

**ELSA MicroLink™ ADSL USB**

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# Preface

## Thank you for placing your trust in this ELSA product.

By selecting the *ELSA MicroLink ADSL USB* you now have an ADSL modem that will enable you to surf the Internet at high speed. Transmission rates of up to 8 Mbps downstream make it easy and fast to download animations, graphics or similarly large quantities of data. And an upstream rate of 1 Mbps can enable you to send even large e-mails fast without incurring high costs.

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

This documentation was compiled by several members of our staff from a variety of departments in order to ensure you the best possible support when using your product.

## Additional information in the Internet at '[www.elsa.com](http://www.elsa.com)'

Our online services ([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' section you will find all FAQs (**F**requently **A**sked **Q**uestions) on your product. The knowledge database (KnowledgeBase) offers an additional large pool of information. Current drivers, 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 ADSL USB*
- USB cable
- Line connector cable (RJ11–RJ11)
- CD with application software
- Documentation

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



## CE conformity

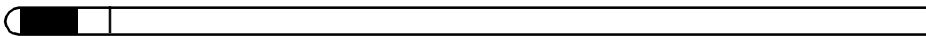
This product meets the requirements of the 1999/5/EG Directive (R&TTE) and is designed for connection to public digital telecommunications networks in the EU and Switzerland.

Connect the device to the public digital telecommunications network with the supplied cable.

The declaration of conformity with the basic requirements can be found in the download section of the ELSA homepage ([www.elsa.com/download](http://www.elsa.com/download)).

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# 1 Introduction

## 1.1 What is ADSL?

The sheer speed of development of computer technology over the last few years has resulted in a huge increase in the volume of electronic data traffic. More users every day want to send and receive a constantly increasing volume of data. Conventional transmission technologies (modem or ISDN devices) are no longer equal to the demand.

New technologies are eliminating the restrictions and are offering the user true broadband communications at significantly higher transfer speeds. An important criterion for the spread of these new access technologies is their availability in as many offices and private households as possible. One of the new technologies is transfer by ADSL, which bridges the section of the network that connects to the customer ("the last mile") over standard copper wires. ADSL can thus be used for broadband access to the Internet, for example.

ADSL technology (**A**symmetric **D**igital **S**ubscriber **L**ine) uses three regions of different sizes on the copper wire of a standard telephone line. Two regions are used for data transmission and one for telephoning. The term 'asymmetric' indicates that the transmitting and receiving channels can carry different quantities of data:

- When the user surfs the Internet, the data sent to the provider tend to carry less information (e.g. addresses of web sites or e-mails). The transmission rate of up to 1 Mbps is generally sufficient for this purpose.
- To load multimedia content (video sequences, animations, images etc.) onto the computer from the Internet at acceptable quality and speed, a transmission rate of up to 8 Mbps brings a significant saving in cost and time.

## 1.2 The advantages of ADSL

- Use the Internet and telephone at the same time (using a splitter)
- No new wiring, because the existing telephone lines (copper wire) can still be used
- High transmission rates of up to 1 Mbps (upstream) or up to 8 Mbps (downstream)

## 1.3

### What does *ELSA MicroLink ADSL USB* offer?

The following is an outline of the principal features of the device giving you a quick overview of its capabilities.

#### Simple installation

- Install the ELSA software and basic configuration using the convenient wizards
- Connect the ADSL cable
- Connect the *ELSA MicroLink ADSL USB* to the computer at the USB port (plug&play)
- Go!

#### ADSL cable connection

If you want to be able to use the telephone and the Internet simultaneously, you will need a splitter or microfilter to separate the high-frequency data signals from the low-frequency telephone signals.

#### USB connection

Because of the USB port, the *ELSA MicroLink ADSL USB* does not require power from an external power adapter. It is also automatically detected on installation by plug&play.

#### Status display

Five LED lights on the front of the device show the modem status, simplifying diagnosis in the event of possible system problems and allowing the data transfer to be monitored.



## 2 Introducing the *ELSA MicroLink ADSL USB*

This section will help you connect as quickly as possible. We describe the device for you and show you how to connect it and start using it as quickly as possible.

