



# ***ELSA MicroLink™ 56k Internet***

## **User Manual**

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# Preface

Thank you for placing your trust in this ELSA product.

With the *ELSA MicroLink 56k Internet*, you will be able to access the Internet and take advantage of a variety of other data communications applications by using the included software package.

Exacting manufacturing standards and stringent quality control are the basis for high product standards and consistent quality to ensure your fullest satisfaction with this modem.

## Changes to this manual

ELSA products are characterized by ongoing further development. It is therefore possible that the information printed in this manual is not current in all points.

*Our online services (Internet server [www.elsa.com](http://www.elsa.com)) are available to you around the clock should you have any queries regarding the topics discussed in this manual or require any further support. In the support file section under 'Know-How', you can find answers to frequently asked questions (FAQs). The KnowledgeBase also contains a large pool of information. Current drivers, firmware, tools and manuals can be downloaded at any time.*



## Package contents

Please ensure that the delivery is complete before beginning with the installation of your modem:

- *ELSA MicroLink 56k Internet*
- Power adapter
- Telephone line connection cable
- Modem connector cable (V.24/RS232 cable)
- CD with application software
- Documentation

ELSA reserves the right to change the package contents without prior notice.

## Online documentation

*The ELSA MicroLink 56k Internet contains extensive electronic documentation in addition to the printed handbooks. This provides information on topics such as the installation of access software, the online services and other support notes. This*



*information has been stored in HTML or PDF format. A browser (e.g. Netscape Navigator or Microsoft Internet Explorer) is required for reading and printing HTML files. The ACROBAT Reader program is required to read and print PDF files. It can also be found on the included CD and may be installed using the CD setup program.*

*If the CD setup program does not automatically start when you insert the CD, simply double-click 'autorun.exe' in the root folder of the CD.*

To read the online documentation, proceed as follows:

- ① Insert the included *ELSA MicroLink 56k Internet* CD in your CD drive. The welcome screen will open automatically.
- ② Click on **Online Manual** to select the desired online documentation.

## The ELSA homepage on the Internet

The ELSA homepage is a service for our customers and others interested in ELSA products, which include modems, ISDN modems, graphics boards and monitors. The ELSA homepage provides continuously updated product information pertaining to your *ELSA MicroLink 56k Internet* and other ELSA products. You can also find answers to frequently asked questions (FAQs), a wealth of tips and tricks and selected links to other WWW pages. What's more, our page provides access to selected search engines.

### How to make the ELSA homepage your default homepage:

You can set your browser to load ELSA's homepage as soon as you connect to the Internet. The following explains how you can access the ELSA homepage using either Netscape Navigator or Microsoft Internet Explorer as your browser:

#### Netscape Navigator

- ① Start Netscape Navigator and select **Options ► General Preferences ► General view**.
- ② Under **Start with:** enter **ELSA's homepage <http://www.elsa.com>**.
- ③ Then add a check to **Homepage Location:** and confirm with **OK**.

#### Microsoft Internet Explorer

- ① Start Microsoft Internet Explorer and select **View ► Options ► Navigation**.
- ② Under **Homepage** enter the ELSA homepage **<http://www.elsa.com>** and confirm with **OK**.

Now you will automatically access ELSA's homepage whenever you connect to the Internet.



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# Introduction

This chapter is intended to help you activate your *ELSA MicroLink* modem as quickly as possible. It contains a brief description of the installation under the Windows 95, Windows 98, Windows NT 4.0 and Windows 2000 operating systems.



