

# Operating and Installation Manual

for  
the Network Management System

## LinkView 2.1

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## 2.1 Requirements of Your Network Management PC

### Hardware:

- IBM-compatible personal computer 486DX2/66 or higher
- 2 Mbyte space available on hard disk
- a minimum of 8 MByte RAM (16 MByte recommended)
- graphics resolution: 1024 x 768 pixels
- one available COM-port for every Laser-Link to be connected (see chapter 3.1)  
(**Attention!** If simultaneous communication on several COM-ports is desired, the COM-ports are to work at different IRQs).

### Operating System:

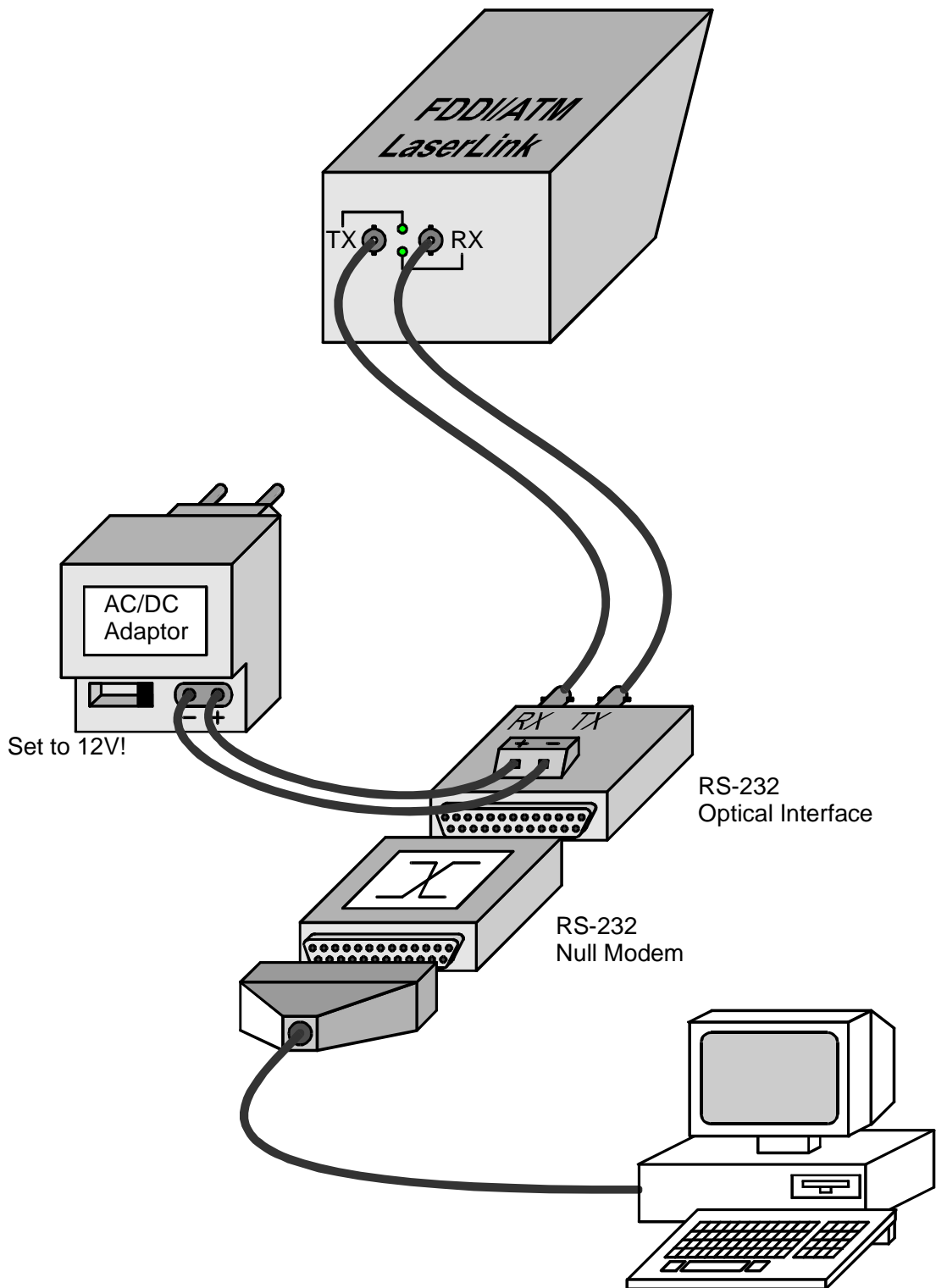
- MS-Windows 3.1 or MS-Windows 95

### 3.1 Variations of Installation

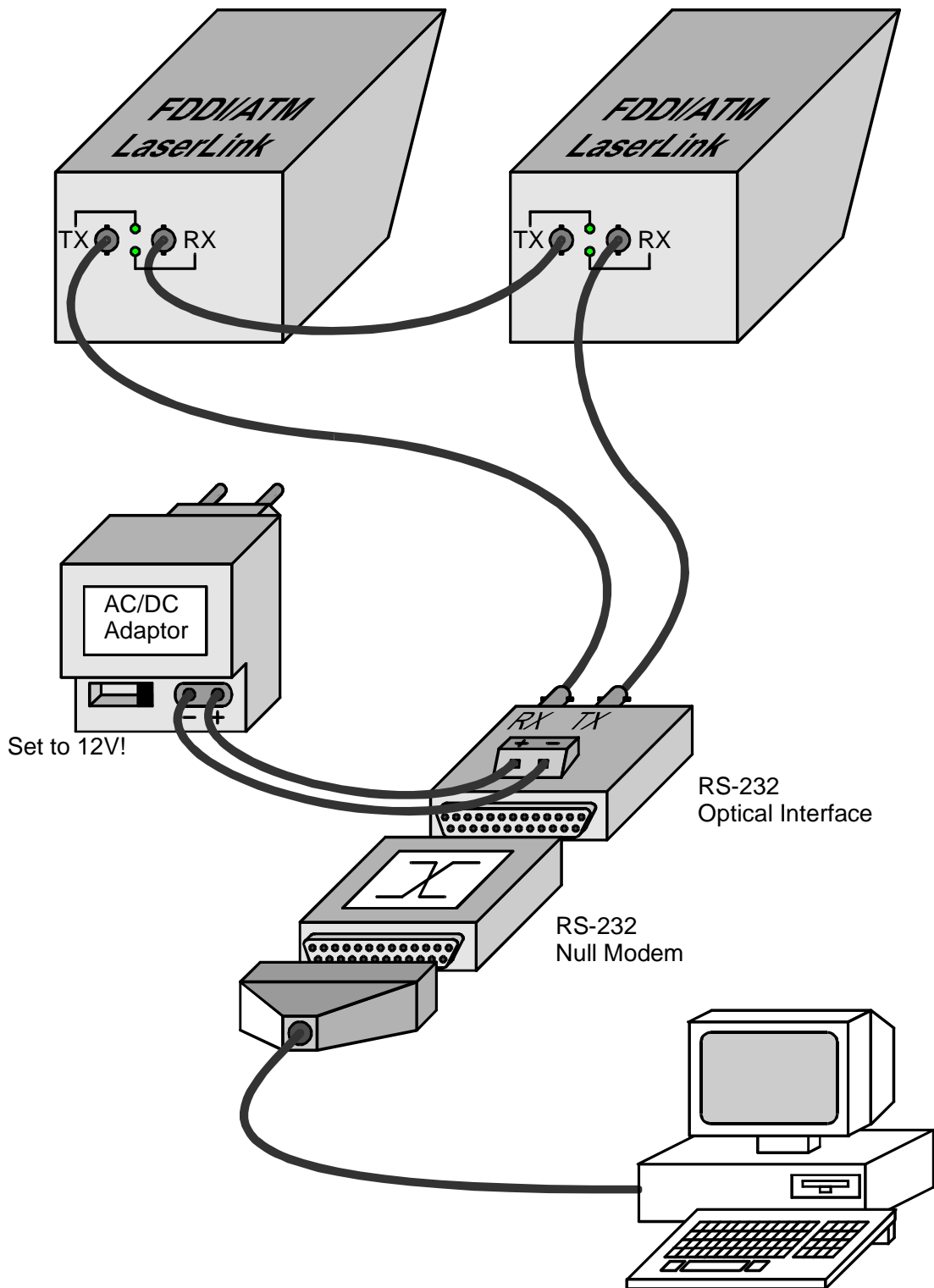
There are several possibilities to connect your devices with the management PC via a V.24-line. First of all it can be decided whether the devices should be connected directly with the management PC or if a modem link should be interposed. The direct connection lends itself to use if the network management system PC is located right next to the device it is to be connected with. The direct connection is the fastest way of getting a connection in the network management system. Telephone charges do not arise (see Picture 1).

