n",modul_ad);

printf("Module-Test  exit with any key\n");
test0();                    /*I/O complete test */
/*test1();*/                /*Counter Test */
/*test2();*/                /*Bit-Test up and down */
printf("Test3:\n");
test3();                    /*setting and reading Bit's */

outp(LPT_STB, alt);        /* write old state */
}

/*Test the Board */

```

```

test0()
{
int j,k;

printf("Testing Bit's \n");

par48_setze_alle_auf0();

do {
par48_write_reg(14,7); /*Direction for I/O 0-23 1=out,0=in*/
par48_write_reg(15,7); /*Direction for I/O 24-47 1=out,0=in*/

for(j=0;j!=48;++j) {
par48_write_reg(j/4,1 << (j&3));          /*Data for I/O 0-3*/
par48_latch();                             /*Output-Latch*/
par48_latch();                             /*Input-Latch*/
for(k=0;k!=48;++k) {
if(j==k) {if(par48_get_bit(k)!=1) printf("%d not 1 \n",k);}
else {if(par48_get_bit(k)!=0) printf("%d not 0 \n",k);}
}
/* for(i=0;i!=200000;++i);*/
par48_setze_alle_auf0();
}/*END for*/
}while(!kbhit());getch();
}

/*Counter-Test :: write counter values to Monitor, until key is pressed */
test1()
{
while(!kbhit()) printf("%u   %c",par48_get_cnt(),13);
getch();
}

/*All bit's one by one to high and low */
test2()
{
int j;
par48_write_reg(14,7);          /*Direction for I/O 0-23 1=out,0=in*/
par48_write_reg(15,7);          /*Direction for I/O 24-47 1=out,0=in*/
do {

for(j=0;j!=48;++j) {
par48_write_reg(j/4,1 << (j&3));          /*Data for I/O 0-3*/
par48_latch();
print_in_werte();                        /*print all input-values*/
/* for(i=0;i!=200000;++i);*/
par48_setze_alle_auf0();
}/*for*/
}while(!kbhit());getch();
}

/*set single bits*/
test3()
{
int a;

par48_write_reg(14,7); /*Direction for I/O 0-23 1=out,0=in*/
par48_write_reg(15,7); /*Direction for I/O 24-47 1=out,0=in*/

```

```
par48_write_reg(2,4);      /*set I/O-10 to 1*/
par48_latch();           /*transfer into latch/

par48_write_reg(0,3);     /*set I/O-0 and I/O-1 to 1 */
par48_latch();           /*transfer into latch/

/*read the Bit's */
par48_latch();           /*transfer into latch/
a=par48_get_bit(0);      /*read Bit 0 */
printf("Bit 0:%d\n",a);

a=par48_get_bit(1);      /*read Bit 1 */
printf("Bit 1:%d\n",a);

a=par48_get_bit(2);      /*read Bit 2 */
printf("Bit 2:%d\n",a);

a=par48_get_bit(10);     /*read Bit 10 */
printf("Bit 10:%d\n",a);

