

lenovo

**Lenovo 512 MB NVIDIA GeForce 310
DMS-59 Dual-DVI, Dual-VGA Graphics
Card User Guide**

lenovo

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DMS-59 Dual-DVI, Dual-VGA Graphics
Card User Guide**

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Online safety information resources

For tips to help you use your computer safely, go to:

<http://www.lenovo.com/safety>

Para obter dicas para ajudá-lo a usar o computador com segurança, acesse:

<http://www.lenovo.com/safety>

Pour obtenir des astuces pour utiliser votre ordinateur en toute sécurité, consultez le site :

<http://www.lenovo.com/safety>

Tipps zum sicheren Umgang mit dem Computer finden Sie unter:

<http://www.lenovo.com/safety>

Per suggerimenti su un utilizzo sicuro del computer, visitare il sito all'indirizzo:

<http://www.lenovo.com/safety>

Para obtener consejos sobre cómo utilizar el sistema de forma segura, vaya a:

<http://www.lenovo.com/safety>

Informácie o bezpečnom používaní počítača nájdete na webovej stránke:

<http://www.lenovo.com/safety>

Bilgisayarınızı güvenli kullanmanıza ilişkin ipuçları için lütfen aşağıdaki adrese bakın:
<http://www.lenovo.com/safety>

Rady, jak bezpečně používat počítač, najdete na webové adrese:
<http://www.lenovo.com/safety>

コンピューターの安全なご使用方法に役立つヒントについては、次のサイトに
アクセスしてください。
<http://www.lenovo.com/safety>

要获取安全使用计算机的帮助提示, 请访问:
<http://www.lenovo.com/safety>

若要得知可協助您安全使用電腦的要訣, 請造訪:
<http://www.lenovo.com/safety>

Chapter 1. About the Lenovo 512 MB NVIDIA GeForce 310 DMS-59 Dual-DVI, Dual-VGA Graphics Card

This chapter contains product information for the Lenovo® 512 MB NVIDIA GeForce 310 DMS-59 Dual-DVI, Dual-VGA Graphics Card (hereafter called the graphics card).

Note: The appendices of this guide contain warranty information and legal notices.

Product description

The graphics card uses the Geforce 310 GPU (Graphics Processor Unit) to process graphics. The graphics card is a PCI Express (Peripheral Component Interconnect Express), half-height, add-in card. It is shipped with 512 MB graphics double-data-rate three (GDDR3) memory and can support up to two monitors simultaneously. You can attach either digital monitors or analog monitors with the provided DMS-59 monitor cables to a desktop computer that has the graphics card installed.

The option package contains the following:

- The graphics card with a fitted low-profile bracket
- Full-height bracket
- *Software and User Guide CD*
- DMS-59 to Dual-DVI monitor cable
- DMS-59 to Dual-VGA monitor cable
- Warranty book

Supported operating systems

The *Software and User Guide CD* contains software for the following operating systems:

- Microsoft® Windows® 7
- Microsoft Windows Vista®
- Microsoft Windows XP

To use the graphics card with your computer, make sure that you are using one of the above operating systems.

Online resources

For more information about the graphics card, including online technical support, go to:
<http://www.lenovo.com/support/graphiccards>

For more information on Lenovo accessories, including compatibility, go to:
<http://www.lenovo.com/accessoriesguide/>

Chapter 2. Installing the Lenovo 512 MB NVIDIA GeForce 310 DMS-59 Dual-DVI, Dual-VGA Graphics Card

This chapter contains instructions for installing the graphics card. It also includes instructions for installing and uninstalling the device driver.

Before you begin

Before you install the graphics card, take the following precautions to prevent static electricity from damaging electronic parts:

- Before touching any electronic parts, drain the static electricity from your body. You can do this by touching the metal frame of your computer.
- Do not remove the graphics card from the antistatic shipping container until you are ready to install it. When you remove the graphics card from your computer, place it in its original container.
- When handling the graphics card, hold it by its edges, and avoid touching its circuitry.

Note: Check the appropriate support Web sites for the latest updates for your basic input/output system (BIOS) code, utility programs, device drivers, and other software applications. Follow the instructions provided by your Service Provider to download and install updates.

Online technical support is available through the Lenovo Support Web site at:
<http://www.lenovo.com/support/>

Installing the graphics card

To install the graphics card, do the following:

1. Prepare your computer for graphics card installation by doing the following:
 - a. Turn off all attached devices and then turn off the computer.
 - b. Unplug all cords and power cables from the computer and all attached devices.
 - c. Remove the computer cover. For instructions on how to remove the cover, refer to the user guide that comes with your computer.
2. Choose a PCI Express x16 expansion slot.
3. Remove the expansion slot cover for the selected expansion slot. Save the screw if there is one to use with the mounting bracket of the graphics card.