If the device cannot be connected directly with the management PC due to too far distances, a connection via data modem is advisable to be used. For that, the device is to be connected with the enclosed modem which is to be linked with an analog telephone connection (see Picture 3). The advantage of a modem link is the possibility of a long-distance maintenance of your devices per data modem by any PC available.

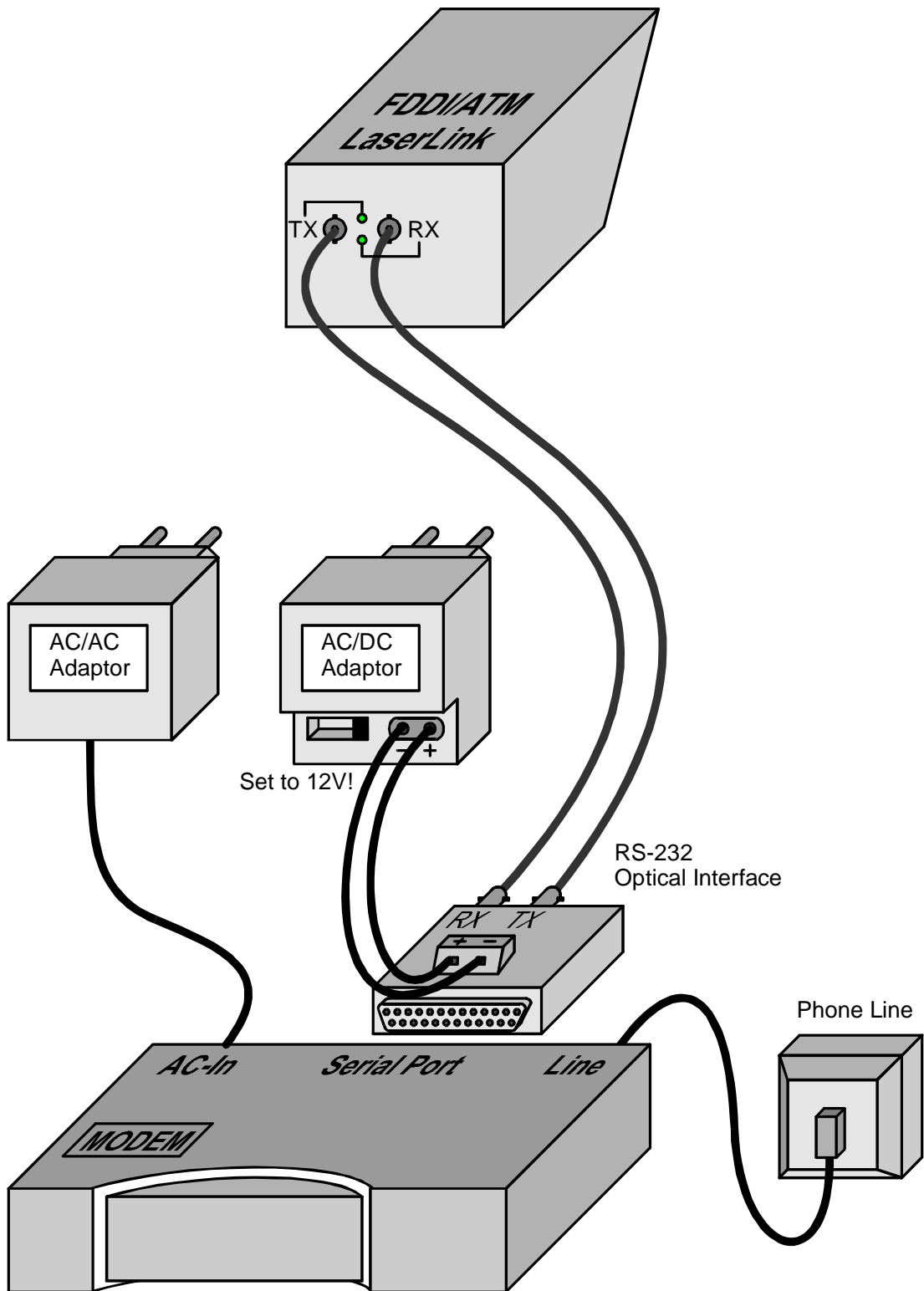
Both the direct connection as well as the data link enable a connection of up to four devices in series at one location (daisy chain). Because of that, only one COM-port, respectively one telephone line is needed for a number of devices (see Picture 2 and Picture 4).



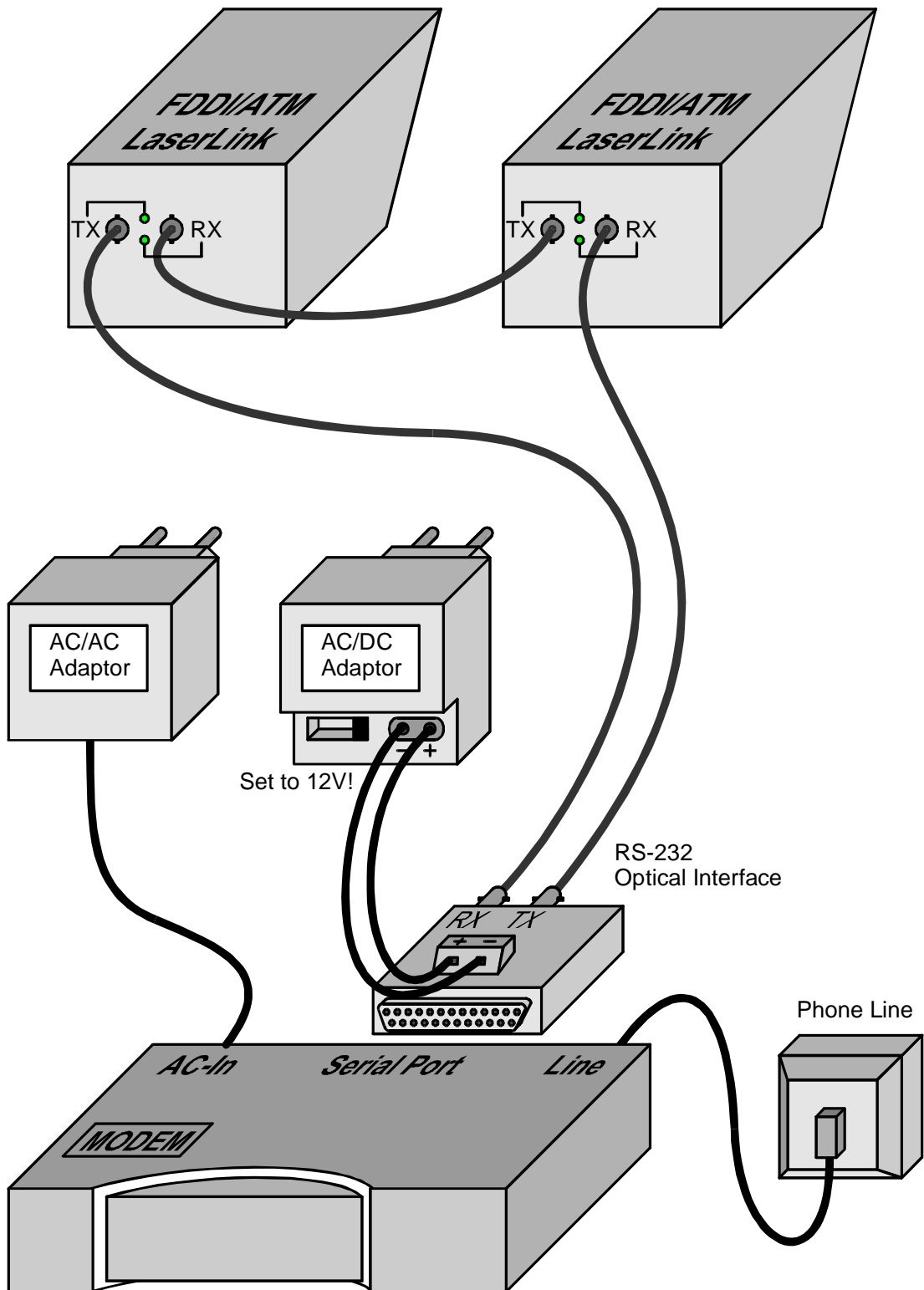
Picture 1: Direct connection of a Laser-/LED Link with the COM-port of a Management-PC.



Picture 2: Direct connection of two or more Laser-/LED Links by using daisy chain with one COM-port of the Management-PC. Only one serial interface is needed to supervise several units simultaneously.



Picture 3: Connection of a Laser-/LED Link with a modem.



Picture 4: Direct connection of two or more Laser-/LEDLinks by using daisy chain with a modem. Only one serial interface is needed to supervise several units simultaneously.

## 3.2 Installation of the System Components

### Preparations at the Laser-/LED Link:

- The plastic cover is to be removed from the Laser-/LED Link's operating panel.
- The fiber for the network management must be put on the ST-connections of the network management port described as „Rx“ and „Tx“ (see Picture 1 - 4)
- Turn on the Laser-/LED Link. The green management Tx-LED (upper LED between the management ST-plugs) is now supposed to light for some seconds, the Rx-LED will light red.
- The plastic cover is now to be fixed onto the operating panel.

