



IBM UltraPort Digital Array Microphone

User's Guide

OPTIONS
by IBM

Note: Before using this information and the product it supports, read the information under Appendix C, "Product warranties and notices" on page C-1.

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Preface

This manual contains instructions for installing, configuring, and troubleshooting the IBM® UltraPort Digital Array Microphone. The manual is divided into two parts:

Part 1: Installation and user's guide

This guide contains abbreviated installation instructions.

This guide also contains the product description and expanded installation instructions in the following languages:

- English
- French
- German
- Spanish
- Italian
- Brazilian Portuguese
- Traditional Chinese
- Japanese

Part 2: Appendixes

The appendixes contain problem solving and help and service information. They also contain the product warranties and notices.

Note: The illustrations in this manual might be slightly different from your hardware.

Registering your option

Thank you for purchasing OPTIONS by IBM. Please take a few moments to register your product and provide us with information that will help IBM to better serve you in the future. Your feedback is valuable to us in developing products and services that are important to you, as well as in developing better ways to communicate with you. Register your option on the IBM Web site at

<http://www.ibm.com/pc/register>

IBM will send you information and updates on your registered product unless you indicate on the Web site questionnaire that you do not want to receive further information.

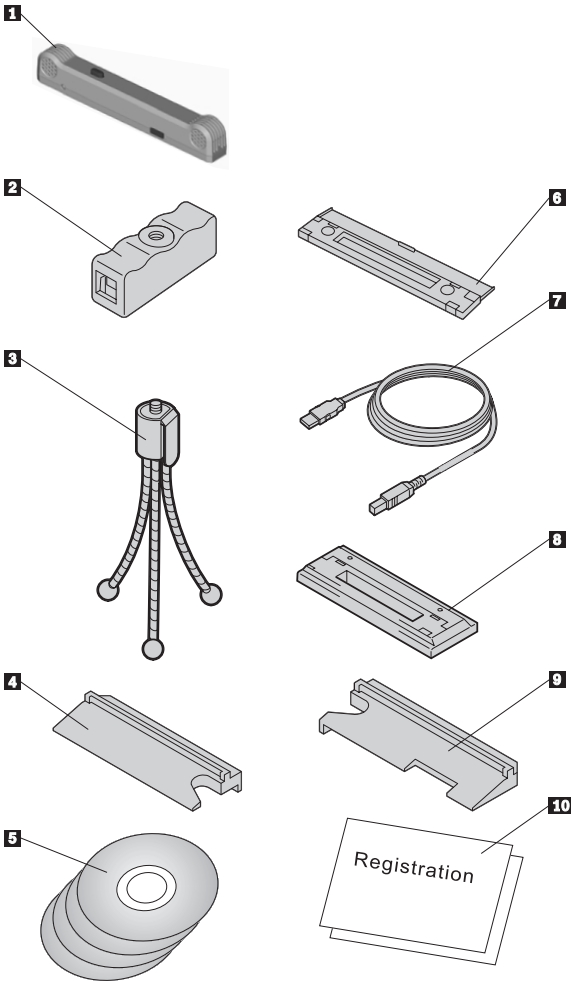
Installation and user's guide

This section provides information about features, software and hardware requirements, how to install the programs needed for using the IBM UltraPort Digital Array microphone, and how to adjust the microphone for optimum use.

Feature description

The IBM UltraPort Digital Array microphone is a digital, far-field microphone incorporating advanced noise reduction technology to enable clear, continuous speech recognition with IBM ViaVoice™ software and other microphone-enabled programs.

The microphone is Plug and Play compatible. With Microsoft® Windows® 98 Second Edition, Windows® Millennium Edition (Me), or Windows 2000 Professional, the microphone is system-configured automatically when you connect it to your UltraPort connector or USB port on your computer.