a=par48_get_bit(11);     /*read Bit 11 */
printf("Bit 11:%d\n",a);
}
```

5 Softwareprogramming with the QLIB

5.1 QLIB (QUANCOM Driver Library)

The **QLIB**, which stands for **QUANCOM Driver LIBrary**, was developed with the target to allow the simple programming of all our data acquisition products under various operating systems. So it is easy to write an application that runs under the operating systems Windows Me/98/95 and Windows XP/2000/NT4.0. This driver interface is not limited to PC boards or other I/O adapters but is also targeted towards supporting the next product generations currently being developed. The used functions and parameters are the same for all operating systems.

Supported operating systems:

- Microsoft Windows XP/2000/NT4.x
- Microsoft Windows ME/98/95

Supported compilers:

C / C++

- Borland C++ 3.1, 4.x, 5.x, 6.x
- Microsoft® Visual C++ 1.x, 2.x, 4.x, 5.x, 6.x

Pascal

- Borland Turbo Pascal

Delphi

- Borland Delphi

Basic

- Microsoft® Visual Basic 3.x, 4.x, 5.x; 6.x

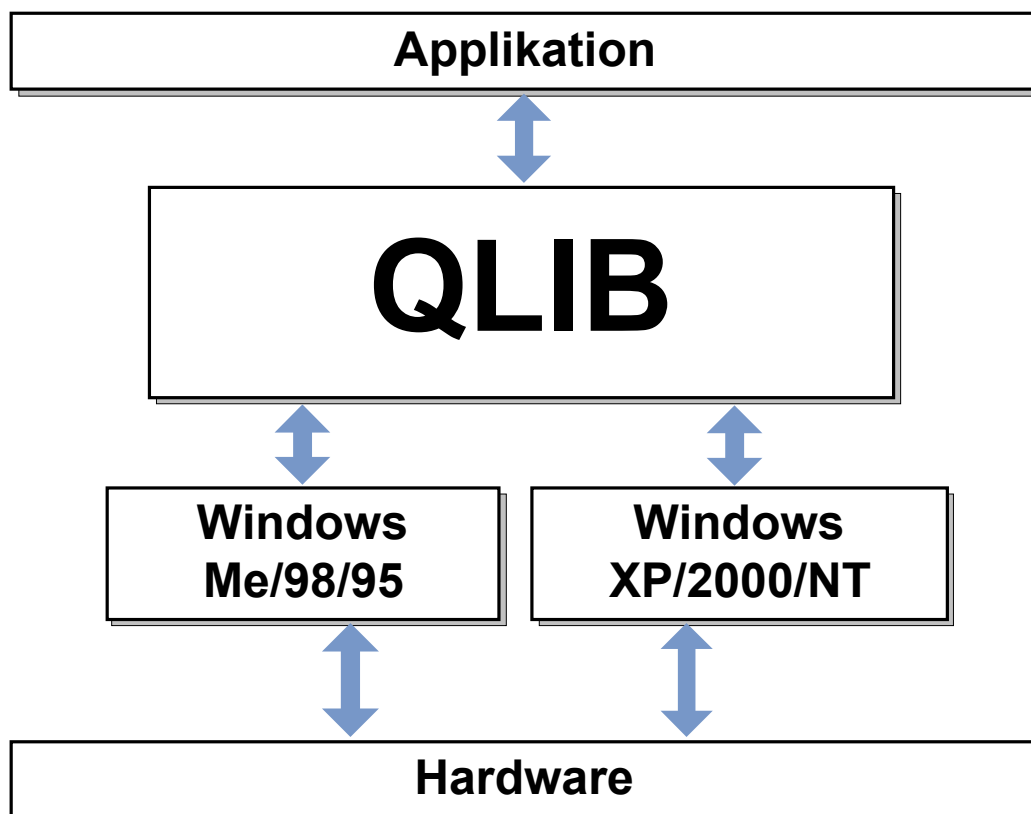
Graphical Programming Language

- Agilent VEE from Agilent
- LabView® from National Instruments

5.2 Installation and general programming with the QLIB

For further information about the installation process and the general programming with the QLIB (i.e. setting up the system, linking libraries, adding header files, etc.) please see the „QLIB“ manual or the windows help file (qlib.hlp) which is included on the installation CD.

The following chapters describe the installation of the drivers depending on the operating system (Windows Me / 98 / 95 or Windows XP / 2000 / NT) and bus type (PCI, ISA). The installation procedure differs for every operating system and bus type.



5.2.1 Installing the QLIB and drivers for your QUANCOM board (Windows Me/98/95)

If you have downloaded the QLIB Software from our website please read the note below before installing any drivers.

Step 1: Software installation for ISA boards:

Put the QLIB installation Disk 1 in drive A: and click on **Start | Run**. Select the program a:\setup.exe and click on OK to continue. The installation program will be started now and will guide you through the rest of the installation process. SETUP.EXE will install the first part of QLIB.

Step2: Driver installation for ISA boards:

Step 2 installs the generic driver for the QUANCOM ISA boards. The driver must be installed with the „Control panel“. To open the „Control panel“ click on **Start | Settings | Control panel**.

- Double click on the „Hardware“ icon.
- Click on “continue”
- Choose “no” (“Should the new hardware be searched ?“) and click on “continue”
- Click on “other components” and then on “continue”

Click on “disk” and choose the file “A:\WIN95\QUANCOM.INF” on QLIB-disk 1.

Choose the item **QUANCOM ISA-Karten** or **QUANCOM ISA board** in the list of available boards and the click on “continue”

The driver for all ISA boards will be installed now.

Step3: Select your board in the QLIB Control panel:

Step 3 is to let QLIB know which type of boards are installed. For step 3 please open the „Control panel“ again. To open the „Control panel“ click on **Start | Settings | Control panel**.

- Double click on the QLIB icon
- Click on „Add“ and select the QUANCOM board you want to install.
- Select the QUANCOM board from the list of installed boards and click on the button „Properties“. Check that the selected I/O address is the same as the one configured with the jumpers on the board (see chapter "Jumpers").

The board will be installed now. QLIB supports multiple boards in the same system. If you have more than one board Step 3 has to be repeated for every board.

NOTE: This section tells you what to do if you downloaded the QLIB from the web (QUANCOM Library)