### Connection of the RS-232 fiber converter:

- The RS-232 fiber converter must be connected with the AC/DC power supply. For that, the tin-plated wire ends of the power supply cord are to be stuck at the screw clamp of the RS-232 fiber converter . The other end of the cord is to be put into the bushing of the power supply.

**Please note! It is important to pay attention to polarity, otherwise the RS-232 fiber converter might be damaged.**

The voltage selector of the power supply must be adjusted to **12 V**.

Put in the power supply. The green VCC-LED of the RS-232 fiber converter is now supposed to light up. If it is not, the power supply is to be removed immediately and the polarity of the electricity supply and the voltage selector is to be checked.

- Put the network management fibers onto the RS-232 fiber converter. If the Laser-/LED Link is turned on, the yellow RxD-LED of the RS-232 fiber converter is now supposed to light. If that is not the case, the Tx- and Rx fiber of the fiber converter might be mixed up.

### Direct connection of the Laser-/LED Link with a PC:

- If the RS-232 fiber converter is directly connected with the COM-port of the PC, a null modem is to be inserted between fiber converter and PC (see Picture 1, respectively, Picture 3). It can be obtained from computer-specialized dealers.

### Connection of the Laser-/LED Link with a data modem:

- The data modem is to be connected with the AC/DC power supply and turned on. Now the MR-, HS-, TR-, AA- and PWR-LED on the modem are supposed to light up.
- The modem is to be connected with a TAE-socket (N-encoded) by means of the enclosed telephone cord.
- The RS-232 fiber converter is now to be put onto the serial port of the modem. A connection cable is not needed.

Now the hardware of the network management is installed and ready for operation.

Please pay attention to the remarks for the operation of the modems and the RS-232 fiber converters given in the manuals of the respective manufacturer.

### 3.3 The Installation of LinkView 2.1

- Start Windows 3.1, respectively Windows 95
- All applications opened are to be closed.
- The LinkView disk must be put into disk drive A; the program SETUP.EXE is to be started.
- Follow the instructions of the installation program.
- If the error warning

**Warning**

**can not open file A:\DDEML.DL\_ since the destination is already in use**

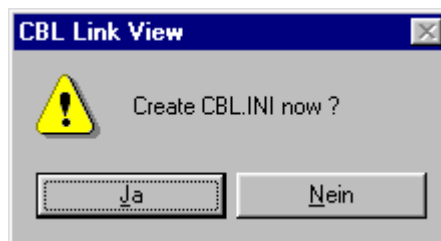
occurs, it is to be confirmed by clicking the **OK** button. This error warning will occur, if the file DDEML.DLL already exists on your PC. The warning can be ignored.

## 4.1 First Steps

The program LINKVIEW.EXE must be started from the file manager.  
 With the first start of the program the following error message is received:

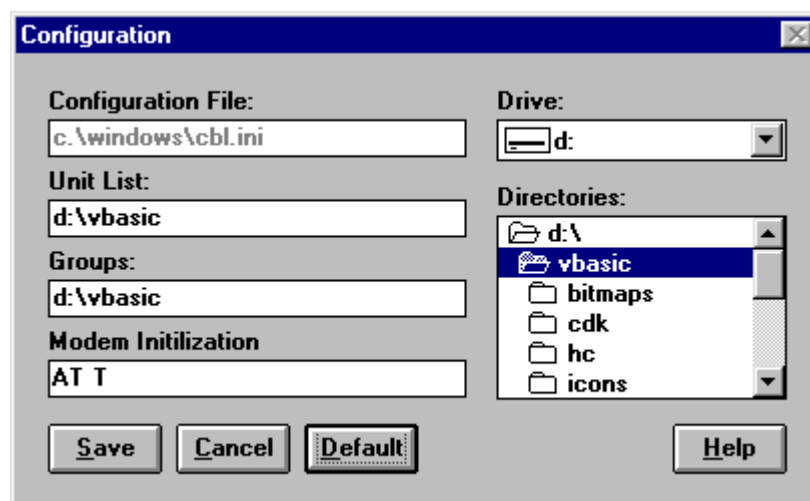


The CBL.INI is the INI-file for LinkView. This file is created after the first start of LinkView. After clicking the **OK** button in the message box the following window is opened:



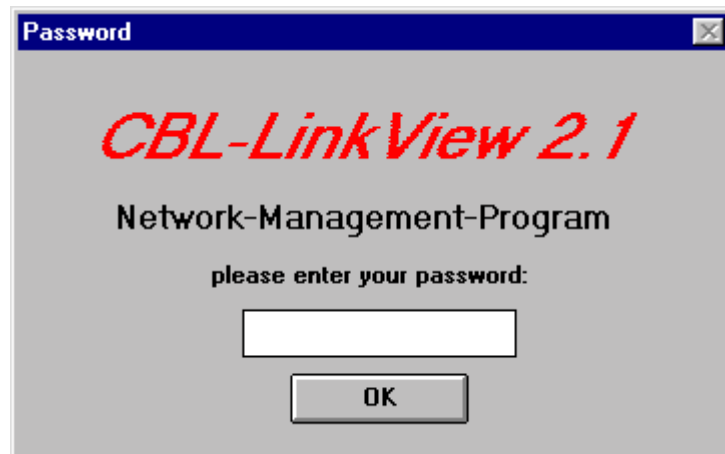
Click the **YES** button to create CBL.INI. For that, the directory C:\WINDOWS must exist on your PC. If it does not exist, it has to be created before creating the CBL.INI file. If you click the **NO** button, no INI-file will be created. In that case the INI-file can also be created or changed from the program later on (menu **SETUP / CONFIGURATION**). Without the INI-file some interruptions in the program flow might occur.

If the **YES** button is clicked in the message box, the program's **CONFIGURATION** menu is opened automatically.



Click the **DEFAULT** button to get standard settings. Now the paths for the unit list and the groups can be adjusted, if desired. The initialization string of the modem should only be changed, if there are difficulties with modem communication. The modem commands and their meaning can be obtained from the manual. The settings are saved in C:\WINDOWS\CBL.INI by clicking the **SAVE** button.

After finishing the program configuration the personal password is to be entered in order to get access to the program.



The default password is: **CBL**.

Please note that the password CBL is written in capital letters. It is recommended to replace the password immediately by another one in order to prevent unauthorized use of the program. The password can be changed in the menu **SETUP / CHANGE PASSWORD**.

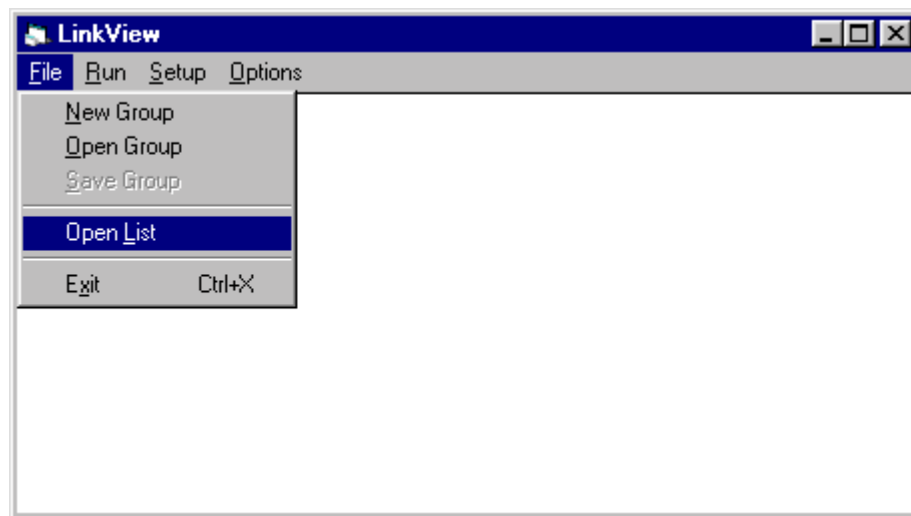
Now the program is configured.

How to create the unit list and the device group is described in the next section.

## 4.2 How to create a unit list

As a source of information the network management program needs a list of all units to be addressed via management. Essentially, this list contains information about the units' locations, connections and the way they can be addressed by the management program.

The menu item **OPEN LIST** in the menu **FILE** is to be selected.



This message box is to be confirmed by clicking the **OK** button.



After that, a unit list without entries is opened.



Click the **NEW** button in order to add a new unit to the list. The interactive window now appearing enables a new unit to be added to the list.