*The online documentation on the modem also contains detailed information on the configuration of the included software.*

*If the CD setup program does not automatically start when you insert the CD, simply double-click 'autorun.exe' in the root folder of the CD.*



*For safety reasons, use the supplied AC adapter only!*

## Consumer information and FCC requirements

- The Federal Communications Commission (FCC) has established rules which permit this device to be directly connected to the telephone network. Standardized jacks are used for these connections. This equipment should not be used on party lines or coin lines.
- If this device is malfunctioning, it may also be causing harm to the telephone network; this device should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.
- The telephone company may make changes in its technical operations and procedures; if such changes affect compatibility or use of this device, the telephone company is required to give adequate notice of the changes.
- If the telephone company requests information on what equipment is connected to their lines, inform them of:
  - a) The telephone number that this unit is connected to
  - b) The ringer equivalence number
  - c) The USOC jack required
  - d) The FCC Registration Number

Items (b) and (c) are indicated on the label. The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of RENs of all devices on any one line should not exceed (5.0). If too many devices are attached, they may not ring properly.



## **Service requirements**

In the event of Equipment malfunction, all repairs should be performed by our Company or an authorized agent. It is the responsibility of users requiring services to report the need for service to our company or to one of our authorized agents.

Service can be obtained at:

ELSA Inc.,

1630 Zanker Road

San Jose, CA 95112

USA

## FCC radiation standard

### FCC

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the Federal Communications Commission (FCC) Rules.

### CE and FCC

These limits are designed to provide reasonable protection against radio frequency interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may interfere with radio communications if not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception (this can be determined by turning this equipment off and on), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between this equipment and the receiver.
- Connect the equipment to an outlet on a circuit other than that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician.
- Caution: To comply with the limits for an FCC Class B computing device, always use a shielded signal cable.



*Caution to the user: The Federal Communications Commission warns the user that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*

## Setting up your *ELSA MicroLink 56k Internet*

1

### The first step

Please ensure that your PC and the modem are switched off ❶.

2

### Connect the *ELSA MicroLink 56k Internet*

Plug the power connector ❷ of your modem into a 110 V wall socket using the included AC adapter.

3

### Connection to your PC

Insert the supplied V.24/RS232 cable into connection ❸ of the modem and to a free serial port (e.g. COM1 or COM2) of your PC.

4

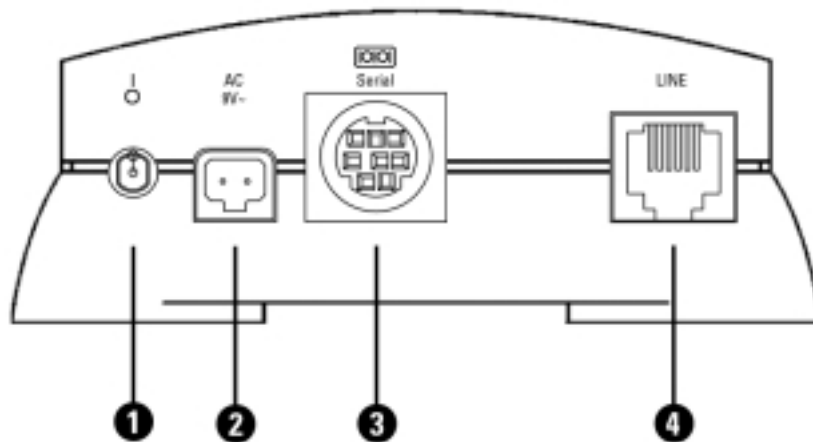
### Connection to the telephone network

Connect one end of the connecting cable supplied to the line connection on the modem ❹ and the other end to the suitable outlet for the telephone line.