If you have downloaded the QLIB from our website „<http://www.quancom.de/QLIBENG>“ you received a program like „qlib32_v160.exe“. Create a directory „i.e. C:\QLIBINST“ on you harddrive. Copy the program to this directory. Change on the DOS commandline to this directory and run the program. „qlib32_v160.exe“. This will extract the archived files to your harddisk. If you are asked in the following steps to select the i.e. A:\WIN95\QUANCOM.INF or A:\SETUP.EXE don't switch to drive „A:“ but rather to „i.e. C:\QLIBINST\DISK1\WIN95\QUANCOM.INF“ or „C:\QLIBINST\DISK1\SETUP.EXE“.

5.2.2 Installing the QLIB and drivers for your QUANCOM board (Windows XP/2000/NT)

If you have downloaded the QLIB Software from our website please read the note below before installing any drivers.

Step1: Software and Driver installation for ISA boards:

Put the QLIB installation Disk 1 in drive A: and click on **Start | Run**. Select the program **a:\setup.exe** and click on **OK** to continue. The installation program will be started now and will guide you through the rest of the installation process. SETUP.EXE will install the QLIB and the needed drivers.

Step 2: Select your board in the QLIB Control panel

Step 2 is to let QLIB know which type of boards are installed. For step 2 please open the „Control panel“ again. To open the „Control panel“ click on **Start | Settings | Control panel**.

- Double click on the QLIB icon
- Click on „Add“ and select the QUANCOM board you want to install.
- Select the QUANCOM board from the list of installed boards and click on the button „Properties“. Check that the selected I/O address is the same as the one configured with the jumpers on the board (see chapter „Jumpers“).

The board will be installed now. QLIB supports multiple boards in the same system. If have more than one board Step 3 has to be repeated for every board.

NOTE: This section tells you what to do if you downloaded the QLIB from the web (QUANCOM Library)

If you have downloaded the QLIB from our website „<http://www.quancom.de/QLIBENG>“ you received a program like „qlib32_v160.exe“. Create a directory „i.e. C:\QLIBINST“ on your harddrive. Copy the program to this directory. Change on the DOS commandline to this directory and run the program. „qlib32_v160.exe“. This will extract the archived files to your harddisk. If you are asked in the following steps to select the i.e. **A:\WIN95\QUANCOM.INF** or **A:\SETUP.EXE** don't switch to drive

„A:“ but rather to „i.e. C:\QLIBINST\DISK1\WIN95\QUANCOM.INF“ or
„C:\QLIBINST\DISK1\SETUP.EXE“.

6 QLIB Commands

Make sure that the QLIB (QUANCOM Driver Library) is properly installed. For programming the UNITIMER board you need at minimum the QLIB release v1.70. For further information about the installation and how to include the necessary files in your application see the „QLIB“ documentation. This chapter describes the special commands that are required to use the UNITIMER board with the QLIB. These samples assume that the board is installed and properly set-up for use with the QLIB (QUANCOM Driver Library).

6.1 Simple QLIB commands

6.1.1 Generals and special functions

QAPINumOfCards

ULONG QAPINumOfCards (void);

With the function QAPINumOfCards it is possible to ask , which used cards are supported by the QLIB

QAPIGetCardInfo

LPCARDDATAS QAPIGetCardInfo (ULONG cardid);

With the function QAPIGetCardInfo it is possible to get some information about the card

QAPIGetCardInfoEx

ULONG QAPIGetCardInfoEx(ULONG cardid LPCARDDATAS lpcd);

With the function QAPIGetCardInfoEx it is possible to get some information about the card. These will be written into the applications memory

6.2 Extended QLIB commands (QAPIExt...)

6.2.1 Generals functions

QAPIExtOpenCard

ULONG QAPIExtOpenCard (ULONG cardid, ULONG devnum);

Use the function QAPIExtOpenCard to open a board and retrieve the board handle

QAPIExtCloseCard

void QAPIExtCloseCard(ULONG cardhandle);

With the function QAPIExtCloseCard the board is closed

QAPIExtNumOfCards

ULONG QAPIExtNumOfCards (void);

With the function QAPIExtNumOfCards it is possible to ask , which used cards are supported by the QLIB

6.2.2 Special functions

QAPIExtGetCardInfo

