LG

DVD-ROM DRIVE

OWNER'S MANUAL

MODEL : DRD-820B

To enjoy fully all the features and functions of your DVD-ROM Drive,
Please read this Owner's Manual carefully and completely.

LG Electronics Inc.

CAUTION: The laser used in the DVD-ROM drive can damage your eyes.

Do not attempt to open the cover.

To reduce the risk of electric shock, do not remove cover (or back).
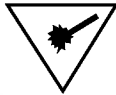
No user-serviceable parts inside.

Refer servicing to qualified service personnel.

This unit uses CD-ROM discs
marked with this symbol:

Use of controls or performance of procedures other than those specified herein may result in hazardous radiation exposure.

PRODUCT COMPLIES WITH DHHS
RULES 21 C.F.R. SUB-CHAPTER J,
IN EFFECT AT THE DATE OF MANUFACTURE.

WARNING: To reduce the risk of fire or electric shock,
do not expose this appliance to rain or moisture.

CSA Notice

This class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

FCC COMPLIANCE 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 the dealer or an Authorized Service Center for help.
  • FCC WARNING

  Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
  • This DVD-ROM Drive is for use only with UL listed personal computers that have installation instructions detailing user installation of card cage accessory.

FEATURES

- ATAPI/E-IDE interface
- Average access time (DVD-ROM:150ms, CD-ROM:100ms)
- Multimedia PC compatible
- Photo CD multisession support
- Small CPU band width (MPC spec.)
- Data transfer rate(DVD-ROM 2x-speed:2.70MB/sec, CD-ROM max-24x-speed: 3.6MB/sec)
- Intelligent 256KB data buffering system
- Horizontal mounting support
- Tray Loading system without caddy
- Designed for internal mounting
- Emergency Eject Support
- Easy audio CD control button support
- Supports Windows 95 Plug and Play ATAPI protocol
- CD-R, CD-RW Support

SYSTEM REQUIREMENTS

An IBM PC or compatible with the following system components:

- IBM Compatible Pentium-133 MHz or above (With PIO mode 4, TX chip set recommended)
- A Minimum of 16MB memory
- Floppy disk drive (3 $\frac{1}{2}$ inch)
- MS-DOS version 3.1 or greater
- An open, front-facing, half-height drive bay.
- An existing IDE controller in your PC with an available cable connector or a new IDE controller that you will install.

SUPPLIED ACCESSORIES

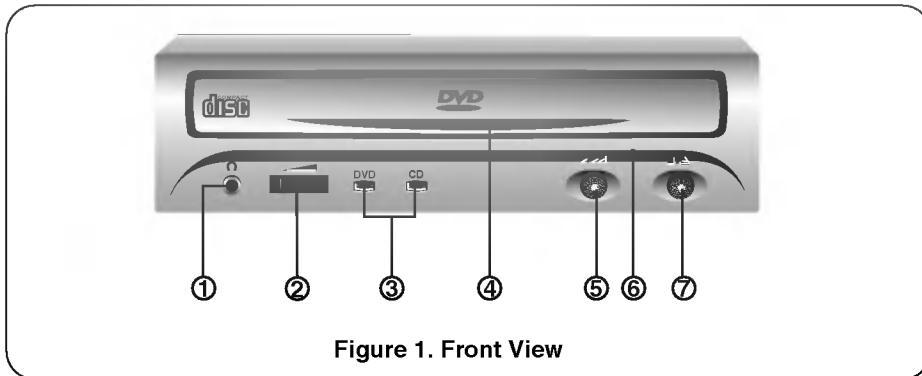| Item	Quantity
Owner's Manual	1
Setup Diskette	1
Audio Cable	1

Figure 1. Front View

FRONT VIEW

① **Headphone Jack**
3.5mm jack for monitoring the audio signal from audio CDs.

② **Headphone Volume Control**
Adjusts the headphone sound level.

③ **Busy Indicator (DVD, CD)**
The Busy Indicator lights during initialization and data-read operations.