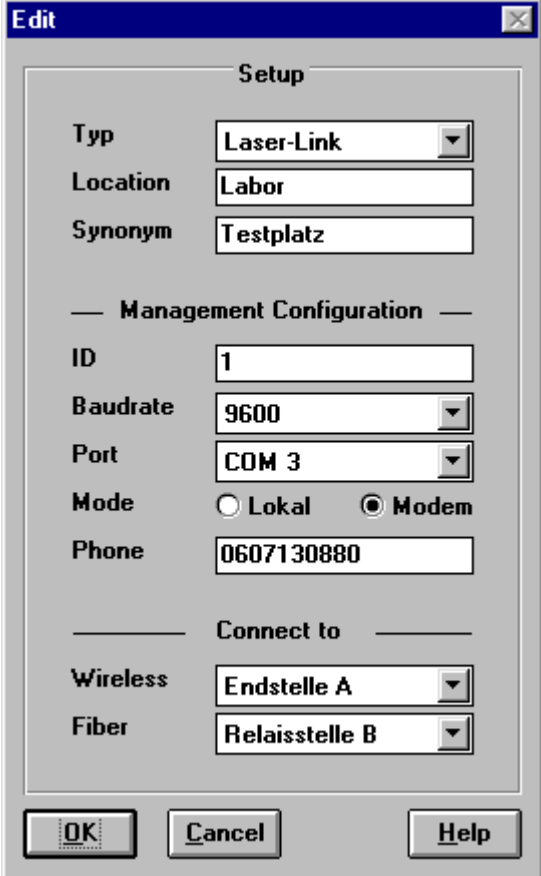
- Type:** Choose the type of the unit. (Laser-Link, LED-Link or MultiMux ET/2E1)
- Location:** Enter the location of the unit (e.g. street, house number or building)
- Synonym:** Synonym for the location (e.g. laboratory, production, warehouse). Please pay attention not to use a synonym twice or more often, as the synonym is an essential criterion for distinguishing the devices. Devices with the same synonym might not be distinguished when running the program.
- ID:** The unit's ID is the address used for the unit by the management. The ID is set by CBL and cannot be changed by the customer. The ID is derived from the unit's serial number; the digits after the hyphen are used. The serial number of the Laser-/LED Link is printed at the side of the unit; the serial number of the MultiMux can be found on the rearside of the unit. The serial numbers are also mentioned on the delivery note. (e.g.: FH 123 456-**78**. In this case, 78 is the unit's ID).

- Baudrate:** The baudrate is the speed of transmission in the network management. At present, it is fixed at 9600bit/s.
- Port:** Here, the serial interface of the management PC the unit can be addressed with is selected. If the unit is connected directly (i.e. without modem) with the PC, the COM-port the unit is linked with is to be selected. If the device is addressed via modem, the COM-port the modem linked with the PC is to be used.
- Mode:** Lokal: The unit is directly connected with the PC.  
Modem: The unit is connected with the PC via modem.
- Phone:** Telephone number the unit can be addressed with (only „modem“ mode).

The entries WIRELESS and FIBER are to be entered later after all units have been fed into the unit list.

Click the **OK** button if all entries are correct, in order to take over the unit into the unit list. The steps starting at page 14 are to be repeated until all units have been fed into the list.

Finally, the connections of the units have to be entered to the list. For that, one device is to be selected from the list (per mouseclick at the corresponding line in the list) and to be confirmed by pressing **EDIT**.



The image shows a Windows-style dialog box titled "Edit". Inside the dialog, there is a section titled "Setup" with the following fields and options:

- Typ:** Laser-Link (dropdown menu)
- Location:** Labor (text field)
- Synonym:** Testplatz (text field)
- Management Configuration:** (Section header)
- ID:** 1 (text field)
- Baudrate:** 9600 (dropdown menu)
- Port:** COM 3 (dropdown menu)
- Mode:**  Lokal  Modem
- Phone:** 0607130880 (text field)
- Connect to:** (Section header)
- Wireless:** Endstelle A (dropdown menu)
- Fiber:** Relaisstelle B (dropdown menu)

At the bottom of the dialog, there are three buttons: **OK**, **Cancel**, and **Help**.

**Wireless:** The counterpart of the Laser-/LED Link is to be selected from the Combo-box „Wireless“.

**Fiber:** The unit that is connected to the fiber data-ports of the selected device is to be selected from the Combo-box „Fiber“. This is only possible, if a CBL unit equipped with a network management is used, which has been added to the unit list (e.g. a MultiMux).

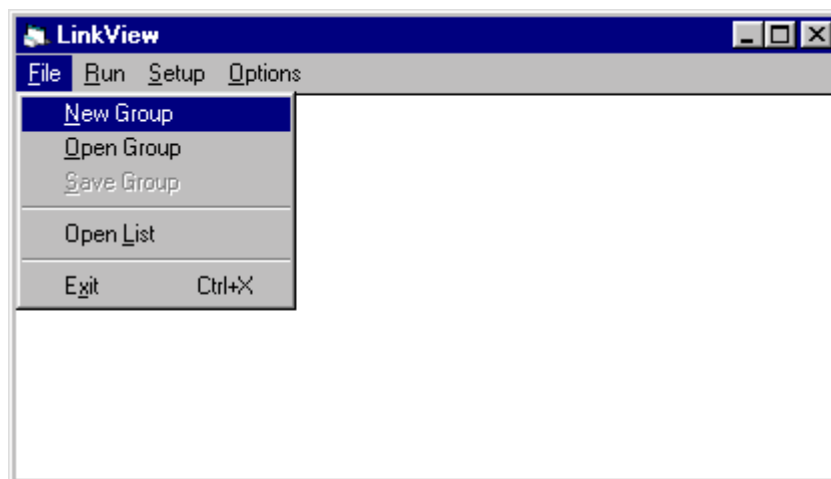
If all entries for this unit are all right, click the **OK** button and add the entries for the remaining devices.

Now the unit list is completed and can be saved as LINKLIST.LST by clicking the **SAVE** button. This name has been set in the program and cannot be changed. The path for the file LINKLIST.LST may be changed in the window „CONFIGURATION“ at any time.

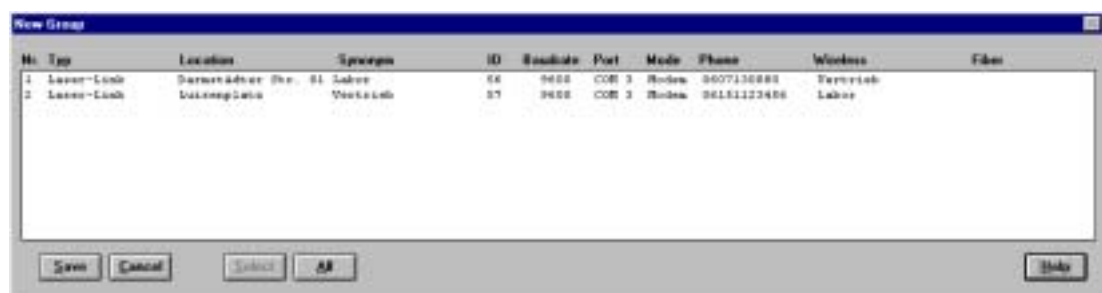
### 4.3 How to create unit groups

LinkView offers the possibility to communicate with several CBL-units at the same time. By that not only the status of each single device can be produced on the monitor, but those of a complete group of devices. Which devices of the unit list are contained in one group can be decided independently. Useful groups might, for example, be all devices which are involved in a connection in the network. Thus, the status of the connection can be realized with a quick look at the monitor. Or all units at one location are integrated in one group. This enables a quick realisation of problems at the location, e.g. fog or power failure. Also one single unit can form its independent group. Besides, one device might be integrated in as many groups as desired.

In order to create a group please select the menu item **NEW GROUP**.

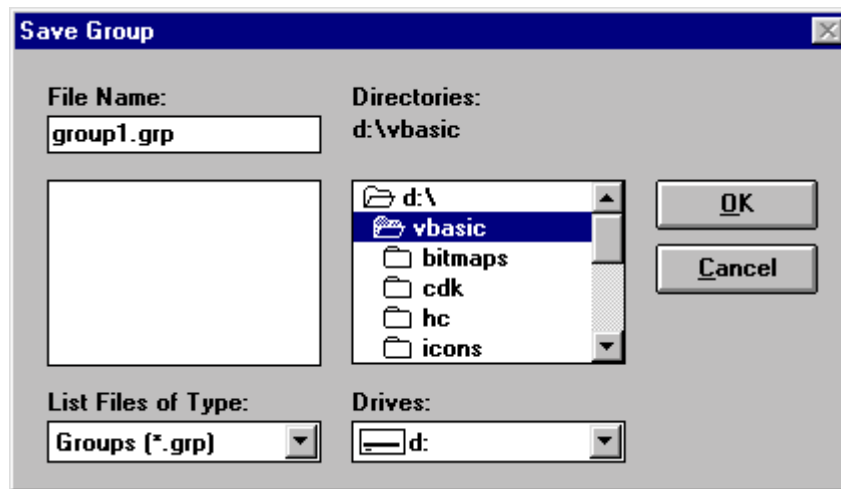


The units which are to be integrated in one group are to be selected from the unit list. If the management system is started for the first time, it is advisable to generate groups initially with only one device each. Thus, the management connections can be tested more easily and possible errors during the installation or in the configuration can be found faster. The selection of the units can be made by a simple mouseclick at the corresponding line in the unit list. If the selection is made, the **SELECT** button is to be clicked. Now only those units are visible that are integrated in the group.