Attention: Inserting a graphics card into an incorrect type of expansion slot might damage your card, your computer, or both. To identify the location of each type of expansion slot in your computer, refer to the user guide that comes with your computer.

4. Position the graphics card over the selected expansion slot. Push the graphics card in firmly and evenly until it is fully seated in the slot.

Notes:

- a. Depending on the size of the chassis in which you want to install the graphics card, you might need to replace the low-profile bracket on the graphics card with the provided full-height bracket.
 - b. Do not insert the plastic tab next to the connector pins into the expansion slot.
 - c. If the graphics card has an auxiliary power connector, attach it to the system power supply.
5. Tighten the screw if necessary to secure the mounting bracket of the graphics card in place.
 6. Reinstall the computer cover.
 7. Reattach the cords, power cables, and external devices to the computer.

Installing the device driver on Windows operating systems

To install the device driver on the Windows XP, Windows Vista, or Windows 7 operating system, do the following:

1. Save any open documents and exit all applications.
2. Insert the *Software and User Guide CD* and do one of the following:
 - If the CD starts automatically, go to step 3.
 - If the AutoPlay window opens, click **Run start.bat**. Then, go to step 3.
 - If the CD does not start automatically, go into **My Computer** or **Computer**, browse the CD/DVD drive, and double-click **Start.bat**.
3. At the prompt of the Internet Explorer® warning message, click **Yes** to allow the CD to run active content.
4. Select your language.
5. On the left side of the window, click **Software**.
6. Follow the instructions on the screen.

Uninstalling the device driver from Windows operating systems

To uninstall the device driver from the Windows XP, Windows Vista, or Windows 7 operating system, do the following:

For the Windows XP operating system:

1. Click **Start** → **Control Panel** or **Start** → **Settings** → **Control Panel**.
2. Depending on your Control Panel mode, click or double-click **Add or Remove Programs**.
3. Click **NVIDIA Drivers**, and then click **Remove**.
4. When prompted, click **Yes** to confirm that you want to remove the device driver.
5. When prompted, click **Yes** to restart the computer.

For the Windows Vista or Windows 7 operating system:

1. Click **Start** → **Control Panel** or **Start** → **Settings** → **Control Panel**.
2. Depending on your Control Panel mode, do one of the following:
 - Click the **Uninstall a program** option under the **Programs** menu.
 - Click **Programs and Features**.
 - Double-click **Programs and Features**.
3. Select **NVIDIA Drivers** and then right-click your mouse. The **Uninstall** option will be displayed.
4. Click **Uninstall**.
5. When prompted, click **Yes** to confirm that you want to remove the device driver.
6. When prompted, click **Yes** to restart the computer.

Appendix A. Service and Support

The following information describes the technical support that is available for your product, during the warranty period or throughout the life of your product. Refer to the Lenovo Limited Warranty for a full explanation of Lenovo warranty terms.

Online technical support

Online technical support is available during the lifetime of a product at:
<http://www.lenovo.com/support>

Product replacement assistance or exchange of defective components also is available during the warranty period. A Lenovo technical support representative can help you determine the best alternative. In addition, if your Lenovo option is installed into a Lenovo computer, the option takes on the warranty of the computer in which it is installed. For many Lenovo computers, this can entitle the Lenovo option for warranty service up to three years.

Telephone technical support

Installation and configuration support through the Customer Support Center will be available until 90 days after the option has been withdrawn from marketing. After that time, the support is cancelled, or made available for a fee, at Lenovo's discretion. Additional support is also available for a nominal fee.

Before contacting a Lenovo technical support representative, please have the following information available: option name and number, proof of purchase, computer manufacturer, model, serial number and manual, the exact wording of any error message, description of the problem, and the hardware and software configuration information for your system.

Your technical support representative might want to walk you through the problem while you are at your computer during the call.