④ **Disc Drawer**
Accepts a CD-ROM/DVD-ROM disc on its tray.

⑤ **Play/Skip Button**
When an Audio CD is in the Disc Drawer, pressing this button will start playing audio CDs from the first track. If an audio CD is playing, pressing this button will skip to the next track.

⑥ **Emergency Eject Hole**
Insert a paper clip here to eject the drawer manually or when there is no power.

⑦ **Open/Close/Stop Button**
This button is pressed to open or close the CD tray.
The button works only when the main power switch is on.
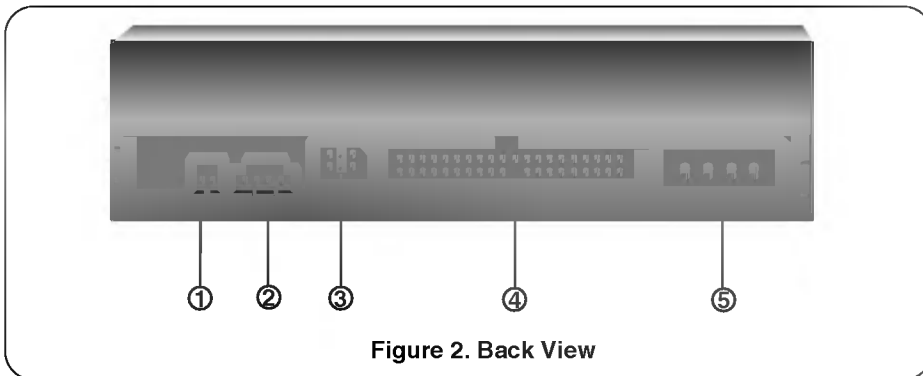If an audio CD is playing, pressing this button will stop it, and pressing it again will open the tray.

Figure 2. Back View

BACK VIEW

① **Digital Audio Ouput Connector**
This is a digital audio output connector or Video CD output connector.
You can connect this to the digital audio system or Video CD Board.

② **Analog Audio Output Connector**
The Audio Output Connector connects to a sound card.
The supplied audio cable is a SoundBlaster® type cable. If you have a different sound card, you will need to contact the sound card manufacturer to obtain the proper cable for that card. This cable is necessary to play audio CDs.

③ **Master / Slave / CSEL Jumper**
These three jumpers are used to set the DVD-ROM Drive to either a Master, Slave, or CSEL drive.
Refer to section HARDWARE INSTALLATION.

④ **Interface Connector**
This 40-pin connector is used to transfer and control signals between the DVD-ROM Drive and your PC.
Connect the 40-pin IDE cable in your PC to this connector.

⑤ **Power-in Connector**
Attach a power cable from the computer's power supply to this connector.

■ **Installation**

Avoid placing the drive in a location subject to :
- high humidity
- high temperature
- mechanical vibration
- direct sunlight

■ **Operation**

- During operation, excessive vibration, or a sudden jolt to the drive may cause a malfunction.
- Avoid exposing the drive to sudden changes in temperature. This may cause condensation to collect inside the drive.

■ **Transportation**

- Always remove the disc before moving the drive.

This section describes how to install your DVD-ROM drive into your computer.

> **WARNING:**
> To protect the DVD-ROM Drive, your computer, and peripheral devices from damage, turn off their power before installing the drive.

Note: If you are not comfortable about opening your PC and attempting the DVD-ROM drive installation, many local computer shops can perform this service for a reasonable cost.

This installation assumes you have a PC with an available connector on an IDE interface cable. If your PC has an IDE hard drive, there is usually an available connector in the middle of the same cable that attaches from the motherboard (or controller card) IDE connector to the hard drive. Some PC's have 2 IDE ports on the motherboard or controller card, and you may need to purchase on IDE cable to use an unused IDE port. If you do not have an available IDE connector or IDE port, you may need to purchase an IDE controller card to install this DVD-ROM drive. Inspecting and knowing your PC system will make your installation easier and less time consuming.