Click the **SAVE** button to save the group.

Attention! The group name must be entered implicitly with the extension „.GRP“.

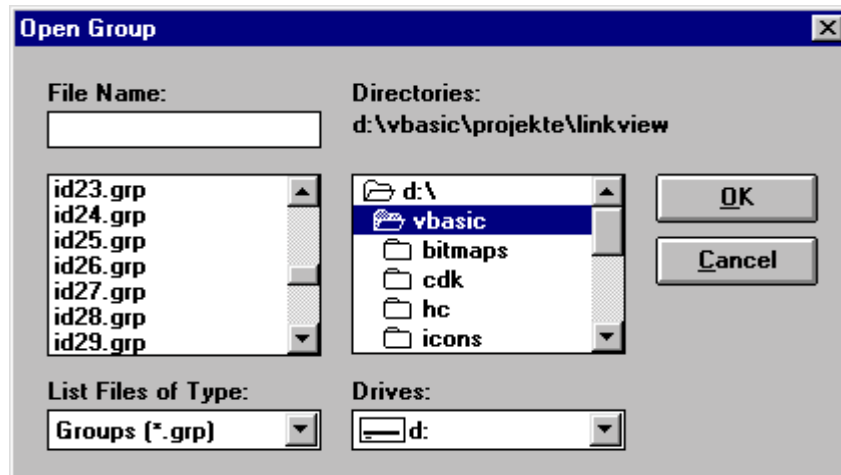


Afterwards, click the **OK** button.

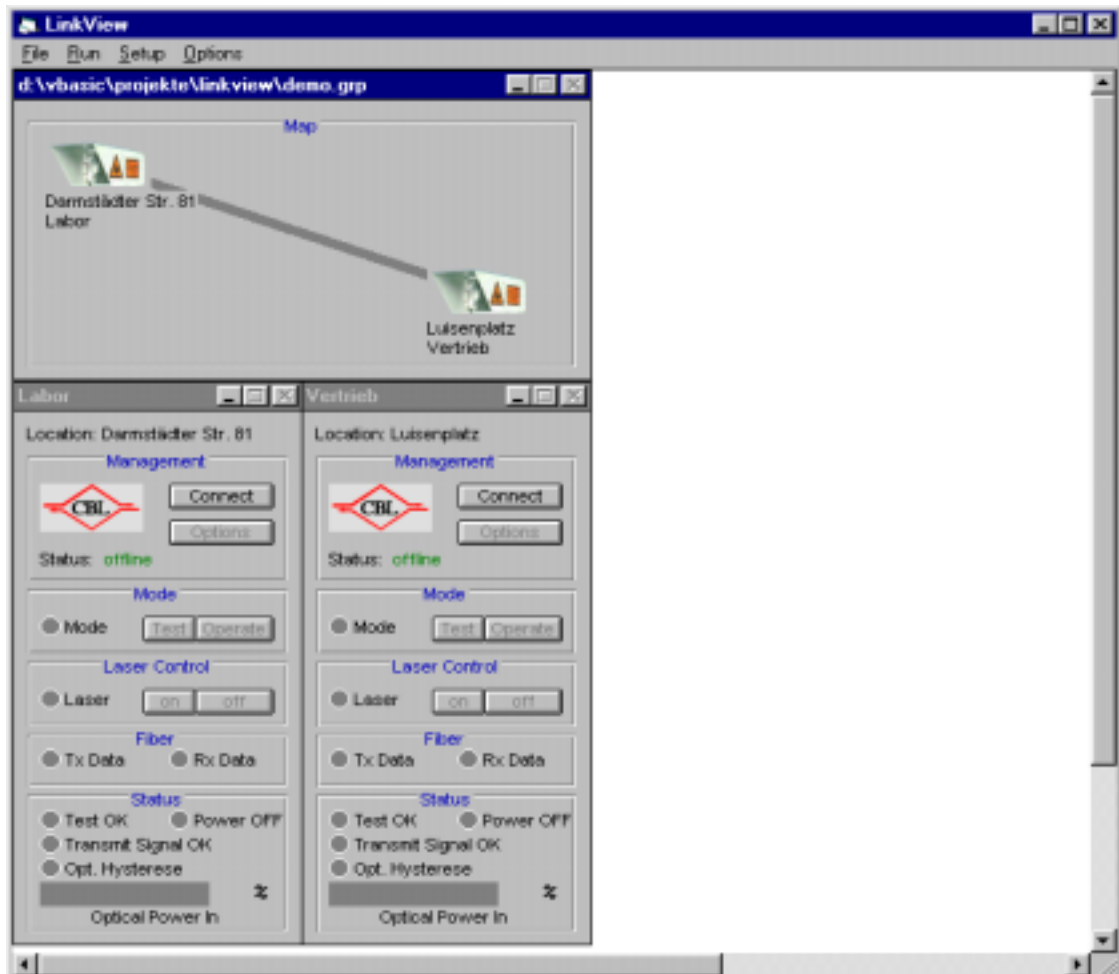
The network management system is now ready for operation.

## 4.4 Connection

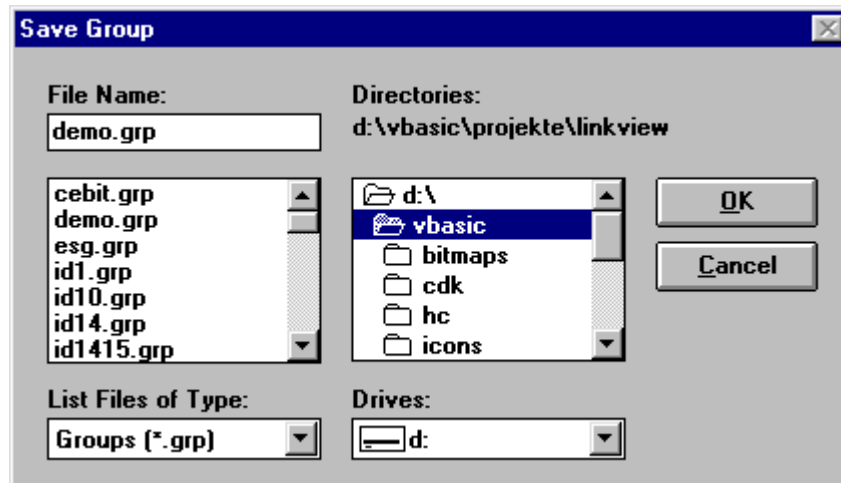
If the unit list has been completed and the groups have been installed, the connection can be started. The menu **RUN** is to be selected.



One group is to be selected and confirmed by clicking the **OK** button. The window of the units contained in the group and the map will be loaded automatically..



Every unit is indicated as an icon. Below the icon, the location of the particular unit is noted. The icons can be moved by means of the mouse within the map (move mouse indicator onto the icon, press left mouse button, keep it pressed, move icon with the mouse, release the button). If an ideal arrangement has been found, it can be saved by selecting **FILE / SAVE GROUP** in the menu.



Click the **OK** button to save the arrangement of the icons.

If there are several icons in the map, they are linked with grey lines. These lines symbolize links between the units, that have been entered in the unit list. A wide line stands for an optical link, a thin line for a fiber-link. The lines are divided in the middle. Each half on a line stands for the direction of transmission to the unit the line ends. According to the status of the connection the line adapts different colours:

Grey: There is no management connection to the unit

Green: The connection is ok.

Red: The connection is interrupted.