- | | |
|--|--|
| <p>1 Digital Array Microphone (P/N 09N4179)</p> <p>2 USB cable adapter (P/N 08K6107)</p> <p>3 IBM tripod (P/N 08K6450)</p> <p>4 Left spacer for X series Thinkpads</p> <p>5 CD-ROM</p> <p>(US English P/N 22P8950)</p> <p>(UK English P/N 22P8951)</p> <p>(German P/N 22P8952)</p> <p>(French P/N 22P8953)</p> <p>(Italian P/N 22P8954)</p> <p>(Spanish P/N 22P8955)</p> <p>(Brazilian Portuguese P/N 22P8956)</p> <p>(Japanese P/N 22P8957)</p> <p>(Traditional Chinese P/N 22P8958)</p> | <p>6 Two UltraPort interposers (P/N 08K6104, or P/N 08K6696 for use only with an IBM ThinkPad X2x)</p> <p>7 USB cable (P/N 27L0521)</p> <p>8 UltraPort device connector cover (P/N 08K6106)</p> <p>9 Right spacer for X series Thinkpads</p> <p>10 Registration and warranty card</p> |
|--|--|

Minimum system requirements

Your ThinkPad computer has the following minimum system requirements to use the microphone:

- Intel® Pentium® 300 processor
- 64 MB RAM
- A CD-ROM or DVD drive
- One of the following operating systems:
 - Windows 98 Second Edition (SE)
 - Windows Millennium Edition (Me)
 - Windows 2000 Professional

ViaVoice Release 8.1 system requirements

Note: For customers using Japanese and Traditional Chinese, the ViaVoice Release is 8.0.

Microsoft Windows 98 SE or Windows 2000 Professional have the following minimum system requirements:

- Intel Pentium 300 MHz processor and 256 KB L2 cache or equivalent
- 64 MB RAM for Windows 98
- 96 MB RAM for Windows 2000
- 510 MB of hard disk space
- Quad-speed (4X) CD-ROM or DVD drive

Windows Me has the following minimum system requirements:

- Intel Pentium III 600 MHz and 256 KB L2 cache
- 64 MB RAM
- 510 MB of hard disk space
- Quad-speed (4X) CD-ROM or DVD drive

Note: By acceptance of your license agreement, you are *only* permitted to use one of the nine (9) enclosed IBM ViaVoice Pro Edition CDs.

Included software

The following software for using the microphone is provided on the CDs that come with this product:

- USB microphone device driver (Install/Driver CD)
- ViaVoice Release 8.1 (Release 8.0 for Japanese and Traditional Chinese)

Installing the device drivers

To install the microphone device driver do the following:

Note: To avoid installation problems, install the device driver before connecting the microphone to your computer.

1. Insert the microphone software CD into the CD-ROM drive of your computer. The setup wizard starts.
2. Click **Next** to install the program.
3. Select the language/part number to install (See page 1-3).
4. Follow the instructions on the screen

Note: If the setup wizard does not start automatically, do the following:

1. Click Start on the Windows taskbar and then, click **Run**.
2. Type `x:\autorun.exe`, where *x* is the letter of the CD-ROM drive on your ThinkPad computer.
3. Click **OK** to start the setup wizard
4. Follow the procedure described above.

After installing the device driver, you need to connect the microphone to your computer.

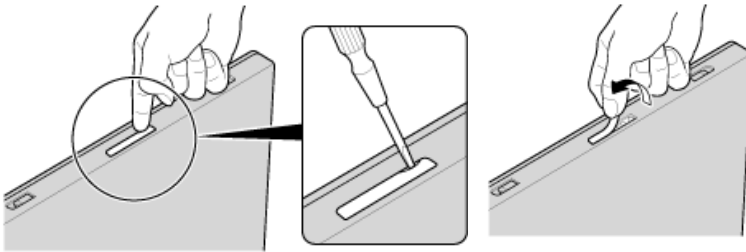
Connecting the microphone to your Thinkpad computer

The UltraPort Digital Array Microphone can be connected to your computer using either the UltraPort connector on top of your ThinkPad LCD panel or the USB port.