A final note before installation: The cable connecting to your floppy disk drive is not an IDE cable. Do not attempt to attach the DVD-ROM drive to this cable.
If the DVD-ROM drive is to be connected to the same cable as the hard drive, be sure that the hard drive is set as master. Hard drives can be set as single, master, or slave. Check your hard drive owner's manual or contact the hard drive manufacturer for correct jumper settings.

SETTING MASTER / SLAVE JUMPER

* You will see three pairs of pins and a jumper (cap) at the back of the DVD-ROM drive. This jumper is used to set the DVD-ROM Drive as a CSEL, MASTER, or SLAVE device in your PC. Examples of how the jumper can be placed are shown in Figure 3 below.

CSEL SLAVE MASTER
mode mode mode
(default)

(rear of DVD - ROM drive)

Figure 3. Setting MASTER / SLAVE Jumper
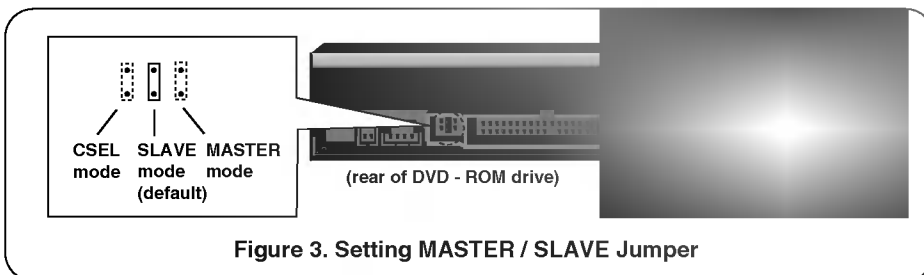
* Move the jumper (clip on one pair of pins) from its default factory position (SLAVE) to CSEL or MASTER as needed (see the following description for the setup that matches your system), using the above diagram to place the jumper.

WHEN USING A PRIMARY IDE CONTROLLER

Most PCs provide one IDE cable to support two devices (one for hard disk, the other for a second hard disk or a DVD-ROM drive). This IDE cable originates either on the motherboard or on a controller card. This controller is termed the primary IDE controller, and the hard disk attached that contains the operating system for boot-up is set up as the Primary Master. Your DVD-ROM drive should be set to the Slave mode.
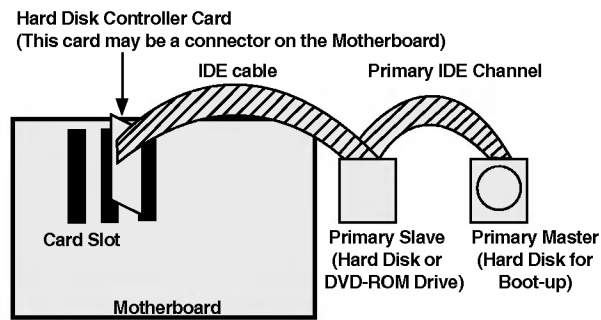

Figure 4. Primary Controller system Configuration

WHEN USING A SECONDARY CONTROLLER

*   If your PC has an additional IDE controller on the motherboard or in a system slot, each IDE device connected to the secondary IDE controller must also be set to the Master or Slave mode. If you are connecting your DVD-ROM drive to a secondary IDE port, and it is the 1st device you are connecting to it, then set the DVD-ROM jumper to the Master position. If it is the 2nd device, set the DVD-ROM jumper to the Slave position.

*   Depending on the IDE card and whether the DVD-ROM drive is a master or slave unit, the diagram below represents the different ways in which the DVD-ROM may be configured in your PC. The table below the diagram shows the possible Jumper placements that would correspond to each of the different configurations shown.