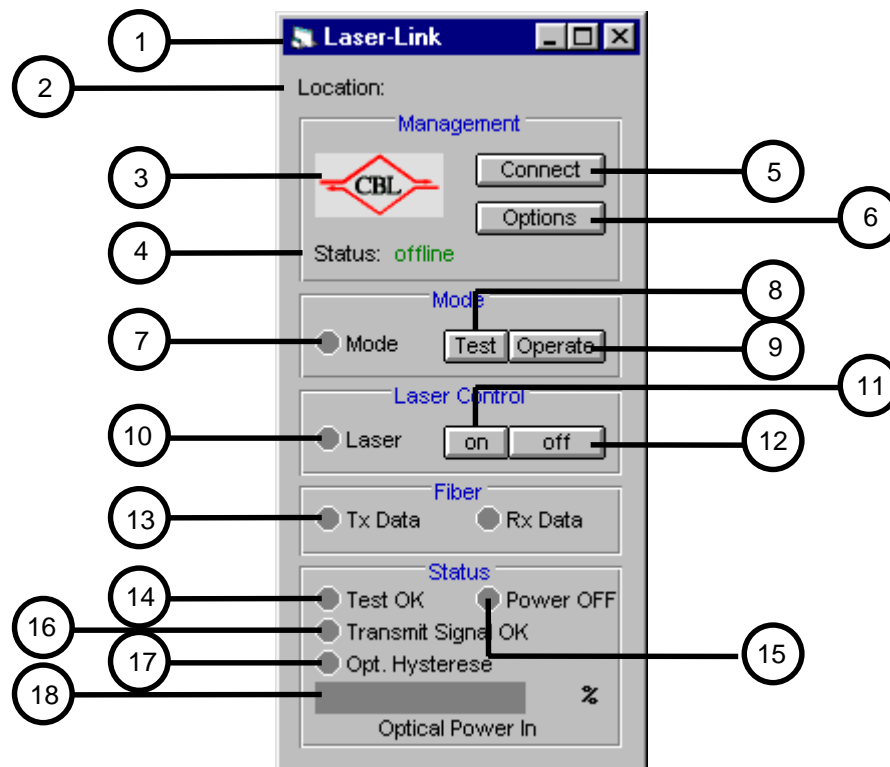
The window below the map enables each unit of a group to be controlled. Here, all information on the unit is indicated. Furthermore several functions of the device can be remote-controlled.

**Attention! Some commands lead to an interruption of the data connection.**

**Therefore, do familiarize with the function of the commands before using them (see also the manual of the unit).**

Click the **CONNECT** button in order to a connection with the unit.

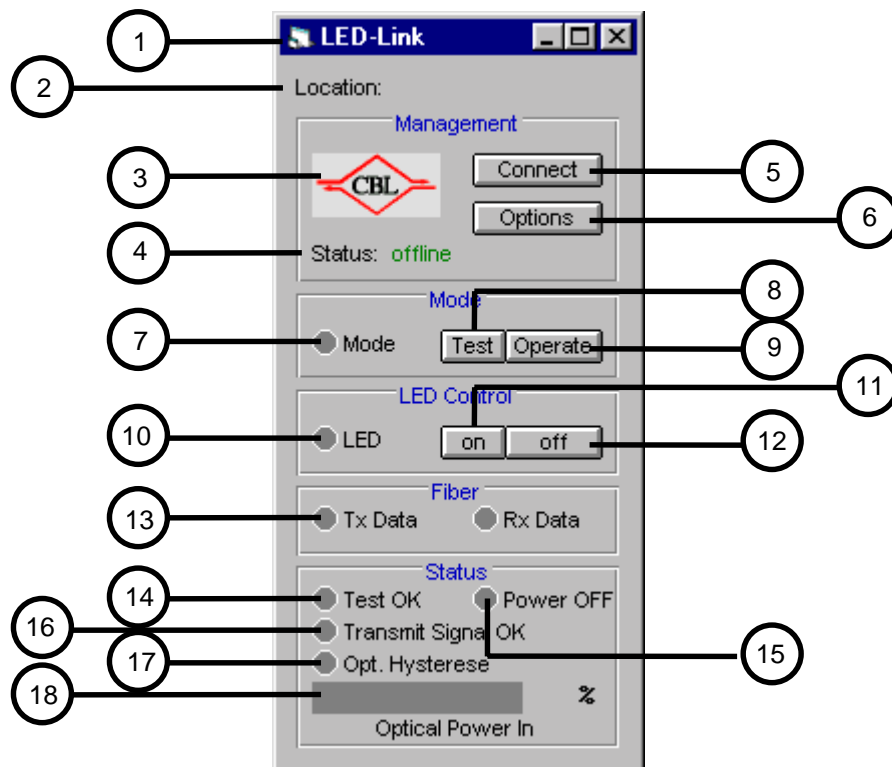
### 4.5.1 The Laser-Link Window



- (1)                    Synonym
  - (2)                    Location
  - (3)                    The CBL logo starts turning as soon as a connection to the Laser-Link is made.
  - (4)                    Messages of LinkView during the connection is being build up.
  - (5)                    Clicking this button connects / disconnects the management.
- CONNECT:**  
Builds up a connection to the Laser-Link. If the Laser-Link is connected via a data modem, the modem connection is made firstly. As soon as the connection between the network management computer and the Laser-Link is made, the CBL logo starts turning. This indicates an existing network management connection.
- DISCONNECT:**  
Ends the connections between the computer and the Laser-Link. The CBL logo stops turning and the label of the button switches over to CONNECT again. If the connection cannot the interrupted due to failure in communication, it can be disconnected by clicking the DISCONNECT button (the COM-port of the PC will be closed). If the connection to the Laser-Link is made via modem, please pay attention that the modem hangs up after the connection is finished.

- (6) indicates further data to the Laser-Link
- (7) Indication of the operating mode
  - Red: Test ON
  - Green: In operation
- (8) TEST mode
  - By clicking this button the Laser-Link is switched to the test mode.
- (9) OPERATE mode
  - By clicking this button the Laser-Link is switched to the operation mode.
- (10) Laser control light
  - Green: Laser ON (lasercurrent > 5 mA)
  - Red: Laser OFF (lasercurrent < 5 mA)
- (11) Laser ON.
  - The Laser can be enabled by clicking this button. The Laser will only be enabled, if there is a valid data signla at the Rx-Data or if the device is run in the test mode.
- (12) Laser OFF.
  - The Laser can be disabled by clicking this button.
- (13) Tx-Data green: Data are sent through the fiber
  - Tx-Data grey: No data are sent through the fiber
  - Rx-Data green: Data are being received through the fiber
  - Rx-Data grey: No data are received through the fiber
- (14) Display green: TEST mode is O.K.
- (15) Display green: Power ON - voltage is O.K.
  - Display red: Power fail - one of the operating voltages is beyond the permitted values
- (16) Display green: Laser is sending data
- (17) Display red: opt. hysteresis ON
  - The lower value of the hysteresis is fallen short of. The Lx-Data will be disconnected. The Tx-Data will be switched on only if the upper value of the hysteresis is exceeded. The values can be adjusted in the OPTION window.
- (18) Display for optical power in, lasercurrent and the temperature in the Laser-Link. The display can be switched by clicking in the bar.

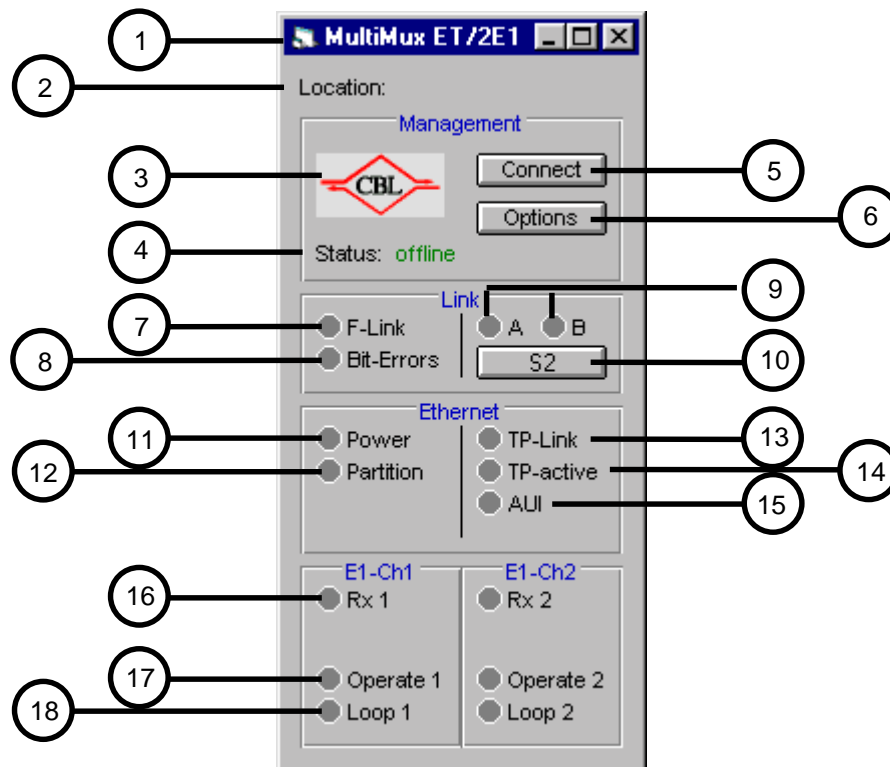
## 4.5.2 The LED-Link Window



- (1)                    Synonym
  - (2)                    Location
  - (3)                    The CBL logo starts turning as soon as a connection to the LED-Link is made.
  - (4)                    Messages of LinkView during the connection is being build up.
  - (5)                    Clicking this button connects / disconnects the management.
- CONNECT:**  
Builds up a connection to the LED-Link. If the LED-Link is connected via a data modem, the modem connection is made firstly. As soon as the connection between the network management computer and the LED-Link is made, the CBL logo starts turning. This indicates an existing network management connection.
- DISCONNECT:**  
Ends the connections between the computer and the LED-Link. The CBL logo stops turning and the label of the button switches over to CONNECT again. If the connection cannot the interrupted due to failure in communication, it can be disconnected by clicking the DISCONNECT button (the COM-port of the PC will be closed). If the connection to the LED-Link is made via modem, please pay attention that the modem hangs up after the connection is finished.