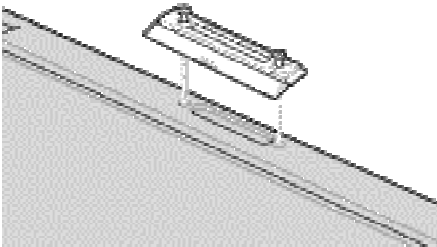
Connecting through the UltraPort connector

Use the following steps to connect your microphone to the ThinkPad UltraPort connector:

1. Remove the rubber plug from the UltraPort connector on your ThinkPad computer.

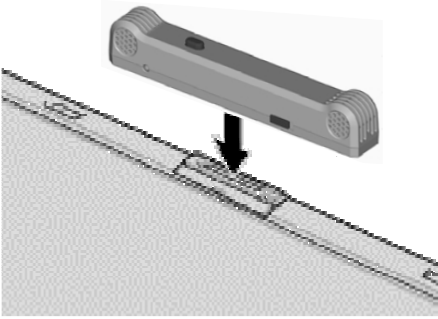


2. Remove the plastic protector from the microphone.
3. Place and secure the appropriate interposer on the UltraPort connector.



4. If you have an X series ThinkPad, attach the right and left spacers. If not, continue to step 5.

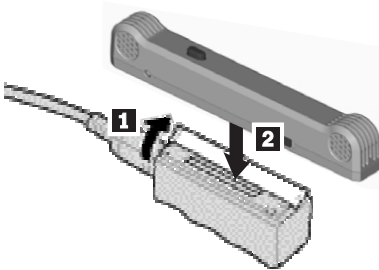
5. Attach the UltraPort Microphone to the UltraPort connector.



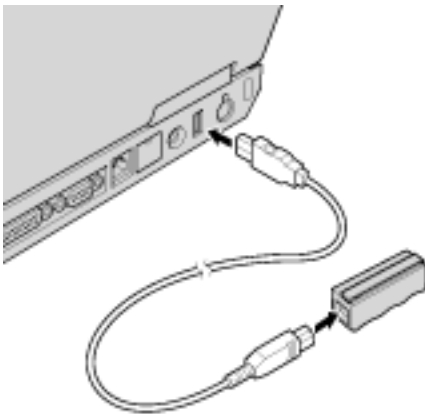
Connecting through the USB connector

To connect using the USB connector, do the following steps:

1. Connect the UltraPort Microphone **2** to the USB-to-UltraPort adapter **1**.



2. Connect the USB cable to the USB-to-UltraPort adapter.
3. Connect the opposite end of the USB cable to the USB connector on the computer.



Installing the ViaVoice Release 8.1 software

To install the ViaVoice Release 8.1 software, follow these steps.

1. Insert the language-appropriate ViaVoice CD into the CD-ROM drive. Installation starts automatically.
2. Select the language based on your operating system.
3. Follow the instructions on the screen. See section on the screen instructions below.

If the installation program doesn't automatically start, follow these steps.

1. Click Start on the Windows taskbar and then, click **Run**.

2. Type $x:\backslash\text{setup}$, where x is the letter of your CD-ROM drive.
3. Click **OK**.

ViaVoice on screen instructions

During installation you will see several window. The following list includes the title bar of some of the instruction windows and a brief description for each.

- **User Information** - Type your name and company name, if appropriate. Click **Next** when you have finished.
- **Installation Options** - Select the install Options. To clear an Option, click on the check mark in the box.

We recommend that you leave a check mark next to Run product registration so that we can send you important information about future upgrades and options as they become available.

Click **Next** when you have finished.

- If you have Microsoft Office 97 or Office 2000 installed on your computer, select the option to install ViaVoice support for Microsoft Office.
- This option includes support for dictation into Word and natural commands for Word, Excel, and Outlook. (Outlook is supported only by the US/UK English, Japanese, French, and German versions of ViaVoice.)
- If you choose not to install this support now, you can install it later.
- **Adobe Acrobat Reader** - If Adobe Acrobat REader is not already installed on your computer, select the option to have ViaVoice automatically start the Adobe Acrobat Reader installation program. Adobe Acrobat Reader enables you to view the ViaVoice *Command Reference* and *User's Guide*.
- **IBM Product Registration** - If you selected to register your software now, you see this window at the end of installation. Type all registration information and follow the on-screen instructions.
- **Setup Complete** - This window indicates that you have successfully installed the ViaVoice software. Click **Finish** to complete the setup.

Setting up your audio system

The ViaVoice User Wizard window will start automatically. Check the information in this window for accuracy and then click **Next**.