### 2.1 System requirements

Your computer must meet the following requirements to operate with your *ELSA MicroLink ADSL USB*:

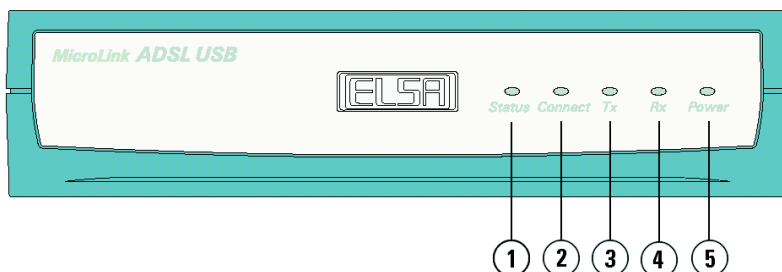
- **Computer:** Pentium or compatible, 100 MHz or better
- **RAM:** at least 32 MB available memory
- **Hard drive:** at least 5 MB available memory
- **Graphics board:** VGA graphics board with 256 colors (or more)
- **Operating systems:** Windows 98, Windows 98 SE, Windows Me or Windows 2000
- **CD-ROM drive**
- **USB connection**

### 2.2 Connection and display elements

This section introduces the unit's hardware. It covers the unit's display elements and connection options.

## 2.2.1 The front of the unit

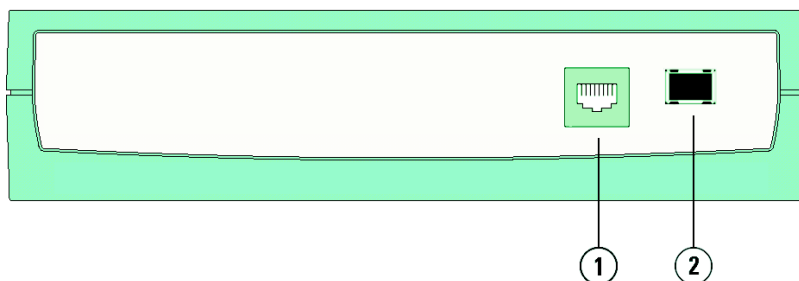
You will find a number of LEDs as display elements on the front panel.



- ① **Status** (red): This LED shows the status of the ADSL line. If it is on, this indicates a fault on the ADSL line (e.g. line interrupted or very poor line quality).
- ② **Connect** (red): Flashes as long as the connection is training. Once the ADSL connection has been established, this LED remains steady.
- ③ **Tx** (green): Flashes when data is being sent over the USB bus.
- ④ **Rx** (green): Flashes when data is being received over the USB bus.
- ⑤ **Power** (green): This LED is on once the firmware has been successfully loaded in the modem and the device is receiving power from the USB port.

## 2.2.2 The back of the unit

There are two connectors at the back of the device:



- ① **ADSL connection:** Connect the modem to the telephone socket or the splitter.
- ② **USB connection:** Connect the modem to your computer here.

## 2.3

### Installation of the drivers

Depending on your provider, there are two procedures for data transfer available:

- **PPPoE** (Point-to-Point-Protocol-over-Ethernet)
- **PPPoA** (Point-to-Point-Protocol-over-ATM)

Your Internet or telephone provider will tell you what drivers you must install.

*Please connect the ELSA MicroLink ADSL USB to your computer only after you have installed the drivers.*



### 2.3.1

#### Installation of the LAN drivers (PPPoE)

Installation procedure under Windows 98, Windows 98 SE, Windows Me and Windows 2000 is generally the same. Unless otherwise prompted, confirm your inputs with **Next**:

- ① Place the CD in your CD-ROM drive. If the start screen does not automatically open after a short time, start the file 'Autorun.exe' on the CD.
- ② Select 'PPPoE Driver Setup'. The start window of the installation wizard will open.
- ③ The drivers are installed on your computer. Select **Finish** to restart the computer.
- ④ After the operating system has been reloaded, connect your *ELSA MicroLink ADSL USB* to the USB port. The hardware wizard detects the new hardware and starts the installation of the ADSL modem (have the Windows installation CD ready if required).
- ⑤ Now set the preferences for ADSL line type, VCI and VPI as supplied by your provider and click **OK** to confirm. This completes the installation.

The *ELSA MicroLink ADSL USB* is installed on your computer as **ELSA USB ADSL LAN adapter**. You can check the settings of the LAN adapter and change them in **Start ► Settings ► Control Panel**.

## 2.3.2

### Establishing connections with the *ELSA MicroLink ADSL USB*

Now you can install the application software supplied by your provider. Once you have installed this software you can establish a PPPoE connection to your provider.