```
LPCARDDATAS QAPIExtGetCardInfo( ULONG cardid );
```

With the function QAPIExtGetCardInfo it is possible to get some information about the card

QAPIExtGetCardInfoEx

```
ULONG QAPIExtGetCardInfoEx( ULONG cardid LPCARDDATAS lpcd );
```

With the function QAPIExtGetCardInfoEx it is possible to get some information about the card. These will be written into the applications memory

QAPIExtReleaseCardInfo

```
void QAPIExtReleaseCardInfo( LPCARDDATAS carddatas );
```

With the function QAPIExtReleaseCardInfo it is possible with QAPIExtGetCardInfo to get out the asked card information

6.3 Examples for C with QLIB

The following example shows the programming of the board using the API-functions of the QLIB.

6.3.1 Controlling the TTL I/O

```
#include<stdio.h>
#include<conio.h>
#include<iostream.h>
#include<windows.h>

//      bind with QLIB
#include "qlib.h"

void main()
{
    int i;
    ULONG nHandle;
    ULONG nResult;

    // Open board and check if it's present
    if((nHandle = QAPIExtOpenCard(PAR48IO,0L)) == 0L)
    {
        cout<<"\n Couldn't open board \n";
        return;
    }

    // do forever
    do
    {

        //define in- and output-channels, here channel 0-23 as input and channel 24-47 as output
        //nResult=QUAPIExtSpecial(handle, JOB_PAR48IO_IOMODE"channel"0-7,EIN=0
        AUS=1,0
        nResult=QAPIExtSpecial(nHandle, JOB_PAR48IO_IOMODE0_7,0,0);
        nResult=QAPIExtSpecial(nHandle, JOB_PAR48IO_IOMODE8_15,0,0);
        nResult=QAPIExtSpecial(nHandle, JOB_PAR48IO_IOMODE16_23,0,0);
        nResult=QAPIExtSpecial(nHandle, JOB_PAR48IO_IOMODE24_31,1,0);
        nResult=QAPIExtSpecial(nHandle, JOB_PAR48IO_IOMODE32_39,1,0);
        nResult=QAPIExtSpecial(nHandle, JOB_PAR48IO_IOMODE40_47,1,0);

        printf("Counter = %i\n", QAPIExtSpecial(nHandle,JOB_PAR48IO_READCNT,0,0));