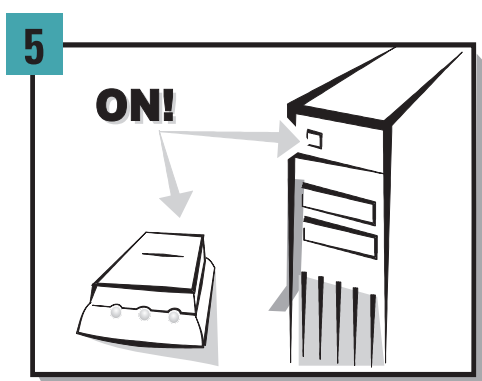
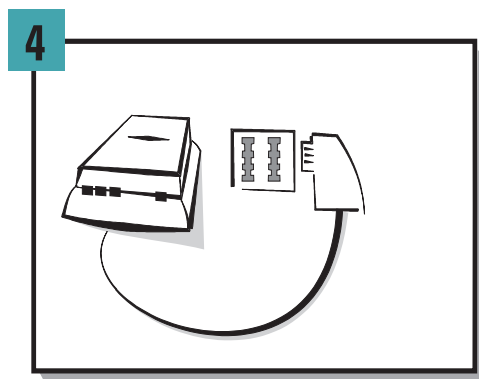
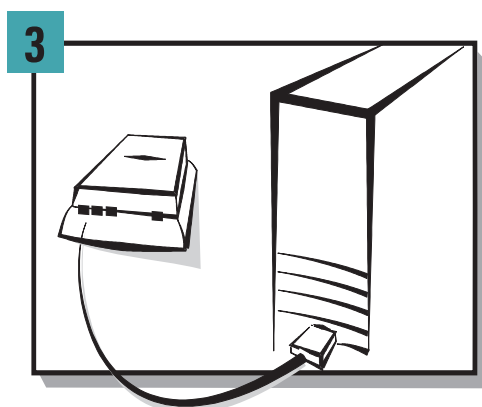
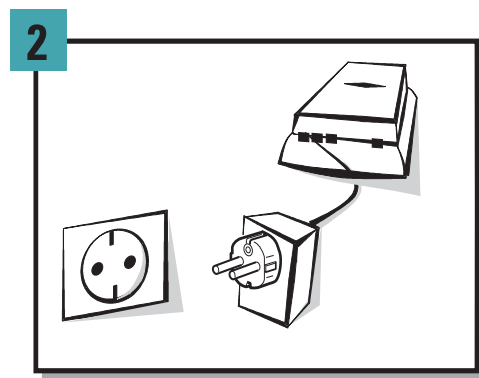
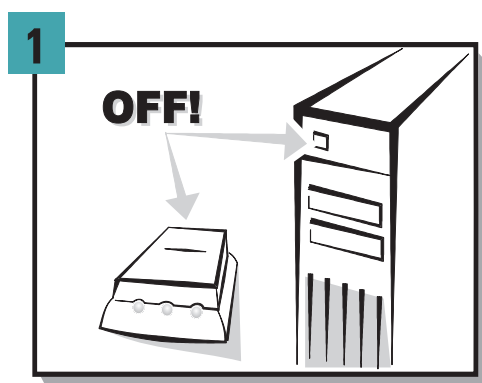
5

### Switch on PC and modem

Switch your modem on first, then your computer.



❶	On/Off switch
❷	Power supply connection
❸	Serial port (V.9/RS232C interface)
❹	Line port (RJ11 socket)





# Installation

## Installation under Windows 95

The installation procedure varies depending on the version of Windows 95 you are using. The various versions of Windows 95 can be identified by the way your computer responds when booting. In addition, you can check under **Start ► Settings ► Control Panel ► System** which Windows 95 version is installed on your computer.

### Installation under Windows 95, version 4.00.950 B

The installation under Windows 95 takes place in the following stages:

- ① After connecting your modem, restart the computer. Windows 95 starts 'Update Device Driver Wizard' and selects the driver for you.
- ② Ensure that the modem CD is in your CD drive (e.g. D:\) and confirm with **Next**. After the current drivers have been found, please confirm this with **Next**.
- ③ The information window 'Insert disk' may be confirmed with **OK**. The window 'Copy files' appears.
- ④ Click **Browse** and switch to your CD drive (e.g. D:\), and click **OK** twice to start the copy process.
- ⑤ Continue with the country selection as described in the 'Country Selection' chapter.