## 2.3.3

### Installation of the ATM drivers (PPPoA)

Installation procedure under Windows 98 SE, Windows Me and Windows 2000 is generally the same. Unless otherwise prompted, confirm your inputs with **Next**:



*Because Windows 98 does not have ATM support, you will need a special WAN driver. Please see 'Installing the WAN drivers for Windows 98'. Check which version of Windows 98 you are using by opening the system information in **Start ► Settings ► Control Panel ► System**.*



*Please do not connect the ELSA MicroLink ADSL USB to your computer until you have installed the drivers.*

- ① Check that the drivers for ATM support are installed on your computer. If they are not installed, please open Windows Setup and install the drivers (**Start ► Settings ► Control Panel ► Add/Remove Programs ► Windows Setup ► Communications ► Details ► Dial-Up ATM Support**). Have the Windows installation CD ready in case it is required.
- ② Place the included CD in your CD-ROM drive. If the start screen does not automatically open after a short time, start the file 'Autorun.exe' on the CD.
- ③ Select 'PPPoA Driver Setup'. The start window of the installation wizard will open.
- ④ The drivers are installed on your computer. Select **Finish** to restart the computer.
- ⑤ Restart the CD setup on the *ELSA MicroLink ADSL* CD and select 'ATM Patch for Win98/WinMe' to update the Windows ATM drivers.
- ⑥ Restart the computer if required to activate the driver changes.
- ⑦ After the operating system has been reloaded, connect your *ELSA MicroLink ADSL USB* to the USB port. The hardware wizard detects

the new hardware and starts the installation of the ADSL modem (have the Windows installation CD ready if required).

The *ELSA MicroLink ADSL USB* is now installed on your computer as **ELSA USB ADSL LAN adapter**. You can check the settings of the ATM adapter and change them in **Start ► Settings ► Control Panel**.

## 2.3.4

### Establishing connections with the *ELSA MicroLink ADSL USB*

Because the Windows 98 SE, Windows Me and Windows 2000 operating systems already have ATM support, ADSL connections can be easily established with a new Dial-Up Networking connection.

#### Windows 98 SE and Windows Me

- ① Click 'Make New Connection' in the Dial-Up Networking.
- ② Enter a name for the new connection in the starting window of the Dial-Up Networking wizard and select the 'PPP ATM Adapter' as the device. Click **Configure** to enter the parameters for VCI and VPI.
- ③ Now select 'Permanent Virtual Circuit' and enter the parameters supplied by your provider. Click **OK** and then on **Next**.
- ④ You can skip the windows for the telephone number and the country code, because the connection is set by entering the VCI and VPI values.
- ⑤ To import the settings, click **Finish**.
- ⑥ Click on the newly created connection in Dial-Up Networking to connect to your provider.
- ⑦ Enter your user name and password and click **Connect**. The connection to your provider is established.

#### Windows 2000

- ① Under **Start ► Programs ► Accessories ► Communications ► Network and Dial-up Connections**, select 'Make New Connection'.
- ② In the start window of the Network Connection Wizard select 'Dial-up to private network' and click **Next**.
- ③ You can now select the device you want to use to establish the connection in the list of all possible ATM adapters. Then click **Next**.

- ④ Enter the values for VCI and VPI into the 'Phone number' field.

The values are entered as follows:

For example, you have received the following access parameters from your provider: VPI=0 and VCI=32. Enter 'p0,32'. Make sure that there are no spaces!

- ⑤ Click **Finish** to complete creating the new connection.
- ⑥ Click on the newly created connection in Dial-Up Networking to establish a connection to your provider.
- ⑦ Enter your user name and password and click **Dial**. The connection to your provider is established.

## 2.3.5

### Installing the WAN drivers (Windows 98 only)

Windows 98 does not have ATM support. You will need a special driver to establish an ADSL connection using ATM.

Unless otherwise prompted, confirm your inputs with **Next**:

- ① Place the included CD in your CD-ROM drive. If the start screen does not automatically open after a short time, start the file 'Autorun.exe' on the CD.
- ② Select 'WAN Driver Setup'. The start window of the installation wizard will open.
- ③ The drivers are installed on your computer. Select **Finish** to restart the computer.
- ④ After the operating system has been restarted, connect your *ELSA MicroLink ADSL USB* to the USB port. The hardware wizard detects the new hardware and starts the installation of the ADSL modem (have the Windows installation CD ready if required).
- ⑤ Select 'Automatic' as the protocol in the configuration wizard.
- ⑥ It is not necessary to enter the phone number and SPID (Service Profile ID).
- ⑦ Complete the configuration with **Finish**.
- ⑧ Now enter the parameters for an ADSL connection in the WAN adapter configuration window. The values for the ADSL LineType and VCI and VPI are preset by your provider. Confirm your entries with **OK**.

- ⑨ Windows continues to install some components. Please have the Windows installation CD ready for this purpose.
- ⑩ This completes the installation of the drivers.

## 2.3.6

### Establishing connections with the *ELSA MicroLink ADSL USB*

After the installation the *ELSA MicroLink ADSL USB* is available as an ISDN card with PPP drivers through which a Dial-up connection can be established in Dial-Up Networking.