- (6) indicates further data to the LED-Link
- (7) Indication of the operating mode
  - Red: Test ON
  - Green: In operation
- (8) TEST mode
  - By clicking this button the LED-Link is switched to the test mode.
- (9) OPERATE mode
  - By clicking this button the LED-Link is switched to the operation mode.
- (10) Transmitter-LED control light
  - Green: Transmitter-LEDs ON
  - Red: Transmitter-LEDs OFF
- (11) Transmitter-LEDs ON.
  - The LEDs can be enabled by clicking this button. The LEDs will only be enabled, if there is a valid data signla at the Rx-Data or if the device is run in the test mode.
- (12) Transmitter-LEDs OFF.
- (13) Tx-Data green: Data are sent through the fiber
  - Tx-Data grey: No data are sent through the fiber
  - Rx-Data green: Data are being received through the fiber
  - Rx-Data grey: No data are received through the fiber
- (14) Display green: TEST mode is O.K.
- (15) Display green: Power ON - voltage is O.K.
  - Display red: Power fail - one of the operating voltages is beyond the permitted values
- (16) Display green: LEDs are sending data
- (17) Display red: opt. hysteresis ON
  - The lower value of the hysteresis is fallen short of. The Tx-Data will be disconnected. The Tx-Data will be switched on only if the upper value of the hysteresis is exceeded. The values can be adjusted in the OPTION window.
- (18) Display for optical power in and the temperature in the LED-Link. The display can be switched by clicking in the bar.

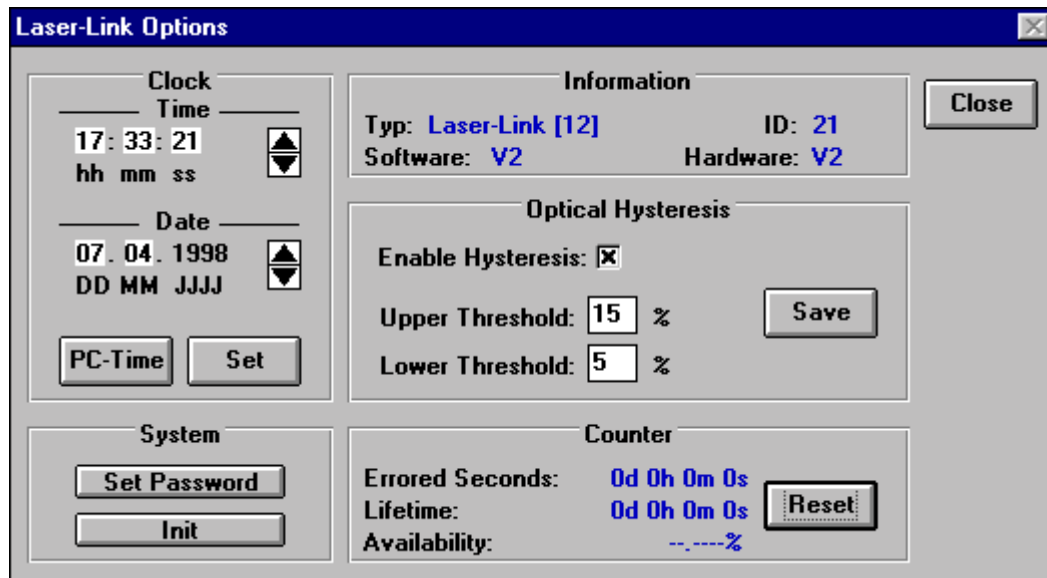
### 4.5.3 The MultiMux ET/2E1 Window



- (1)                    Synonym
  - (2)                    Location
  - (3)                    The CBL logo starts turning as soon as a connection to the MultiMux is made.
  - (4)                    Messages of LinkView during the connection is being build up.
  - (5)                    Clicking this button connects / disconnects the management.
- CONNECT:**  
Builds up a connection to the MultiMux. If the MultiMux is connected via a data modem, the modem connection is made firstly. As soon as the connection between the network management computer and the MultiMux is made, the CBL logo starts turning. This indicates an existing network management connection.
- DISCONNECT:**  
Ends the connections between the computer and the MultiMux. The CBL logo stops turning and the label of the button switches over to CONNECT again. If the connection cannot the interrupted due to failure in communication, it can be disconnected by clicking the DISCONNECT button (the COM-port of the PC will be closed). If the connection to the MultiMux is made via modem, please pay attention that the modem hangs up after the connection is finished.

- (6) indicates further data to the MultiMux
- (7) Display green: F-Link for the fiber connection
- (8) Display red: there are biterrors in the fiber connection
- (9) for future extensions
- (10) for future extensions
- (11) Display green: Power ON - voltage is O.K.  
Display red: Power fail - one of the operating voltages is beyond the permitted values
- (12) Indication of the repeater in the MultiMux
- (13) Display green: link signal at the TP-port available
- (14) Display green: TP-port active
- (15) Display green: AUI-port active
- (16) Display green: a valid E1 signal on Ch1 (Ch2)
- (17) Display green: the port is in operation mode OPERATE
- (18) Display red: the port is looped in the device

## 4.6 The Option Window



The option window makes it possible to query and set further data and adjustments of the Laser-Link, LED-Link and MultiMux. When loading the option window the current figures of the unit are polled and indicated. In particular there are:

- System Time:** Real time clock in the unit  
Time polling:  
 Is done automatically when loading the option window.  
Time adjustment:  
 There are two possibilities zu adjust the time:  
 1. By clicking **PC-TIME** and then the **SET** button the PC's time will be adapted.  
 2. Click at the hour / minute display and adjust the time with the arrow keys. The **SET** button is to be clicked to adapt the time to the unit.
- System Date:** Calendar in the unit.  
 Query and setting according to system time. It is not possible to set the year; it will be added by the computer.
- Opt. Hysteresis:** (not available in MultiMux)  
 This is the hysteresis for turning on / turning off the sender (Tx-Data fiber) depending on the optical receiving level. If the value of the optical receiving level falls below the lower threshold, the sender of the Tx-Data fiber will be disabled. Only if the optical receiving level reaches the upper threshold again, the TX-Data fiber sender will be turned on again.

The hysteresis takes care that the optical link isn't booted up - and the back-up disconnection isn't made too early after a failure of the line (e.g. due to thick fog).

Lower Threshold:

If the optical receiving level falls below the value set here, the sender of the Tx-Data fiber will be disabled. The value for the lower threshold should be quite low in order to keep the dynamic of the optical link. The guide number for the lower threshold is 5 %.

The value indicated will only be saved, if the option window is closed by clicking the **SAVE** button.

Upper Threshold:

If the optical receiving level exceeds the value set here, the sender of the Tx-Data LWL will be connected again. The guide number for the upper threshold is 15 %.

The value indicated will only be saved, if the option window is closed by clicking the **SAVE** button.

Enable Hysteresis:

If this box is marked, the hysteresis function will be activated. This function is active in the factory setting.

A change in the check box will only be saved, if the option window is closed by clicking the **SAVE** button.

**Information:**

Type:

The product group the unit belongs to.

ID:

Network management address.

Software:

Version number of the microcontroller software.

Hardware:

Version number of the network management hardware.

**Counter:**

The network management has got two 32Bit counters. One counter counts the lifetime, the second counter the time of disconnections. Both counters can be deleted by clicking the **RESET** button.

Error Seconds:

Indicates the total time of interruption of the connection since the last reset of the counter.

Lifetime:

Indicates the lifetime of the unit since the last reset of the counter.

### Availability:

Indicates the availability of the connection in % since the last reset of the counter. The availability can be calculated as follows:

$$\text{Availability} = (\text{Lifetime} - \text{Error Seconds}) / \text{Lifetime} * 100$$

The availability will be rounded to four digits after the comma.

### **System Init.:**

#### Laser- and LED-Link:

The network management resets all settings.

The device will be turned into the OPERATE mode (except for the switch on the front being in TEST mode) and the Laser will be enabled (only Laser-Link). The LIFETIME and the ERROR SECONDS counter will be deleted.

All further data saved will be preserved. One exception: Devices of the software version V1. With these devices data of the alarm table and the statistics will get lost.

#### MultiMux:

Resets the network management in the device.

Lifetime and error second counter will be deleted. All further data saved will be preserved.