### Installation under Windows 95, version 4.00.950

The installation under Windows 95 takes place in the following stages:

- ① After connecting your modem, restart the computer. Windows 95 boots and displays the 'New Hardware Found' dialog box.
- ② Select **Driver from disk provided by hardware manufacturer** and click **OK**.
- ③ Ensure that the modem is in your CD drive (e.g. D:\) and **Browse**. The 'Open' dialog box will be displayed.
- ④ Switch to the drive letter of your CD-ROM drive (e.g. D:\), and confirm with **OK**.
- ⑤ In the 'Select Model' dialog box, choose the **ELSA MicroLink 56k Internet** and confirm with **OK**. The files required will be copied.
- ⑥ Continue with the country selection as described in the 'Country Selection' chapter.

## Installation under Windows 98

To install the modem under Windows 98, proceed as follows:

- ① After connecting your modem, boot your computer and confirm the 'Hardware Wizard' window with **Next**.
- ② Windows 98 provides you with two options for searching for drivers. Select the **Search for the best driver for your device** option and click **Next**.
- ③ In the subsequent dialog box, activate the **CD-ROM drive** option and deactivate all other boxes. Insert the modem CD in the CD-ROM drive (e.g. D:\) and **Next**.
- ④ When the driver has been found, confirm by clicking **Next** in order to initiate installation. Finally, click **Finish** to exit installation.
- ⑤ Continue with the country selection as described in the 'Country Selection' chapter.

## Deinstallation under Windows 95 and Windows 98

In order to remove the drivers from your computer, click **Start ► Settings ► Control Panel ► Modem**. Select the entry for **ELSA MicroLink 56k Internet** and click on the **Remove** button. In addition, you can use the Windows Explorer to remove the following Inf files:

- 'MDMELSA7' (usually in the C:\windows\inf folder)
- 'ELSA AG MDMELSA7' (usually in the C:\windows\inf\other folder)

## Installation under Windows NT 4.0

To install the modem under Windows NT 4.0, proceed as follows:

- ① After connecting your modem, restart the computer.
- ② Select **Start ► Settings ► Control Panel ► Modems**, and click on **Add** to start the modem recognition. The *ELSA MicroLink 56k Internet* will be recognized as a 'Standard Modem'.
- ③ Click on **Change** to select the modem and in the 'Install New Modem' window, select **Have Disk**.
- ④ Click **Browse** and switch to your CD-ROM drive. Use **Open** to select the file 'MDMELSA7.INF' on your modem CD and click **OK**.
- ⑤ In the 'Install New Modem' dialog box, select the *ELSA MicroLink 56k Internet*, confirm with **OK** and click **Next**.

- ⑥ Finally, click **Finish** to exit installation.

The *ELSA MicroLink 56k Internet* will now be available under Windows NT 4.0. The existing Windows NT 4.0 software (e.g. HyperTerminal, Dial-Up Networking) can access the modem directly.

- ⑦ Continue with the country selection as described in the 'Country Selection' chapter.

## Deinstallation under Windows NT 4.0

In order to remove the drivers from your computer, click **Start ► Settings ► Control Panel ► Modem**. Select the entry for **ELSA MicroLink 56k Internet** and click on the **Remove** button. In addition, you will have to use the Windows Explorer to remove the following Inf files:

- 'OEMx' (e.g. OEM3, in the C:\winnt\inf\ folder)

## Installation under Windows 2000

To install the modem under Windows 2000, proceed as follows:

- ① After connecting your modem, boot your computer and confirm the 'Found New Hardware Wizard' window with **Next**.
- ② Windows 2000 provides you with two options for searching for drivers. Select the **Search for a suitable driver for my device** option and click **Next**.
- ③ In the subsequent dialog box, activate the **CD-ROM drive** option and deactivate all other boxes. Insert the modem CD in the CD-ROM drive (e.g. D:) and confirm with **Next**.
- ④ After the current driver has been found, please confirm this with **Next**. In the next window, confirm the query 'Do you wish to continue the installation' with **Yes**. Finally, click **Finish** to exit installation.
- ⑤ Continue with the country selection as described in the 'Country Selection' chapter.