- ① Click 'Make New Connection' in the Dial-Up Networking.
- ② Enter a name for the new connection in the starting window of the Dial-Up Networking wizard and select the 'USBADSL-Line0' as the device. Then click **Next**.
- ③ In general, it is not necessary to enter a phone number and a country code because the connection parameters were previously specified during installation. However, because these fields must be filled in, please enter any number.
- ④ Click **Finish** to exit the configuration of the Dial-Up Networking connection.
- ⑤ Click on the newly created connection in Dial-Up Networking to connect to your provider.
- ⑥ Enter your user name and password and click **Connect**. The connection to your provider is established.

## 2.4

### Uninstallation of the drivers

Proceed as follows to remove the drivers from your computer:

- ① Select **Start ► Programs ► ELSA USB ADSL LAN/ATM/WAN adapter ► Uninstall** and confirm the process with **OK**.
- ② The computer must be restarted for the driver uninstallation to be effective.





## 3

## The *ELSA DSLMON GUI*

The *ELSA DSLMON GUI* is a software tool for configuring and controlling the *ELSA MicroLink ADSL USB*.

After installing the *ELSA MicroLink ADSL USB*, use **Start ► Programs ► ELSA USB ADSL LAN/ATM/WAN adapter ► DSLMON** to start the *ELSA DSLMON GUI*.

You will see the following information:

Field content	Description
DSL status	Indicates the status of the ADSL modem. The following displays are possible:  IDLE                      The modem is in idle status OPERATIONAL          The modem is ready for operation INITIALIZING          The modem is being initialized FAILED                  A connection to the remote station has failed
Connection data rate	The maximum transmit data rate negotiated by the modem (upstream) over the ADSL connection (kbps)
Connection data receive rate	The maximum receive data rate negotiated by the modem (downstream) over the ADSL connection (kbps)
Data transmit rate	The actual data transmit rate (kbps)
Data receive rate	The actual data receive rate (kbps)
Stand-by icon	A small square in the upper right corner flashes when the ADSL modem is ready to carry data.

## 3.1

## Connection details

Click **Details** to show additional information on the connection.

Section DSL information	Description
ADSL standard	ADSL standard used. The following displays are possible: ANSI T1.413 G.DMT G.LITE Multistandard
Transmit rate	The maximum data transmission rate (upstream) negotiated by the modem over the ADSL connection (kbps)
Receive rate	The maximum receive data rate negotiated by the modem (downstream) over the ADSL connection (kbps)
CRC	Number of errors per second since training
Margin	Signal-Noise Ratio (SNR) on the modem side of the line (dB)
Attenuation	Actual signal attenuation (dB)
FEC	Number of uncorrectable errors since the connection was established

Section ATM information	Description
Transmitted cells	Number of ATM cells sent since the connection was established
Received cells	Number of ATM cells received since the connection was established
Delineation	ATM delineation status. The following displays are possible: LOSS                      ATM synchronization failed GOOD                     ATM synchronization successful
VPI	Virtual Path Identifier; used in the ATM cell header
VCI	Virtual Channel Identifier; used in the ATM cell header
HEC	Number of received ATM cells with erroneous ATM cell header since the connection was established

Section Packet information	Description
Transmitted	Number of transmitted AAL5 packets (ATM adaption layer) since the connection was established
Received	Number of received AAL5 packets (ATM adaption layer) since the connection was established

## 3.2

### Configuring the *ELSA MicroLink ADSL USB*

You can change the ADSL modem settings by clicking **Configure**.

*You must make the changes effective by rebooting the modem or disconnecting it from the computer and reconnecting it after clicking **OK** to confirm the changes!*



Field content	Description
ATM channel	Change the values for VCI and VPI here; input in decimals
Packing type (for the LAN driver only!)	The following selection is available for the NDIS driver: Bridged LLC SNAP Bridged VC MUX Routed LLC SNAP
ADSL standard	The following selection is possible: ANSI T1.413 G.DMT G.LITE Multistandard

## 3.3

### Version display

Click **Details** to view the version:

Field content	Description
GUI Version	Version number of the DSLMON GUI
Hardware	Version number of the hardware
Drivers	Version number of the driver
Firmware	Version number of the <i>ELSA MicroLink ADSL USB</i> firmware