Country or Region	Language	Telephone Number
Africa	--	Africa +44 (0)1475-555-055 South Africa +27-11-3028888, 0800110756, and +27-11-3027252 Central Africa Contact the nearest Business Partner
Argentina	Spanish	0800-666-0011
Australia	English	131-426
Austria	German	43 810-100654 (Warranty service and support)
Belgium	Dutch	02-225-3611 (Warranty service and support)
	French	02-225-3611 (Warranty service and support)
Bolivia	Spanish	0800-10-0189
Brazil	Brazilian Portuguese	Calls made from within the Sao Paulo region (11) 3889-8986 Calls made from outside the Sao Paulo region 0800-701-4815

Country or Region	Language	Telephone Number
Brunei	English, Bahasa Melayu	801-1041
Canada	English, French	1-800-565-3344
Caribbean (Bermuda, Jamaica, Tortola)	English	1-877-426-7378
Chile	Spanish	800-361-213 or 188-800-442-488 Toll free
China	Mandarin	ThinkPad® battery recall 8008103315 (Toll free) 86-10-58859595
		Technical Support Line 800-990-8888 86-10-58851110
China (Hong Kong S.A.R.)	Cantonese, English, Mandarin	ThinkPad battery recall 2516-3900 (Hong Kong)
		ThinkPad (Technical enquiry hotline): 2516-3939 (Hong Kong)
		ThinkPad Service Center: 2825-6580 (Hong Kong)
		ThinkCentre® Commercial PC: 8205-0333 (Hong Kong)
		Multimedia Home PC: 800-938-228 (Hong Kong)
China (Macau S.A.R.)	Cantonese, English, Mandarin	ThinkPad battery recall 0800-839 (Macau)
		ThinkPad (Technical enquiry hotline): 0800-839 (Macau)
		ThinkPad Service Center: 2871-5399 (Macau)
		ThinkCentre Commercial PC: 795-9892 (Macau)
		Multimedia Home PC: 0800-336 (Macau)
Colombia	Spanish	1-800-912-3021
Costa Rica	Spanish	0-800-011-1029
Croatia	--	0800-0426
Cyprus	--	+357-22-841100
Czech Republic	--	+420-2-7213-1316
Denmark	Danish	7010-5150 (Warranty service and support)
Dominican Republic	Spanish	1-866-434-2080
Ecuador	Spanish	1-800-426911
Egypt	--	+202-35362525
El Salvador	Spanish	800-6264
Estonia	--	+372 66 00 800 +372 6776793

Country or Region	Language	Telephone Number
Finland	Finnish	+358-800-1-4260 (Warranty service and support)
France	French	Hardware 0810-631-213 (Warranty service and support)
		Software 0810-631-020 (Warranty service and support)
Germany	German	01805-004618
Greece	--	+30-210-680-1700
Guatemala	Spanish	1800-624-0051
Honduras	Spanish	Tegucigalpa: 232-4222 San Pedro Sula: 552-2234
Hungary	English, Hungarian	+36 1 3825716 +36 1 3825720
India	English	1800-425-2666 +91-80-2535-9182
Indonesia	English, Bahasa Indonesian	021 5238 823 001-803-606-282 (Local number only) +603 8315 6859 (DID)
Ireland	English	01-881-1444 (Warranty service and support)
Israel	Hebrew, English	ThinkPad battery recall 972-3-5313742 (03-5313742)
	Hebrew, English	+972-3-531-3900 - Givat Shmuel Service Center
Italy	Italian	+39-800-820094 (Warranty service and support)
Japan	--	ThinkPad battery recall 0120-277-874
	Japanese, English	PC Products Toll free: 0120-20-5550 For International: +81-46-266-4716 Note: The above numbers will be answered with a Japanese language voice prompt. For telephone support in English, please wait for the Japanese voice prompt to end, and an operator will answer. Please ask for "English support please," and your call will be transferred to an English speaking operator.
	Japanese	IntelliStation and xSeries Inside Japan and overseas calls: +81-46-266-1358
	Japanese	PC Software 0120-558-695 (Overseas calls: +81-44-200-8666)
Korea	Korean	1588-6782
Latvia	--	+371 7070360
Lithuania	--	+370 5 278 66 00
Luxembourg	French	+352-360-385-343
Malaysia	English, Bahasa Melayu	1800-88-1889 (Local number only) +603 8315 6855 (DID)
Malta	--	+35621445566
Mexico	Spanish	001-866-434-2080