## Deinstallation under Windows 2000

In order to remove the drivers from your computer, click **Start ► Settings ► Control Panel ► System ► Hardware ► Device Manager ► Modems** and select the entry for the *ELSA MicroLink 56k Internet*. Select 'Action' from the menu and 'Uninstall'. When asked to 'Confirm device removal' click on **OK**.

All the corresponding drivers have now been removed from your system. In addition, you can use the Windows Explorer to remove the following inf file:

- 'OEMx' (e.g. OEM3, in the C:\winnt\inf\ folder)

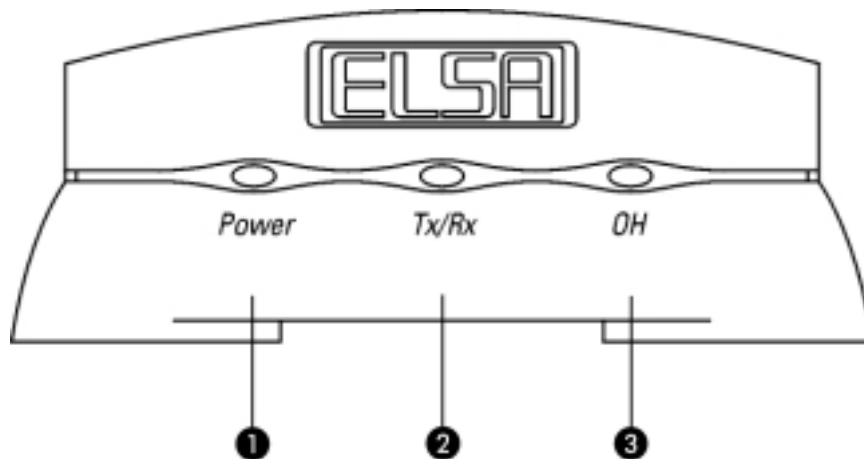


## Country selection

- ① Please reinsert the modem CD in your CD-ROM drive. The country selection program will be started automatically when the CD is inserted. Use this program to select the country in which you would like to use the *ELSA MicroLink 56k Internet*. In the default configuration, the modem is set up for Germany.
- ② Select the entry **United States**, for example, to configure the modem for use in USA, and confirm with **OK**.
- ③ Once the modem has been successfully configured, the CD setup is initiated and you can begin installing the software provided.

## Status display and troubleshooting

The LEDs on the front panel show the condition of the interface lines or the condition of the modem.



①	Modem operational
②	Data to/from modem
③	Modem online (off hook)



*The power LED is lit when the modem is operational.*

# Communications software

The *ELSA MicroLink 56k Internet* is a modem that is supplied together with the *ELSA-COMMUNICATE! Lite* software suite. *ELSA-COMMUNICATE! Lite* is a communications program which provides you with the most important data communications applications in a convenient, easy-to-use package.

The included *ELSA-COMMUNICATE! Lite* software provides the following features in conjunction with your modem:

- Telephone answering machine
- Fax
- Internet e-mail
- Address book (e.g. fax and telephone numbers)
- Integrated terminal program

It is possible to upgrade to the full version of *ELSA COMMUNICATE! PRO*.

## What do I need for *ELSA-COMMUNICATE! Lite*?

The following minimum requirements must be fulfilled for the use of the modem with *ELSA-COMMUNICATE! Lite*:

- **Computer:** A PC with at least a 486 processor is recommended. Approx. 100 MB free disk space is required for a complete installation. After installation, the *ELSA-COMMUNICATE! Lite* takes about 25 MB in disk space.
- **CD-ROM:** CD-ROM drive
- **RAM:** a minimum of 16 MB.
- **Modem:** *ELSA MicroLink 56k Internet*
- **Operating system:** Microsoft Windows 95, Windows 98, Windows NT or Windows 2000
- **Active speakers:** We recommend the use of active speakers in conjunction with a sound card.



# Control commands

The AT command set (AT = command prefix for Attention) was not standardized until recently. The implementation was left to the discretion of the individual manufacturers. A standard now exists in the V.250 command set. Microsoft requires the use of this command set.