Figure 5. Possible System Configuration
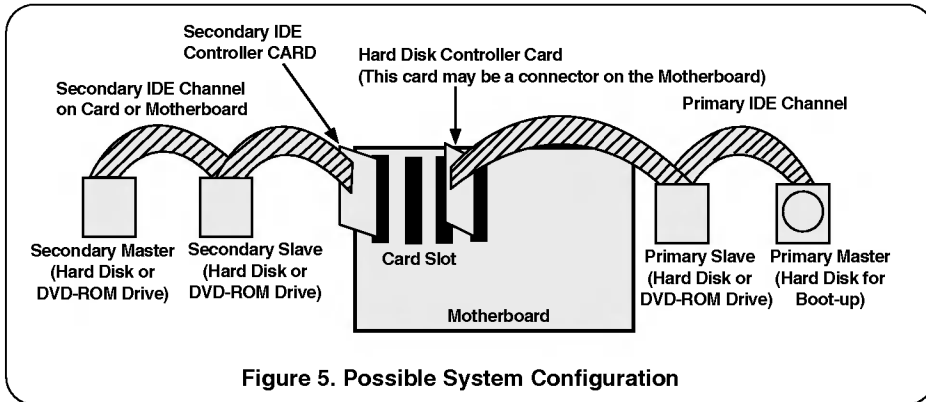
If you have the system with two IDE channels (in the case of an enhanced IDE PC), do not install an IDE controller card in your system.

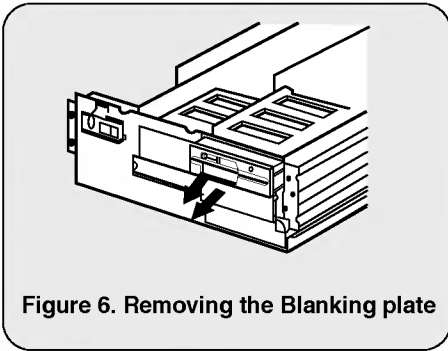| IDE Controller	DVD-ROM Connection	Jumper Placement
Primary (1st IDE card)	Slave(Hard disk is Master)	SLAVE (default)
Secondary (2nd IDE card)	Master(1st device on 2nd IDE Card)	MASTER
Secondary (2nd IDE card)	Slave(2nd device on 2nd IDE Card)	SLAVE (default)
PC Manual says use CSEL		CSEL

MOUNTING THE DVD-ROM DRIVE
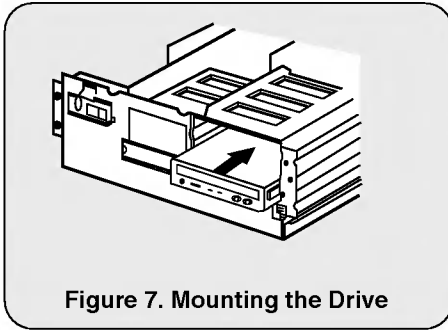

Figure 6. Removing the Blanking plate

Step 1. Turn off and unplug your computer and all peripheral devices attached to it.

Step 2. Remove the cover from your computer.

Step 3. Remove the front panel from an unused half-height slot.

Figure 7. Mounting the Drive

Step 4. Slide the DVD-ROM drive into the half-height slot, and secure the drive in place with screws.

Note: If there is too much space between the sides of the drive and the drive bay, you may need to install spacer brackets, available at your local computer store.

Pin assignment
The pin assignment of the power-in connector is as follows:

5V DC — GND — 12V DC

Power supply connector
(4-pin connection cable)

Figure 8. Connecting the Power Supply Cable

Step 5. Push the power supply cable connector firmly into the power in connector.

Figure 9. Connecting the IDE Cable to the Interface Connector
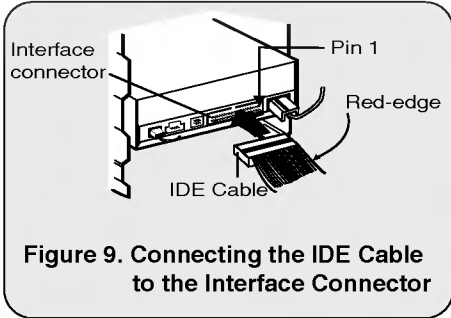
Step 6. Connect the 40-pin IDE Cable to the back of the DVD-ROM Drive. Please make sure that the red edge of the IDE Cable is connected to Pin 1 on the DVD-ROM Drive.