Country or Region	Language	Telephone Number
Middle East	--	+44 (0)1475-555-055
Netherlands	Dutch	+31-20-514-5770
New Zealand	English	0800-733-222
Nicaragua	Spanish	001-800-220-1830
Norway	Norwegian	8152-1550 (Warranty service and support)
Panama	Spanish	206-6047
		001-866-434-2080 (Lenovo Customer Support Center - Toll free)
Peru	Spanish	0-800-50-866
Philippines	English, Filipino	1800-1601-0033 (Local number only) +603 8315 6858 (DID)
Poland	Polski	General number +48 22 760-73-00
Portugal	Portuguese	+351 21 892 7046
Romania	--	+4-021-224-4015
Russia	Russian	Moscow +7 (495) 258 6300 Toll free 8 800 200 6300
Singapore	English	800 6011 343 (Local number only) +603 8315 6856 (DID)
Slovakia	--	+421-2-4954-5555
Slovenia	Slovenian	+386-1-200-50-60
Spain	Spanish	91-714-7983 0901-100-000
Sri Lanka	English	+9411 2493547 +9411 2493548
Sweden	Swedish	077-117-1040 (Warranty service and support)
Switzerland	German, French, Italian	0800-55-54-54 (Warranty service and support)
Taiwan	Mandarin	886-2-8723-9799 0800-000-700
Thailand	Thai, English	1-800-060-066 (Local number only) 66 2273 4088 +603 8315 6857 (DID)
Trinidad and Tobago	English	1-800-645-3330
Turkey	Turkish	00800-4463-2041
United Kingdom	English	08705-500-900 (Standard warranty support)
United States	English	1-800-426-7378 For Aptiva 2270 or NetVista 2276 systems: 1-800-584-9182
Uruguay	Spanish	000-411-005-6649
Venezuela	Spanish	0-800-100-2011

Country or Region	Language	Telephone Number
Vietnam	Vietnamese, English	For Northern Area and Hanoi City: 844 3 946 2000 or 844 3 942 6457 For Southern Area and Ho Chi Minh City: 848 3 829 5160 or 844 3 942 6457

Appendix B. Lenovo Limited Warranty

L505-0010-01 04/2008

This Lenovo Limited Warranty applies only to Lenovo branded hardware products you purchased for your own use and not for resale. This Lenovo Limited Warranty is available in other languages at www.lenovo.com/warranty.

What this Warranty Covers

Lenovo warrants that each hardware product that you purchase is free from defects in materials and workmanship under normal use during the warranty period. The warranty period for the product starts on the original date of purchase specified on your sales receipt or invoice unless Lenovo informs you otherwise in writing. The warranty period and type of warranty service that apply to your product are designated below under the section titled "**Warranty Information.**"

THIS WARRANTY IS YOUR EXCLUSIVE WARRANTY AND REPLACES 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. SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES APPLY ONLY TO THE EXTENT REQUIRED BY LAW AND ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD. SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION ON DURATION MAY NOT APPLY TO YOU.

How to Obtain Warranty Service

If the product does not function as warranted during the warranty period, you may obtain warranty service by contacting Lenovo or an approved service provider. Each of them is referred to as a "Service Provider." A list of Service Providers and their telephone numbers is available at www.lenovo.com/support/phone.

Warranty service may not be available in all locations and may differ from location to location. Charges may apply outside a Service Provider's normal service area. Contact a local Service Provider for location-specific information.

What Your Service Provider Will Do to Correct Problems

When you contact a Service Provider, you must follow the problem determination and resolution procedures specified.

Your Service Provider will attempt to diagnose and resolve your problem over the telephone, e-mail, or through remote assistance. Your Service Provider may direct you to download and install designated software updates.

Some problems can be resolved with a replacement part that you can install yourself called a "Customer Replaceable Unit" or "CRU." If so, your Service Provider will ship the CRU to you for you to install.

If your problem cannot be resolved over the telephone or remotely, through your application of software updates or the installation of a CRU by you, your Service Provider will arrange for service under the type of warranty service designated for the product under the section titled "**Warranty Information.**"

If your Service Provider determines that it is unable to repair your product, your Service Provider will replace it with one that is at least functionally equivalent.

If your Service Provider determines that it is unable to either repair or replace your product, your sole remedy is to return the product to your place of purchase or to Lenovo for a refund of your purchase price.

Replacement of a Product or Part

When the warranty service involves the replacement of a product or part, the replaced product or part becomes Lenovo's property and the replacement product or part becomes your property. Only unaltered Lenovo products and parts are eligible for replacement. The replacement product or part provided by Lenovo may not be new, but it will be in good working order and at least functionally equivalent to the original product or part. The replacement product or part shall be warranted for the balance of the period remaining on the original product.

Before your Service Provider replaces a product or part, you agree to:

1. remove all features, parts, options, alterations, and attachments not under warranty service;
2. ensure that the product or part is free of any legal obligations or restrictions that prevent its replacement; and
3. obtain authorization from the owner to have your Service Provider service a product or part if you do not own it.