With your *ELSA MicroLink 56k Internet*, you have purchased a state-of-the-art modem equipped with the AT command set in accordance with V.250.

A terminal program is required to enter AT commands from the PC (e.g. *ELSA-COMMUNICATE! Lite*).

## Entering and executing AT commands

After switching on, the modem is in the command phase. Commands can only be accepted, interpreted and executed in this phase.

In the event that several commands are to be sent to the modem, these may be entered individually, each with an AT command prefix and a concluding Enter. It is also possible, however, to enter these commands consecutively in a single command line after an introductory **AT** and to conclude the line with an Enter.

The individual commands may be separated by spaces to improve the overview. No further characters may be entered once the end of the command line buffer has been reached. The command line can then only be edited with ← (backspace) or executed with Enter.

## Escape command

Use the characters Ctrl-X and Ctrl-C to abort a command line or a screen output (e.g. in case of displaying the register contents use **AT%R**).

Commands that must be specified with a parameter may also be entered without a parameter. The absence of a parameter corresponds to the parameter 0 (e.g. **ATL = ATL0**).

After the successful establishment of a connection to the remote site, the modem switches from the command phase to the transfer phase.

Transfer phase means that a connection to a remote data station (i.e. to another modem) exists: The modem is online. This is the case after successful call establishment (outgoing call), as well as after answering a call (incoming call). The exchange of data between two data stations can take place during this phase.

A renewed transition to the command phase and back, also in the case of an existing connection, is possible with the escape command and the command **ATO**. The escape

command consists of a series of three escape characters (default setting: +++) and a valid command line.

After the three Escape characters have been entered, the modem is in the command state. Data transfer is not interrupted until a valid command line has been recognized.

The escape character has nothing in common with the character **Esc** of the ASCII character set. It can be redefined in register S2.

All commands sent to the modem must begin with the ASCII characters **AT** or **at** (not valid: At or aT) and must be concluded with **Enter**. A valid command line in an escape sequence is restricted to a maximum of 40 characters.

The command **AT&F** loads the firmware default parameter settings. This command is not executed during existing connections.

## Bit-oriented registers

Bit-oriented registers are primarily used to provide status information. Please note that the modification of a single value in the bit-oriented register may have several functions. Great caution should thus be applied when changing bit-oriented registers! To change the configuration of your modem, you should use the AT commands instead.

### Modifying bit-oriented registers

The following example will illustrate the modification of the bit-oriented options of a register. To set the bit 6 of register S14, enter the command **ATS14.6=1**.

If you would like this value to be maintained after the modem is switched off, the new entry can be stored with the command **AT\*W**.

## Overview of AT command set and registers

In this brief overview, which is grouped according to topics, you find frequently needed AT commands and registers you can use to change your modem settings.

The "Commands and registers" column lists AT commands and registers you can use to change the basic settings of the modem. The "More commands and registers" column lists AT commands and registers for extended control of the modem.

## Basic control features

Configuration	Commands and registers	More commands and registers
Basic initialization of the modem	AT&F	
Control of call establishment (dialing)	ATD, ATT, ATX	AT\$D, AT:D, S6, S7, S8, S14 (bit 6)
Call acceptance, taking over of the line, hang up	ATA, ATD, ATH, AT&D2, S0	AT-H, AT\T, S14.6, S28 (bit 7)
Transition between command and transfer phase	+++, AT0	S2
Control of speaker and of call signaling	ATL, ATM, S54 (bit 0)	
Read out modem information	ATI, ATS, AT&V	AT%R, AT\S, AT%V, S86
Control data compression	AT+DS	
Control error correction	AT+ES	
Control data flow monitoring	AT+IFC	S130
Control dial lock or dial delay	S31 (bit 7)	

## Extended control features

Configuration	Commands and registers	More commands and registers
Operation with saved initializations	AT&V, AT&W, AT*W, AT&Y, ATZ	S54
Operate with saved phone numbers	AT+ASTO	