## 4 Appendix

### 4.1 Power and ratings data

	<b><i>ELSA MicroLink ADSL USB</i></b>
Standards	ADSL over POTS:   ANSI T1.413 Issue 2 ITU G.992.1 (G.dmt, Annex A) ITU G.992.2 (G.lite)
WAN connection	RJ11 socket
Computer interface	Universal Serial Bus 1.1
Protocols	PPP over Ethernet (RFC 2516) PPP over ATM (RFC 2364) IP over ATM: Bridged Ethernet/Routed IP (RFC 2225/2684) Classical IP over ATM (RFC 1577) ATM AAL 5
Operating systems	Windows 98, Windows 98 SE, Windows 2000 and Windows Me
Power supply	External power adapter not required with USB
Ambient conditions	Temperature 0–70°C
Package contents	<i>ELSA MicroLink ADSL USB</i> modem, USB cable, ADSL cable, software and documentation
Warranty	2 years
Support and service	Via hotline and Internet

## 4.2

# Warranty conditions

The ELSA AG warranty, valid as of June 01, 1998, is given to purchasers of this ELSA product in addition to the warranty conditions provided by law and in accordance with the following conditions:

### 1 Warranty coverage

- a) The warranty covers the equipment delivered and all its parts. Parts will, at our sole discretion, be replaced or repaired free of charge if, despite proven proper handling and adherence to the operating instructions, these parts became defective due to fabrication and/or material defects. Also we reserve the right to replace the defective product by a successor product or repay the original purchase price to the buyer in exchange to the defective product. Operating manuals and possibly supplied software are excluded from the warranty.
- b) Material and service charges shall be covered by us, but not shipping and handling costs involved in transport from the buyer to the service station and/or to us.
- c) Replaced parts become property of ELSA.
- d) ELSA are authorized to carry out technical changes (e.g. firmware updates) beyond repair and replacement of defective parts in order to bring the equipment up to the current technical state. This does not result in any additional charge for the customer. A legal claim to this service does not exist.

### 2 Warranty period

The warranty period for this ELSA product is two years. This period begins at the day of delivery from the ELSA dealer. Warranty services do not result in an extension of the warranty period nor do they initiate a new warranty period. The warranty period for installed replacement parts ends with the warranty period of the device as a whole.

### 3 Warranty procedure

- a) If defects appear during the warranty period, the warranty claims must be made immediately, at the latest within a period of 7 days.
- b) In the case of any externally visible damage arising from transport (e.g. damage to the housing), the transport company representative and ELSA should be informed immediately. On discovery of damage which is not externally visible, the transport company and ELSA are to be immediately informed in writing, at the latest within 7 days of delivery.
- c) Transport to and from the location where the warranty claim is accepted and/or the repaired device is exchanged, is at the purchaser's own risk and cost.
- d) Warranty claims are only valid if the original purchase receipt is returned with the device.

### 4 Suspension of the warranty

All warranty claims will be deemed invalid

- a) if the device is damaged or destroyed as a result of acts of nature or by environmental influences (moisture, electric shock, dust, etc.),
- b) if the device was stored or operated under conditions not in compliance with the technical specifications,
- c) if the damage occurred due to incorrect handling, especially to non-observance of the system description and the operating instructions,
- d) if the device was opened, repaired or modified by persons not authorized by ELSA,

- e) if the device shows any kind of mechanical damage,
- f) if the warranty claim has not been reported in accordance with 3a) or 3b).

## 5 Operating mistakes

If it becomes apparent that the reported malfunction of the device has been caused by unsuitable software, hardware, installation or operation, ELSA reserves the right to charge the purchaser for the resulting testing costs.

## 6 Additional regulations

- a) The above conditions define the complete scope of ELSA's legal liability.
- b) The warranty gives no entitlement to additional claims, such as any refund in full or in part. Compensation claims, regardless of the legal basis, are excluded. This does not apply if e.g. injury to persons or damage to private property are specifically covered by the product liability law, or in cases of intentional act or culpable negligence.
- c) Claims for compensation of lost profits, indirect or consequential detriments, are excluded.
- d) ELSA is not liable for lost data or retrieval of lost data in cases of slight and ordinary negligence.
- e) In the case that the intentional or culpable negligence of ELSA employees has caused a loss of data, ELSA will be liable for those costs typical to the recovery of data where periodic security data back-ups have been made.
- f) The warranty is valid only for the first purchaser and is not transferable.
- g) The court of jurisdiction is located in Aachen, Germany in the case that the purchaser is a merchant. If the purchaser does not have a court of jurisdiction in the Federal Republic of Germany or if he moves his domicile out of Germany after conclusion of the contract, ELSA's court of jurisdiction applies. This is also applicable if the purchaser's domicile is not known at the time of institution of proceedings.
- h) The law of the Federal Republic of Germany is applicable. The UN commercial law does not apply to dealings between ELSA and the purchaser.