Your Additional Responsibilities

Where applicable, before service is provided, you agree to:

1. follow the service request procedures that your Service Provider specifies;
2. backup or secure all programs and data contained in the product;
3. provide your Service Provider with all system keys or passwords and sufficient, free, and safe access to your facilities to perform service; and
4. ensure that all information about identified or identifiable individuals ("Personal Data") is deleted from the product or that, with respect to any Personal Data that you did not delete, you are in compliance with all applicable laws.

Use of Personal Information

If you obtain service under this warranty, Lenovo will store, use, and process information about your warranty service and your contact information, including name, phone numbers, address, and e-mail address. Lenovo will use this information to perform service under this warranty and to improve our business relationship with you. We may contact you to inquire about your satisfaction regarding our warranty service or to notify you about any product recalls or safety issues. In accomplishing these purposes, we may transfer your information to any country where we do business and may provide it to entities acting on our behalf. We may also disclose it where required by law.

What this Warranty Does not Cover

This warranty does not cover the following:

- uninterrupted or error-free operation of a product;
- loss of, or damage to, your data;
- any software programs, whether provided with the product or installed subsequently;
- failure or damage resulting from misuse, accident, modification, unsuitable physical or operating environment, natural disasters, power surges, or improper maintenance by you;
- damage caused by a non-authorized service provider;
- failure of, or damage caused by, any third party products, including those that Lenovo may provide or integrate into the Lenovo product at your request; and

- any technical or other support, such as assistance with "how-to" questions and those regarding product set-up and installation.

This warranty is voided by removal or alteration of identification labels on the product or its parts.

Limitation of Liability

Lenovo is responsible for loss or damage to your product only while it is: 1) in your Service Provider's possession; or 2) in transit in those cases where the Service Provider is responsible for the transportation.

Neither Lenovo nor your Service Provider is responsible for any of your data including confidential, proprietary, or personal data contained in a product. You should remove and/or backup all such information from the product prior to its service or return.

Circumstances may arise where, because of a default on Lenovo's part or other liability, you may be entitled to recover damages from Lenovo. In each such instance, regardless of the basis of your claim against Lenovo (including breach, negligence, misrepresentation, or other contract or tort claim), except and to the extent that liability cannot be waived or limited by applicable laws, Lenovo shall not be liable for more than the amount of actual direct damages suffered by you, up to the amount you paid for the product. This limit does not apply to damages for bodily injury (including death) and damage to real property or tangible personal property for which Lenovo is liable under law.

This limit also applies to Lenovo's suppliers, resellers, and your Service Provider. It is the maximum amount for which Lenovo, its suppliers, resellers, and your Service Provider are collectively responsible.

UNDER NO CIRCUMSTANCES SHALL LENOVO, ITS SUPPLIERS, RESELLERS, OR SERVICE PROVIDERS BE LIABLE FOR ANY OF THE FOLLOWING EVEN IF INFORMED OF THEIR POSSIBILITY: 1) THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES; 2) LOSS OR DAMAGE TO YOUR DATA; OR 3) SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, BUSINESS REVENUE, GOODWILL OR ANTICIPATED SAVINGS. AS SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Dispute Resolution

If you acquired the product in **Cambodia, Indonesia, Philippines, Vietnam or Sri Lanka**, disputes arising out of or in connection with this warranty shall be finally settled by arbitration held in Singapore and this warranty shall be governed, construed and enforced in accordance with the laws of Singapore, without regard to conflict of laws. If you acquired the product in **India**, disputes arising out of or in connection with this warranty shall be finally settled by arbitration held in Bangalore, India. Arbitration in Singapore shall be held in accordance with the Arbitration Rules of Singapore International Arbitration Center ("SIAC Rules") then in effect. Arbitration in India shall be held in accordance with the laws of India then in effect. The arbitration award shall be final and binding on the parties without appeal. Any award shall be in writing and set forth the findings of fact and the conclusions of law. All arbitration proceedings, including all documents presented in such proceedings, shall be conducted in the English language, and the English language version of this warranty prevails over any other language version in such proceedings.

Other Rights

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR JURISDICTION TO JURISDICTION. YOU MAY ALSO HAVE OTHER RIGHTS UNDER APPLICABLE LAW OR WRITTEN AGREEMENT WITH LENOVO. NOTHING IN THIS WARRANTY AFFECTS STATUTORY RIGHTS, INCLUDING RIGHTS OF

CONSUMERS UNDER NATIONAL LEGISLATION GOVERNING THE SALE OF CONSUMER GOODS THAT CANNOT BE WAIVED OR LIMITED BY CONTRACT.