        //read channel 0-23 and print to screen
        for(i=0;i<=23;i++)
        {
            nResult=QAPIExtReadDI1(nHandle,i,0);
            printf("channel %i = %i\n", i, nResult );
        }

        //set outputs 24-47 to 0
        for(i=24;i<=47;i++)
        {
            QAPIExtWriteDO1(nHandle,i,0,0);
        }
    }
}
```

```
//      wait a second
Sleep(1000);

//set outputs 24-47 to 1
for(i=24;i<=47;i++)
    {
        QAPIExtWriteDO1(nHandle,i,1,0);
    }

//exit when key is pressed
}
while(!kbhit());

// close the board
QAPIExtCloseCard(nHandle);
}
```

7 Annex

7.1 Frequently asked questions (FAQ)

7.1.1 What kind of problems may occur if the board is running under DOS

Can I use the card with a memory manager? (QEMM 386,EMM386)

Yes, but the use of a memory manager can make your computer or the software running slower.

7.1.2 Problems with boards running under Windows 98/95 and Windows XP/2000/NT

Why is the “Control Panel” board configuration dialog “QLIB” empty?

- There is no QUANCOM PCI board in the system.
- There are no drivers installed for a QUANCOM ISA board.

After installation I get the message “QLIBNDRV.SYS not found“ or “QLIBNDRV.VXD not found“ . What can I do?

- Check that the QLIB is installed properly. For further information about the installation process and the general programming with the QLIB please see the „QLIB“ manual which is included on the installation CD.
- If you use a QUANCOM ISA board check if the drivers for the QUANCOM board are installed.

Why do I get the message "Driver QLIBNDRV.SYS" or "Driver QLIBNDRV.VXD" could not be load?

- Check that the QLIB is installed properly. For further information about the installation process and the general programming with the QLIB please see the „QLIB“ manual which is included on the installation CD.
- The driver for the QUANCOM board was not loaded. (Control Panel => System)

Windows XP/2000/NT: Must the QLIB be installed with Administrator-right?

- Yes, always install the QLIB with administration rights.

Windows XP/2000/NT: Why do I get the message “Driver could not be installed” during the installation?

- Installation was made without administration rights.

Windows XP/2000/NT: Why do I get the message "Driver QLIBNDRV.SYS could not be loaded"?

- Installation of drivers has failed, because the QLIB was not installed with administration-rights.
- QLIB-Software was installed on a network drive. Always install the QLIB on your local drive.

Windows XP/2000/NT: How can I install the driver QLIBNDRV.SYS manually?

If the QLIBNDRV.SYS failed to install it may be necessary to install the driver manually.

Please take the following steps to manually install the driver:

- Search on the installation CD in the directory “Tools” for the tool **instdrv.exe**. With this tool you can install and de-install the driver manually.
- Please call this tool with the following command line parameters:

instdrv qlibndrv d:\directory\qlibndrv.sys .

Replace **d:\directory** with the drive and the file, where the driver qlibndrv.sys is located.

- Go to “Start -> Settings ->Control panel ->(Administrative Tools / Windows 2000 only) -> Drivers” change the start type to “automatic”, then click on the “start” button. For the changes to become active please restart the system.

Why must I restart the driver after every reboot of the computer?

The starting type of the driver is set to “Manual”. If you want you can change this setting on „Automatic“ to start the driver on every reboot of the system.

7.2 Customer Communication and Help



You need help?

If you don't know how to go on during the installation or operation of your QUANCOM board please first consult this user's guide.

! Tip !

In the chapter „Frequently asked questions (FAQ)“ are a lot of answers to questions for known problems. They may help you to solve the problems. On the QUANCOM installation CD you can find an ASCII – Text – file RADME.TXT, which includes changes made after printing this user's manual.

! Important !

If you have further questions please contact our support team. For this case please prepare the following information:

- Exact type of the board.