CONNECTING AN AUDIO CABLE

Figure 10. Connecting an Audio Cable to the Audio Output Connector
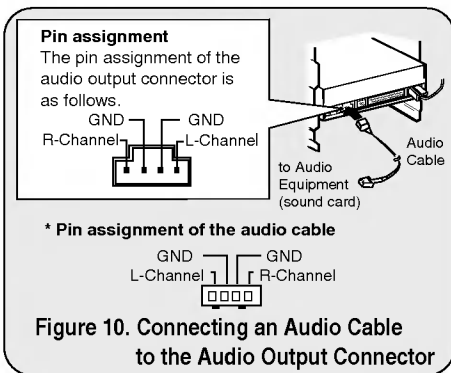
If you want to connect audio equipment or a sound card to the DVD-ROM drive, use an audio cable to connect the drive to the sound device.

To have your PC recognize and be able to use the new DVD-ROM drive, driver files must be installed. Depending on your operating system, this procedure may be completely automatic or may require using the supplied software. Locate your operating system type from the section below, and follow the appropriate directions.

Windows 95, Windows NT, OS/2 Warp(ATAPI Installation)

ATAPI Installation (Windows 95 and others)

*   For Windows 95 installation, do not use the installation diskette supplied. This DVD-ROM drive is Windows 95, Windows NT 3.5, and OS/2 Warp compatible, generally utilizing the generic software drivers supplied with those operating systems Below is the example installing the driver for Windows 95. For other operating systems, try looking for either a LG Electronics or Goldstar IDE DVD-ROM drive software driver. If none is found, try selecting one of the device drivers for **Non-listed IDE CD-ROM**.

(For Windows 95)

1. Install the DVD-ROM drive in your PC as described in this manual.
2. Power up your PC. Upon starting Windows 95, it might automatically detect the new DVD-ROM drive and load the driver software for it. If not, proceed to the next step.
3. In Windows 95, Click on the Start button. Click on the Settings button. Click on the Control Panel button. Double-Click on the **Add New Hardware** icon. Follow the instructions for the computer to search your system for new hardware. It will locate the DVD-ROM drive and load the generic driver.

DOS, WINDOWS 3,11

The INSTALL program performs the following functions.
*   Allows the user to select the target disk drive where DVD-ROM device driver files will be set-up.
*   Unless modified by the user, the INSTALL program searches the target disk for directory (\DVDROM); if it is not found, the directory (\DVDROM) is created.
*   Copies the DVD-ROM device driver file named LGDVDROM.SYS, the Microsoft CD-ROM Extension file named MSCDEX.EXE, and the utility files to the specified directory.
*   Modifies your CONFIG.SYS file to list the location and name of the device driver.
*   Modifies your AUTOEXEC.BAT file to load MSCDEX.
*   Terminates and returns control to the user.

LIST OF FILES TO BE INSTALLED IN YOUR PC

❋ **MSCDEX.EXE**   Microsoft MS-DOS CD-ROM Extension software, which enables the computer to access the DVD-ROM drive.

❋ **LGDVDROM.SYS**   DVD-ROM device driver for DOS.

❋ **EJECT.EXE**   Software eject program which can eject the CD tray.

❋ **CLOSE.EXE**   Software close program which can close the CD tray.

RUNNING THE INSTALL PROGRAM (DOS INSTALLATION)

Step 1. Insert the DVD-ROM device driver for DOS install diskette into the appropriate drive.

Step 2. Go to the floppy drive by typing A: or B: at the DOS prompt, as appropriate.

Step 3. Type the word INSTALL and press [ENTER].

Step 4. The INSTALL program will begin loading. When loading is complete, the INSTALL program identification will appear on the screen.

Step.5. Follow the instructions on the screen.

Step 6. If you specify the path information during the installation, the install program will copy the DVD-ROM device driver file named LGDVDROM.SYS, the Microsoft CD-ROM Extension file named MSCDEX.EXE and the utility files to the specified directory, and modify your CONFIG.SYS file and AUTOEXEC.BAT file.