European Economic Area (EEA)

Customers in the EEA may contact Lenovo at the following address: EMEA Service Organisation, Lenovo (International) B.V., Floor 2, Einsteinova 21, 851 01, Bratislava, Slovakia. Service under this warranty for Lenovo hardware products purchased in EEA countries may be obtained in any EEA country in which the product has been announced and made available by Lenovo.

Warranty Information

Product Type	Country or Region of Purchase	Warranty Period	Type of Warranty Service
Lenovo 512 MB NVIDIA GeForce 310 DMS-59 Dual-DVI, Dual-VGA Graphics Card	Worldwide	1 year	1, 4

If required, your Service Provider will provide repair or exchange service depending on the type of warranty service specified for your product and the available service. Scheduling of service will depend upon the time of your call, parts availability, and other factors.

A warranty period of three (3) years on parts and one (1) year on labor means that Lenovo will provide warranty service without charge for:

- a. parts and labor during the first year of the warranty period (or a longer period as required by law); and
- b. parts only, on an exchange basis, in the second and third years of the warranty period. Your Service Provider will charge you for any labor provided in performance of the repair or replacement in the second and third years of the warranty period.

Types of Warranty Service

1. Customer Replaceable Unit ("CRU") Service

Under CRU Service, your Service Provider will ship CRUs to you for installation by you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. CRUs that are easily installed by you are called Self-service CRUs, while Optional-service CRUs may require some technical skill and tools. Installation of Self-service CRUs is your responsibility. You may request that a Service Provider install Optional-service CRUs under one of the other types of warranty service designated for your product. An optional service offering may be available for purchase from Lenovo to have Lenovo install Self-service CRUs for you. You may find a list of CRUs and their designation in the publication that ships with your product or at www.lenovocom/CRUs. The requirement to return a defective CRU, if any, will be specified in the materials shipped with a replacement CRU. When return is required: 1) return instructions, a prepaid return shipping label, and a container will be included with the replacement CRU; and 2) you may be charged for the replacement CRU if your Service Provider does not receive the defective CRU within thirty (30) days of your receipt of the replacement.

2. On-site Service

Under On-Site Service, your Service Provider will either repair or exchange the product at your location. You must provide a suitable working area to allow disassembly and reassembly of the Lenovo product. For some products, certain repairs may require your Service Provider to send the product to a designated service center.

3. Courier or Depot Service

Under Courier or Depot Service, your product will be repaired or exchanged at a designated service center, with shipping arranged by your Service Provider. You are responsible for disconnecting the product. A shipping container will be provided to you for you to return your product to a designated service center. A courier will pick up your product and deliver it to the designated service center. Following its repair or exchange, the service center will arrange the return delivery of the product to you.

4. Customer Carry-In or Mail-In Service

Under Customer Carry-In or Mail-In Service, your product will be repaired or exchanged at a designated service center, with delivery or shipping arranged by you. You are responsible to deliver or mail, as your Service Provider specifies, (prepaid by you unless specified otherwise) the product, suitably packaged to a designated location. After the product has been repaired or exchanged, it will be made available for your collection. Failure to collect the product may result in your Service Provider disposing of the product as it sees fit. For Mail-in Service, the product will be returned to you at Lenovo's expense, unless your Service Provider specifies otherwise.

5. Product Exchange Service

Under Product Exchange Service, Lenovo will ship a replacement product to your location. You are responsible for its installation and verification of its operation. The replacement product becomes your property in exchange for the failed product, which becomes the property of Lenovo. You must pack the failed product in the shipping carton used to ship the replacement product and return it to Lenovo. Transportation charges, both ways, are paid by Lenovo. Failure to use the carton in which the replacement product was received may result in your responsibility for damage to the failed product during shipment. You may be charged for the replacement product if Lenovo does not receive the failed product within thirty (30) days of your receipt of the replacement product.

Suplemento de Garantía para México

Este Suplemento se considera parte integrante de la Garantía Limitada de Lenovo y será efectivo única y exclusivamente para los productos distribuidos y comercializados dentro del Territorio de los Estados Unidos Mexicanos. En caso de conflicto, se aplicarán los términos de este Suplemento.

Todos los programas de software precargados en el equipo sólo tendrán una garantía de treinta (30) días por defectos de instalación desde la fecha de compra. Lenovo no es responsable de la información incluida en dichos programas de software y/o cualquier programa de software adicional instalado por Usted o instalado después de la compra del producto.

Los servicios no cubiertos por la garantía se cargarán al usuario final, previa obtención de una autorización.