- Version of the driver
- Version of the QLIB
- Operating system, Hardware equipment and Bus - System
- Name and Version of the program, which reports the failure
- A detailed failure description. To make sure, please try to reproduce the failure, and describe exactly, which steps led to this failure.

Who can you contact?

The QUANCOM internet website
<http://www.quancom.de/>

Per Fax
+49 22 36 / 89 92 - 49

Per E-Mail:
support@quancom.de

Address:
**QUANCOM INFORMATIONSSYSTEME
GmbH
In der Flecht 14
50389 Wesseling**

If you need urgent help call:

QUANCOM Hotline Germany
0 22 36 / 89 92 - 20

Monday-Thursday
from 9:00 to 18:00
Friday
from 9:00 to 17:00

Actual drivers

You can find the newest Version of QUANCOM software on our internet website <http://www.quancom.de>. You can also find a lot of information and „Frequently asked questions (FAQ's)”. Before you contact the QUANCOM support, please check if you are using the newest software version of the QUANCOM software.

Repair

If you are not sure whether your QUANCOM board is defective please call the QUANCOM Hotline:

Tel.: **+49 22 36 / 89 92 – 20**

Before you send us the QUANCOM board to be repaired call:

Tel.: **+49 22 36 / 89 92 – 20**

If you send us your QUANCOM board, please use original package or any other suitable package, to protect the contents against transport damage. You also need to send us a copy of the original bill and the RMA number.

You can shorten the repair time by sending us an exact failure description, so that a faster failure search is possible. Send your QUANCOM board directly to the service department of QUANCOM Informations-systeme GmbH.

7.3 Technical support form

If you have internet access please enter the following URL in your browser: <http://www.quancom.de/quancom/gshop.nsf/techniksupport?OpenForm&eng> else photocopy this form and use the copy of this form as a reference for your current configuration. Complete this form before contacting QUANCOM Informationssysteme GmbH for technical support help and our applications engineers may answer your questions more efficiently. If you are using any other QUANCOM hardware or software products please add them to this configuration form. Include additional pages if necessary.

Name _____

Company _____

Address _____

Phone _____

Fax _____

Computer brand / Processor: _____

Operating system _____

Display adapter _____

Mouse _____

QUANCOM board _____

Other adapters installed _____

Hard disk (capacity, free) _____

The problem is _____

List any error messages _____

The following steps will reproduce the problem

7.4 Hardware and software configuration form

This form allows you to record the settings of your hardware and software. Complete this form each time you revise your software or hardware configuration, and use this form as a reference for your current configuration. Completing this form accurately before contacting QUANCOM Informationssysteme GmbH for technical support helps our applications engineers answer your questions more efficiently.

• QUANCOM Product

Name / Name of board: _____

Interrupt Level: _____

DMA Channel: _____

Base I/O Address: _____

Operating system: _____

• Other information

Computer brand and Model: _____

Processor: _____

Clock Frequency: _____

Type of Video Board Installed: _____

DOS Version: _____

Programming Language: _____

Programming Language Version: _____

• Other Boards in System

Base I/O Address of other Boards: _____

DMA Channels of other Boards: _____

Interrupt Level of other Boards: _____

7.5 Documentation comment form

QUANCOM Informationssysteme GmbH would like you to comment on the documentation supplied with our products. This information helps us to provide you with quality products to meet your needs. Include additional pages if necessary.

Title: **PAR48IO**

Edition date: **11.08.04 10:02**

Name: _____

Company: _____

Address: _____

Phone: _____

Fax: _____

Comment: _____

Mail to: support@quancom.de

Fax to: +49 2236 89 92 49

Address: **QUANCOM Informationssysteme GmbH
In der Flecht 14,
50389 Wesseling**

Germany

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