The **Audio Setup Wizard** window opens. This wizard presents several windows to help you set up your microphone. To set up the audio, do the following steps.

1. The Audio Setup Wizard will prompt you to identify the type of microphone and components you have (select **Desktop Microphone** and **Mic connector via USB**). With the microphone on, complete all audio tests that the Audio Setup Wizard presents to you. Components are listed in the "Feature description" on page 1-2.
2. If you are using the USB adapter and do not have the USB port installed, the Windows program to add this new hardware will begin. Follow the

on-screen instructions to install the USB driver. After installing and restarting your computer, run VoiceCenter and complete the Audio Setup Wizard.

Note: To avoid installation problems, install the device driver before connecting the microphone to your computer.

Adjusting properties of your microphone

There are no audio properties that are unique to your microphone. The ViaVoice software and the software that is provided with your microphone automatically adjust your microphone for optimum performance.

When using other audio recording programs, like the built-in Windows sound recorder, there are properties you should be aware of.

- For example, the default sample rate of Windows' sound recorder is too slow for a high-quality microphone like the UltraPort Digital Array Microphone. Increasing the sample rate will result in higher fidelity and a clearer sound.

Using the microphone

This section tells how to correctly position and speak into the UltraPort Digital Array Microphone. It also presents hints, tips, and maintenance procedures.

Placement and noise reduction

For microphone placement, consider the following:

- When using the UltraPort Digital Array Microphone with ViaVoice software, the distance from your mouth to the microphone should be approximately 12 to 18 inches. For consistent results with ViaVoice software, if you change the position or the distance of the UltraPort Digital Array Microphone, re-run the microphone wizard to re-calibrate your recording levels.
- Try to orient the microphone so noise sources are to the side or rear of the unit. If a noise source is directly in front of the microphone, try to position the computer so the noise source is to the side or rear of the microphone. The array microphone picks up sound from the front and rejects sound from the side and rear.

For noise reduction, consider the following:

- For best results, speak from the front of the microphone. The array of microphones in your unit selectively rejects signals outside of a reception cone. The reception cone is directly in front of your microphone, so any signals to the side or behind your microphone will be significantly reduced.
- The array microphone is also adaptive and very good at rejecting constant noise sources, at all orientations, even directly in front of the unit. Examples

of constant noise sources are fans, air exchanges, and air conditioners. The microphone constantly monitors the sounds that are received and within a few seconds will cancel out these constant noise sources.

Hints and tips

For best results when using the microphone, do the following:

- Do not detach the microphone while an application is running.
- Do not attempt to connect more than one microphone to your computer. Even though your computer might have ports for two or more microphones, applications can use only one microphone at a time.
- Do not place an operating cellular phone on your computer when using the microphone. It might cause a system malfunction.

Microphone maintenance

To maintain your microphone, do the following:

- Keep the microphone away from moisture and temperature extremes.
- Clean the outside of the microphone with a clean, dry cloth.

Appendix A. Troubleshooting

This section provides troubleshooting suggestions. If you continue to experience problems, or the problem is not covered by this guide, see Appendix B.

The microphone does not work

If the microphone does not work, try the following:

1. Make sure the microphone is correctly connected to your computer. See the previous section for installation instructions.
2. Make sure the device drivers are correctly installed. See the previous section for software installation instructions.
3. Make sure the application that is using the microphone has not muted or reduced the volume.
4. Make sure the microphone is the selected audio recording device for the application.

The microphone does not record clearly

If the microphone does not record clearly, try the following:

1. Make sure the UltraPort Digital Array Microphone is selected. The built-in microphone must not be selected.
2. Speak from a position of 12-18 inches from the front of the microphone.
3. With ViaVoice software, run the audio setup wizard again to reset the recording levels.

The microphone is not rejecting background noises

If the microphone is not rejecting background noises, try the following:

1. Reposition the microphone to better reject background noise. See "Using the microphone" in the previous section.

Appendix B. Help and service information

This section contains information on how to obtain warranty information on the World Wide Web and online and telephone technical support.

Note: For ViaVoice technical support and warranty information, see Appendix A in your manual on the ViaVoice CD.