En el caso de que se precise una reparación cubierta por la garantía, por favor, llame al Centro de soporte al cliente al 001-866-434-2080, donde le dirigirán al Centro de servicio autorizado más cercano. Si no existiese ningún Centro de servicio autorizado en su ciudad, población o en un radio de 70 kilómetros de su ciudad o población, la garantía incluirá cualquier gasto de entrega razonable relacionado con el

transporte del producto a su Centro de servicio autorizado más cercano. Por favor, llame al Centro de servicio autorizado más cercano para obtener las aprobaciones necesarias o la información relacionada con el envío del producto y la dirección de envío.

Para obtener una lista de los Centros de servicio autorizados, por favor, visite:

<http://www.lenovo.com/mx/es/servicios>

Imported by:
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Av. Santa Fe 505, Piso 15
Col. Cruz Manca
Cuajimalpa, D.F., México
C.P. 05349
Tel. (55) 5000 8500

Appendix C. Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

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*Lenovo (United States), Inc.
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Attention: Lenovo Director of Licensing*

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Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Recycling information

Lenovo encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Lenovo offers a variety of programs and services to assist equipment owners in recycling their IT products. For information on recycling Lenovo products, go to: <http://www.lenovo.com/lenovo/environment/recycling>

環境配慮に関して

本機器またはモニターの回収リサイクルについて

企業のお客様が、本機器が使用済みとなり廃棄される場合は、資源有効利用促進法の規定により、産業廃棄物として、地域を管轄する県知事あるいは、政令市長の許可を持った産業廃棄物処理業者に適正処理を委託する必要があります。また、弊社では資源有効利用促進法に基づき使用済みパソコンの回収および再利用・再資源化を行う「PC回収リサイクル・サービス」を提供しています。詳細は、<http://www.ibm.com/jp/pc/service/recycle/pcrecycle/> をご参照ください。

また、同法により、家庭で使用済みとなったパソコンのメーカー等による回収再資源化が2003年10月1日よりスタートしました。詳細は、<http://www.ibm.com/jp/pc/service/recycle/pcrecycle/> をご参照ください。

重金属を含む内部部品の廃棄処理について

本機器のプリント基板等には微量の重金属（鉛など）が使用されています。使用後は適切な処理を行うため、上記「本機器またはモニターの回収リサイクルについて」に従って廃棄してください。

Collecting and recycling a disused Lenovo computer or monitor

If you are a company employee and need to dispose of a Lenovo computer or monitor that is the property of the company, you must do so in accordance with the Law for Promotion of Effective Utilization of Resources. Computers and monitors are categorized as industrial waste and should be properly disposed of by an industrial waste disposal contractor certified by a local government. In accordance with the Law for Promotion of Effective Utilization of Resources, Lenovo Japan provides, through its PC Collecting and Recycling Services, for the collecting, reuse, and recycling of disused computers and monitors. For details, visit the Lenovo Web site at www.ibm.com/jp/pc/service/recycle/pcrecycle/. Pursuant to the Law for Promotion of Effective Utilization of Resources, the collecting and recycling of home-used computers and monitors by the manufacturer was begun on October 1, 2003. This service is provided free of charge for home-used computers sold after October 1, 2003. For details, visit the Lenovo Web site at www.ibm.com/jp/pc/service/recycle/personal/.

Disposing of Lenovo computer components

Some Lenovo computer products sold in Japan may have components that contain heavy metals or other environmental sensitive substances. To properly dispose of disused components, such as a printed circuit board or drive, use the methods described above for collecting and recycling a disused computer or monitor.

Trademarks

The following terms are trademarks of Lenovo in the United States, other countries, or both:

- Lenovo
- The Lenovo logo
- ThinkCentre
- ThinkPad

Microsoft, Windows, Windows Vista, and Internet Explorer are trademarks of the Microsoft group of companies.

Other company, product, or service names may be trademarks or service marks of others.

Appendix D. Electronic emission notices

The following information refers to the Lenovo 512 MB NVIDIA GeForce 310 DMS-59 Dual-DVI, Dual-VGA Graphics Card.

Federal Communications Commission Declaration of Conformity

Lenovo 512 MB NVIDIA GeForce 310 DMS-59 Dual-DVI, Dual-VGA Graphics Card - 57Y4167

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 authorized dealer or service representative for help.

Lenovo is not responsible for any radio or television interference caused by using other than specified or 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:

Lenovo (United States) Incorporated
1009 Think Place - Building One
Morrisville, NC 27560
Phone Number: 919-294-5900



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 la classe B est conforme à la norme NMB-003 du Canada.