**Set Password:** see section 4.7

## 4.7 Password

Essential control functions in the devices are saved against unauthorized access by a password. They are specified hereafter:

### Laser-Link:

- Switching from TEST to OPERATION
- Switching the laser ON/OFF
- Setting of the optical hysteresis
- Changing the passwords
- Reset of the management

### LED-Link:

- Switching from TEST to OPERATION
- Switching the transmitter-LEDs ON/OFF
- Setting of the optical hysteresis
- Changing the passwords
- Reset of the management

### MultiMux ET/2E1:

- Changing the passwords
- Reset of the management

Before the corresponding function can be executed you will be asked to enter the password. The default password is: **CBL**.



There are three attempts in order to enter the correct password. When entering a wrong password for the third time access to all functions of the unit protected by the password will be denied. This blockade can only be undone by pressing the **PASSWORD RESET** button at the unit. After that, the default password CBL is valid again.

The password can be changed in the OPTION windows by clicking the button **SET PASSWORD**.



A screenshot of a 'Set Password' dialog box. The dialog has a blue title bar with the text 'Set Password' and a close button. The main area is light gray and contains three text input fields. The first field is labeled 'enter old password' and contains three asterisks. The second field is labeled 'enter new password' and contains six asterisks. The third field is labeled 're-enter new password' and contains six asterisks. At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

The old password is to be entered in the first line; in the following line the new password is to be entered. If both new passwords correspond, this will be accepted as new password.

## 4.8 Alarmtable

Download:  
Date: 09.04.98  
Time: 10:21:17

Location: Labor  
Typ: Laser-Link  
ID: 21  
Hardware: V2  
Software: V2

Last Reset of Alarmtable:  
Date: 09.04.1998  
Time: 09:49

Number of alarms: 2  
Availability: 99,8182%

Pos.	Date	Time	End	Time
001	09.04.1998	09:50:13	09.04.1998	09:50:14
002	09.04.1998	09:57:37	09.04.1998	09:57:38

0% 50% 100%

Download Delete Save Cancel

Every Laser-/LED-Link contains an alarmtable in which the failures of connection are saved. There is a failure of connection if the optical receiving level falls so far below, that the squelch of the Laser-/LED-Link reacts or if the optical receiving level is less than the lower threshold of the hysteresis. With the MultiMux there the failure is an interruption of the fiber connection.

- (1) The first two lines of the alarmtable contain the time and date of the query time. Time and date are taken over from the PC clock.
- (2) After that, the location of the unit, the type, the network management address, hardware and software version.
- (3) Time of the last reset of the alarmtable (only with units with the software version V2 or higher)
- (4) The number of alarm entries and availability follow.
- (5) Finally there are the alarm entries in chronological order. Up to 680 entries can be saved in the alarmtable.

### How to download the alarmtable:

From the menu **OPTIONS / ALARMTABLE** the unit the alarm table is to be read must be selected. In the alarm table window the **DOWNLOAD** button is to be pressed. The alarm table of the Laser-Link will now be booted into the memory of the PC. This procedure can be stopped by clicking the **STOP** button at any time. The bar indicates the per cent rate of the entries already read.

### How to save the alarmtable:

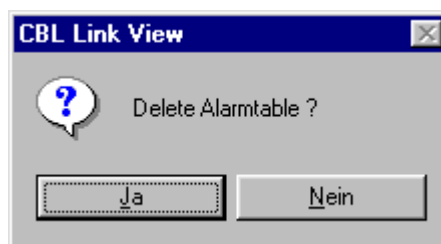
After the download the alarm table can be saved for printing or further processing. For that, the **SAVE** button is to be pressed. Enter a name for the file and click the **OK** button.

### How to open and print saved alarmtables:

An alarm table that has been saved can be opened and printed by means of a text editor or a word processing program. It is advisable to use a font with fixed width for the characters (e.g. COURIER).

### How to delete the alarmtable:

As the memory in the units is limited to 680 entries, it is advisable to delete the memory in the unit after saving it in the PC. For that, the **DELETE** button in the alarm window is to be pressed.



The safety request is to be confirmed by clicking **YES**.

## Example of an alarmtable:

CBL-GmbH  
Darmstädter Str. 81  
64839 Münster  
Tel: +49-6071-3088-0  
Fax: +49-6071-3088-1  
e-mail: info@cbl.de  
Internet: Www.cbl.de

\*\*\*\*\* Alarmtable \*\*\*\*\*

Download:  
Date: 09.04.98  
Time: 10:49:11

Location: Labor  
Typ: Laser-Link  
ID: 21  
Hardware: V2  
Software: V2

Last Reset of Alarmtable:  
Date: 09.04.1998  
Time: 09:49

Number of alarms: 2  
Availability: 99,9026%

Pos.	Begin		End	
	Date	Time	Date	Time
001	09.04.1998	09:50:13	09.04.1998	09:50:14
002	09.04.1998	09:57:37	09.04.1998	09:57:38

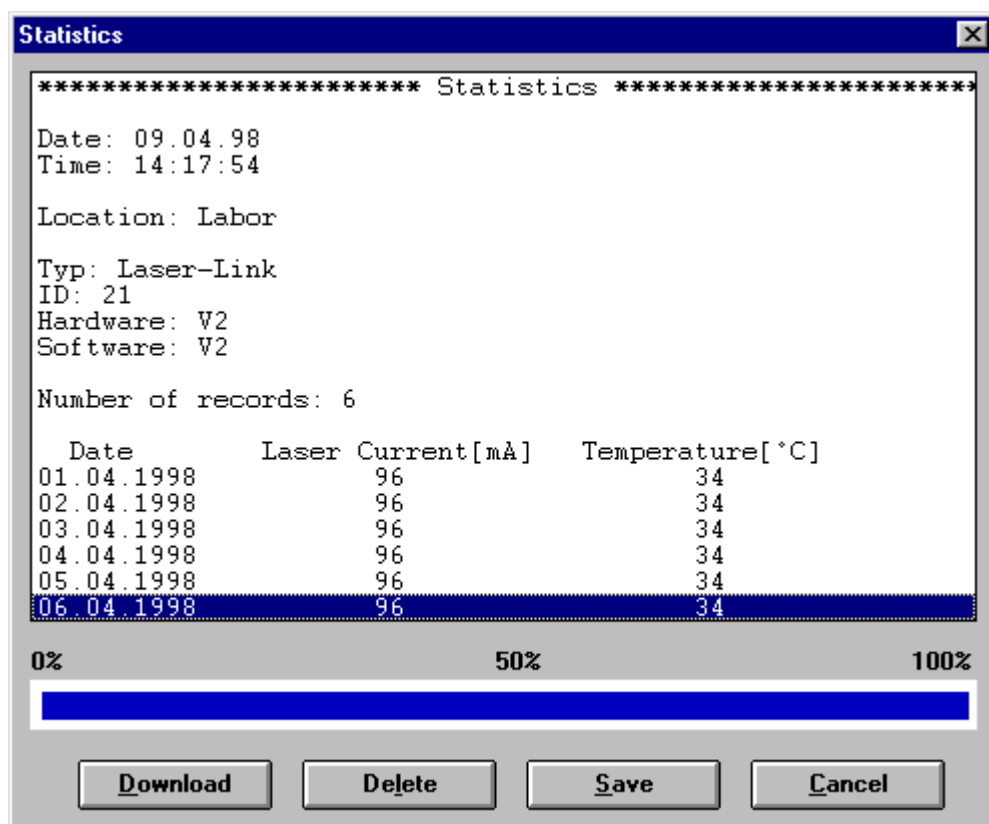
## 4.9 Long-term Statistics (only Laser-Link)

A long-term measuring program in the Laser-Link records the unit's temperature and the lasercurrent. These values are recorded and saved at 12 o'clock every day. The values provide information on the stage of life of the laser.

Possible failures of the Laser may be foreseen and prevented by preventive maintenance.

The long-term measuring program enables 366 values to be saved. It is advisable to read out and save the values every six months. The memory is to be deleted after the values have been read out in order to be released for new measurements.

The operation of the statistics window is identical with the one of the alarmtable.



Example for a long-term statistics:

CBL-GmbH  
Darmstädter Str. 81  
64839 Münster  
Tel: +49-6071-3088-0  
Fax: +49-6071-3088-1  
e-mail: Info@cbl.de  
Internet: WWW.CBL.de

\*\*\*\*\* Statistics \*\*\*\*\*

Date: 10.10.1997  
Time: 12:07:28

Location: Labor  
Typ: Laser-Link  
ID: 1  
Hardware: V2  
Software: V2

Number of records: 14

Date	Lasercurrent[mA]	Temperature[°C]
10.10.1997	76	24
11.10.1997	76	24
12.10.1997	76	24
13.10.1997	76	24
14.10.1997	76	24
15.10.1997	76	24
16.10.1997	76	24
17.10.1997	76	24
18.10.1997	76	24
19.10.1997	76	24
20.10.1997	76	24
21.10.1997	76	24
22.10.1997	76	24
23.10.1997	76	24