Warranty information on the World Wide Web

The IBM Machine Warranties Web site at http://www.ibm.com/servers/support/machine_warranties/ contains a worldwide overview of the IBM Limited Warranty for IBM Machines, a glossary of terms used in the Statement of Limited Warranty, Frequently Asked Questions (FAQ), and links to Product Support Web pages. The IBM Statement of Limited Warranty is available from this Web site in 29 languages in Portable Document Format (PDF).

Online technical support

Online technical support is available during the life of your product. Online assistance can be obtained through the Personal Computing Support Web site and the IBM Automated Fax System.

<i>Online technical support</i>	
IBM Personal Computing Support Web site	http://www.ibm.com/pc/support
IBM Automated Fax System	1-800-426-3395 (U.S. and Canada)

During the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your IBM option is installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Telephone technical support

Installation and configuration support through the HelpCenter will be withdrawn or made available for a fee, at IBM's discretion, 90 days after the option has been withdrawn from marketing. Additional support offerings, including step-by-step installation assistance, are available for a nominal fee.

To assist the technical support representative, have available as much of the following information as possible:

- Option name

- Option number
- Proof of purchase
- Computer manufacturer, model, serial number (if IBM), and manual
- Exact wording of the error message (if any)
- Description of the problem
- Hardware and software configuration information for your system

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

For the support telephone number and support hours by country, refer to the following table. If the number for your country or region is not listed, contact your IBM reseller or IBM marketing representative. Response time may vary depending on the number and nature of the calls received.

<i>Support 24 hours a day, 7 days a week</i>	
Canada (Toronto only)	416-383-3344
Canada (all other)	1-800-565-3344
U.S.A. and Puerto Rico	1-800-772-2227
All other countries and regions	Go to http://www.ibm.com/pc/support/ , and click Support Phone List .

Appendix C. Product warranties and notices

This appendix contains warranty information and notices.

Warranty Statements

The warranty statements consist of two parts: Part 1 and Part 2. Part 1 varies by country. Part 2 is the same for both statements. Be sure to read both the Part 1 that applies to your country and Part 2.

- **United States, Puerto Rico, and Canada (Z125-4753-05 11/97)** (see “IBM Statement of Limited Warranty for United States, Puerto Rico, and Canada (Part 1 - General Terms)”)
- **Worldwide except Canada, Puerto Rico, Turkey, and United States (Z125-5697-01 11/97)** (see “IBM Statement of Warranty Worldwide except Canada, Puerto Rico, Turkey, United States (Part 1 - General Terms)” on page C-5)
- **Worldwide Country-Unique Terms** (see “Part 2 - Worldwide Country-Unique Terms” on page C-8)

IBM Statement of Limited Warranty for United States, Puerto Rico, and Canada (Part 1 - General Terms)

This Statement of Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1. The warranties provided by IBM in this Statement of Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

Machine - IBM UltraPort Digital Array Microphone

Warranty period* - One (1) year

** Contact your place of purchase for warranty service information. Some IBM Machines are eligible for on-site warranty service depending on the country where service is performed.*

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with “how-to” questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for the Machine, contact your reseller or IBM. In the United States, call IBM at 1-800-772-2227. In Canada, call IBM at 1-800-565-3344. (In Toronto, call 416-383-3344.) You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,

- b. secure all programs, data, and funds contained in a Machine,
- c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations, and
- d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than

- 1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
- 2. the amount of any other actual direct damages, up to the greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT

ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

IBM Statement of Warranty Worldwide except Canada, Puerto Rico, Turkey, United States (Part 1 - General Terms)

This Statement of Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1. The warranties provided by IBM in this Statement of Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

Machine - IBM UltraPort Digital Array Microphone

Warranty period* - One (1) year

** Contact your place of purchase for warranty service information. Some IBM Machines are eligible for on-site warranty service depending on the country where service is performed.*

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with “how-to” questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for the Machine, contact your reseller or IBM. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and

unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
 - b. secure all programs, data, and funds contained in a Machine,
 - c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations, and
 - d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Part 2 - Worldwide Country-Unique Terms

ASIA PACIFIC

AUSTRALIA: The IBM Warranty for Machines: The following paragraph is added to this Section: The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other legislation and are only limited to the extent permitted by the applicable legislation.