EU-EMC Directive (2004/108/EC) EN 55022 class B Statement of Compliance



Deutschsprachiger EU Hinweis:

Hinweis für Geräte der Klasse B EU-Richtlinie zur Elektromagnetischen Verträglichkeit Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG (früher 89/336/EWG) zur

Angeleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse B ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der Lenovo empfohlene Kabel angeschlossen werden. Lenovo übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der Lenovo verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der Lenovo gesteckt/eingebaut werden.

Deutschland:

Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Betriebsmitteln Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln" EMVG (früher "Gesetz über die elektromagnetische Verträglichkeit von Geräten"). Dies ist die Umsetzung der EU-Richtlinie 2004/108/EWG (früher 89/336/EWG) in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln, EMVG vom 20. Juli 2007 (früher Gesetz über die elektromagnetische Verträglichkeit von Geräten), bzw. der EMV EG Richtlinie 2004/108/EC (früher 89/336/EWG), für Geräte der Klasse B.

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung nach Paragraf 5 des EMVG ist die Lenovo (Deutschland) GmbH, Gropiusplatz 10, D-70563 Stuttgart.

Informationen in Hinsicht EMVG Paragraf 4 Abs. (1) 4:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse B.

European Union - Compliance to the Electromagnetic Compatibility Directive

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Lenovo cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the installation of option cards from other manufacturers.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to 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.

Avis de conformité à la directive de l'Union Européenne

Le présent produit satisfait aux exigences de protection énoncées dans la directive 2004/108/EC du Conseil concernant le rapprochement des législations des Etats membres relatives à la compatibilité électromagnétique. Lenovo décline toute responsabilité en cas de non-respect de cette directive résultant d'une modification non recommandée du produit, y compris l'ajout de cartes en option non Lenovo.

Ce produit respecte les limites des caractéristiques d'immunité des appareils de traitement de l'information définies par la classe B de la norme européenne EN 55022 (CISPR 22). La conformité aux spécifications de la classe B offre une garantie acceptable contre les perturbations avec les appareils de communication agréés, dans les zones résidentielles.

Unión Europea - Normativa EMC

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 2004/108/EC en lo que a la legislación de los Estados Miembros sobre compatibilidad electromagnética se refiere.

Lenovo 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 Lenovo.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con 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.

Unione Europea - Directiva EMC (Conformidad electromagnética)

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 2004/108/EC sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

Lenovo non accetta responsabilità alcuna per la mancata conformità alle normative di protezione dovuta a modifiche non consigliate al prodotto, compresa l'installazione di schede e componenti di marca diversa da Lenovo.

Le prove effettuate sul presente prodotto hanno accertato che esso rientra nei limiti stabiliti per le apparecchiature di informatica Classe B ai sensi della Norma Europea EN 55022. I limiti delle apparecchiature della Classe B sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti residenziali tipici.

Korea Class B Compliance

사용자 안내문(B급 기기) 가정용 정보통신기기
이 기기는 가정용으로 전자파적합등록을 한 기기로서 주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Japan VCCI Class B Compliance

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

Lenovo product service information for Taiwan

台灣 Lenovo 產品服務資訊如下：
荷蘭商聯想股份有限公司台灣分公司
台北市信義區信義路五段七號十九樓之一
服務電話：0800-000-700


Appendix E. Restriction of Hazardous Substances Directive (RoHS)

China RoHS

The information in the following table is applicable for products manufactured on or after March 1, 2007 for sale in the People's Republic of China.

Lenovo 电脑选项	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
图形适配器	X	O	O	O	O	O

O：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006标准规定的限量要求以下。
X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006标准规定的限量要求。
对于销往欧盟的产品，标有“X”的项目均符合欧盟指令2002/95/EC 豁免条款。

 在中华人民共和国境内销售的电子信息产品上将印有“环保使用期”(EPU)符号。圆圈中的数字代表产品的正常环保使用年限。

Turkish statement of compliance

The Lenovo product meets the requirements of the Republic of Turkey Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (EEE).

Türkiye EEE Yönetmeliğine Uygunluk Beyanı

Bu Lenovo ürünü, T.C. Çevre ve Orman Bakanlığı'nın "Elektrik ve Elektronik Eşyalarda Bazı Zararlı Maddelerin Kullanımının Sınırlanmasına Dair Yönetmelik (EEE)" direktiflerine uygundur.

EEE Yönetmeliğine Uygundur.

lenovo®

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Printed in China

(1P) P/N: 57Y3939



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