### Special control features

Control modem signal lines	AT&C	AT\D, AT&S
Control the effects of DTR	AT&D	AT\$D, AT:D, S28 (bit 7)
Control modem responses	ATE, ATQ, ATV, ATV	AT&D, AT-H, AT-M, AT*Q, S96
Control call tones	AT&G	
Control transfer method	AT+MS	
Control data format	S28 (bit 0-1), S53	
Control telephone-side speed	AT+MS	



# Appendix

## Technical data

Users with specific technical interests should refer to this chapter for detailed information on *ELSA MicroLink 56k Internet*.

	<b><i>ELSA MicroLink 56k Internet</i></b>
Power supply	110 V/9V <sub>AC</sub> power adapter, TÜV GS approved
Power consumption (approx.)	Transmission phase (online) 700 mA typ. Command phase (online) 350 mA typ.
Power consumption	9.9 VA typ.
Dimensions and design	31 x 93 x 123 mm (W x H x D), plastic housing
Ambient conditions	5..40°C 0..80%, non-condensing
Transfer protocols and speeds	56.000..300 bps asynchronous, transmission and reception 33.600..300 bps asynchronous (V.90, K56flex, V.34, V.32bis, V.32, V.22bis, V.21, V.23, V.80, Bell 212A and Bell 103)
Error correction	V.42 and MNP Class 4
Data compression	V.42bis and MNP Class 5
Command set	AT command set in accordance with V.250/V.25ter
Fax operation	14.400..2400 bps in accordance with V.17, V.33, V.29 and V.27ter; fax command set, TR-29.2 Class 2 (SP-2388), Class 2.0 (TIA/EIA-592), Class 2.1 (ITU-T.32), Class 1 (TIA/EIA-578) and Class 1.0 (ITU-T.31)
Dialing method	Dual-tone multifrequency dialing
External call	Via flash function or digit
BPS ADJUST	automatic in accordance with V.8 and V.100 (can be disabled)
Computer interface	V.24/RS-232
Approval	FCC approval according to part 15 and part 68, listed by Underwriters Laboratories



## Warranty conditions

### ELSA'S SIX YEAR LIMITED WARRANTY

ELSA provides the following limited warranty, valid as of June 1, 1998, to purchasers of ELSA products, EXCEPT ELSA COLOR MONITORS AND ELSA VIDEOCONFERENCING SYSTEMS within the United States, and ELSA's warranty obligations are limited to the terms set forth below:

- a) ELSA AG and ELSA Inc. (jointly "ELSA") warrant this ELSA product and its parts (jointly "Product") against defects in material and workmanship for a period of SIX (6) YEARS from the date of delivery of the Product by an ELSA dealer to the purchaser.
- b) ELSA's entire liability and Customer's exclusive remedy will be, at ELSA's sole discretion, the repair, replacement, replacement by a successor product or refund of the original purchase price of the Product not meeting ELSA's limited warranty if the Product is returned within the warranty period with a copy of proof of purchase, such as the original purchase receipt, to ELSA or ELSA's dealer. ELSA will not be responsible for shipping or handling charges involved in shipping the Product to and from ELSA or ELSA's dealer, and purchaser must prepay all shipping charges.
- c) ELSA will not be responsible for replacing Product that is damaged by:
  - i) Accident, abuse, misapplication, mishandling, alteration, electrical current fluctuations, incompatible hardware or software, improper installation or operation, or improper packaging while the Product is in the possession of the purchaser,
  - ii) The purchaser's failure to follow operating, maintenance, storage, or environmental instructions as set forth in the Product manual and specifications.
- d) The warranty also does not apply if purchaser has submitted the Product for opening, modifications or repairs to persons other than ELSA or an authorized ELSA dealer.
- e) ANY IMPLIED WARRANTIES ON THE PRODUCT, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE EXPRESS LIMITED WARRANTY PERIOD OF SIX (6) YEARS AS SPECIFIED ABOVE.
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