Extent of Warranty: The following replaces the first and second sentences of this Section: The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

Limitation of Liability: The following is added to this Section: Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974, IBM's liability is limited to the repair or replacement of the goods or the

supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

PEOPLE'S REPUBLIC OF CHINA: Governing Law: The following is added to this Statement: The laws of the State of New York govern this Statement.

INDIA: Limitation of Liability: The following replaces items 1 and 2 of this Section:

1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

NEW ZEALAND: The IBM Warranty for Machines: The following paragraph is added to this Section: The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: The following is added to this Section: Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

The following terms apply to all EMEA countries.

The terms of this Statement of Warranty apply to Machines purchased from an IBM reseller. If you purchased this Machine from IBM, the terms and conditions of the applicable IBM agreement prevail over this warranty statement.

Warranty Service

If you purchased an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or

United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchased an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

The applicable laws, Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided. However, the laws of Austria govern this Statement if the warranty service is provided in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, and Ukraine.

The following terms apply to the country specified:

EGYPT: Limitation of Liability: The following replaces item 2 in this Section: 2. as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

FRANCE: Limitation of Liability: The following replaces the second sentence of the first paragraph of this Section: In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).

GERMANY: The IBM Warranty for Machines: The following replaces the first sentence of the first paragraph of this Section: The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section: The minimum warranty period for Machines is six months.

In case IBM or your reseller are unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

Extent of Warranty: The second paragraph does not apply.

Warranty Service: The following is added to this Section: During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Production Status: The following paragraph replaces this Section: Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.

Limitation of Liability: The following is added to this Section: The limitations and exclusions specified in the Statement of Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

In item 2, replace "U.S. \$100,000" with "1.000.000 DEM."

The following sentence is added to the end of the first paragraph of item 2: IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

IRELAND: Extent of Warranty: The following is added to this Section: Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: The following replaces items one and two of the first paragraph of this Section: 1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to the greater of Irish Pounds 75,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY: Limitation of Liability: The following replaces the second sentence in the first paragraph: In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: (item 1 unchanged) 2) as to any other actual damage arising in all situations involving non-performance by

IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

The following replaces the second paragraph of this Section: Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: (items 1 and 2 unchanged) 3) indirect damages, even if IBM or your reseller is informed of their possibility.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND:

Limitation of Liability: The following is added to this Section: IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

TURKEY: Production Status: The following replaces this Section: IBM fulfills customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

UNITED KINGDOM: Limitation of Liability: The following replaces items 1 and 2 of the first paragraph of this Section:

1. death or personal injury or physical damage to your real property solely caused by IBM's negligence;
2. the amount of any other actual direct damages or loss, up to the greater of Pounds Sterling 150,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

The following item is added to this paragraph: 3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default will be limited to damages.

NORTH AMERICA

CANADA: Warranty Service: The following is added to this section: To obtain warranty service from IBM, call **1-800-565-3344**. In Toronto, call **416-383-3344**.

UNITED STATES OF AMERICA: Warranty Service: The following is added to this section: To obtain warranty service from IBM, call **1-800-772-2227**.

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Electronic emission notices

Federal Communications Commission (FCC) statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the 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 separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Telephone: 1-919-543-2193



Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE

Industry Canada Class B emission compliance statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de classe B est conforme à la norme NMB-003 du Canada.

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM UK, Greenock.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

European Union - emission directive

This product is in conformity with the protection requirements of EU Council Directive 89/366/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Union Européenne - Directive Conformité électromagnétique

Ce produit est conforme aux exigences de protection de la Directive 89/336/EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

Ce produit a été testé et il satisfait les conditions de l'équipement informatique de Classe B en vertu de CISPR22/Standard européen EN 55022. Les conditions

pour l'équipement de Classe B ont été définies en fonction d'un contexte résidentiel ordinaire afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

Unione Europea - Directiva EMC (Conformidad electromagnética)

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/336/CEE en lo que a la legislación de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con el Estándar CISPR22 y el Estándar Europeo EN 55022. Los límites para los equipos de Clase B se han establecido para entornos residenciales típicos a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

Union Europea - Normativa EMC

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 89/336/CEE sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

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