Step 7. When the installation is completed, remove the diskette and reboot your PC.

CD-ROM EXTENSION PROGRAM MSCDEX. EXE OPTIONS

There are several options that are set for the Microsoft CD Extension program. Generally, these settings do not have to be changed for the DVD-ROM drive to work, so these options are needed no further. However, you may decide to change the MSCDEX option settings depending on your operating environment.
These options are explained below:

PARAMETER	DESCRIPTION
/D (Device Name)	Tells MSCDEX.EXE what the device driver's name is (must be same as was used in /D: expression of DEVICE= line in CONFIG.SYS file)
/E	Tells MSCDEX.EXE to use expanded memory
/L: (Device Name)	Indicates the drive letter to be assigned to the DVD-ROM drive
/M: (Value)	Tells MSCDEX.EXE how much memory to allocated for caching. Default is 10 (represents 10 kilobytes).
/V	Provides memory usage statistics, such as how much memory is used by buffers, resident data, and resident code.

TROUBLESHOOTING

*   When the DVD-ROM drive does not work with the hard disk drive in primary IDE channel.

(SOLUTION)

1. Check the DVD-ROM drive Master/Slave Jumper setting.
   The DVD-ROM drive must be set to the Slave mode.

2. Check to be sure your hard disk Interface type is IDE type.

3. Check your hard disk Master/Slave Jumper setting.
   Some old-version IDE type hard disks were set to Master Only mode.
   In that case, contact your hard disk company and change your hard disk jumper setting to master mode.

4. If the DVD-ROM drive does not work with above methods, you may need a secondary IDE card. If you use the secondary IDE card, you should set the DVD-ROM drive jumper to the master mode if the DVD-ROM drive is the first device you are connecting to the secondary IDE card.

*   When the DVD-ROM drive does not install in OS/2 warp.

(SOLUTION)

1. Select *NON-LISTED IDE CD*.

*   DVD-ROM drive is not present in Windows 3.1 or 3.11 or DOSSHELL.

(SOLUTION)

1. When the WTN or DOSSHELL command lines are present in your AUTOEXEC.BAT, make sure that the MSCDEX.EXE command line appears **before** the WIN or the DOSSHELL command lines.

Items		CD-ROM	DVD-ROM
General	Data Capacity	553 Mbyte (mode 1), 635 Mbyte (mode 2)	4.7 Gbyte (DVD-5), 8.5 Gbyte (DVD-9)
	Disc Diameter Rotational Speed	12cm/8cm 200-5,100rpm	
Performance	interface Supported System	ATAPI/E-IDE IBM PC-AT or Compatible	
	Transfer rate(Sustained) Access Time(1/3 Stroke)	3.6 Mbytes/sec (24x max) 100ms	2.70 Mbytes/sec (2x) 150ms
	MTBF Buffer size Error Rate ECC on ECC off User Data/Block Supported Disc	50,000 Power On Hours (Duty Cycle 10%) 256 Kbytes 1block/10^{15} bits (single), 1 block/10^{12} bits (24x) 1block/10^{12} bits (single), 1 block/10^{9} bits (24x) 2,048 bytes/block (Mode1 & Mode2 Form1) 2,340, 2,336 bytes/block (Mode2) 2,324 bytes/block (Mode2 Form2) 2,352 bytes/block (CD-DA), 2048 bytes/block (DVD) CD-DA, CD-ROM, CD-ROM XA-READY, Photo-CD, DVD-ROM, CD-R, CD-RW	
Audio	Dynamic Range S/N Ratio THD Channel Separation Headphone Level Line Output Level Line Output Jack Headphone Jack	80 dB 85 dB 0.05% at 1 KHz 80 dB at 1KHz 0.70 Vrms (33Ω) 1.0 Vrms (47kΩ) 4 Pin terminal (Rear) ø 3.5 mm (Front)	
Environment	Temperature	5~ 45°C	
Power Requirements	12V $\pm$ 10% Ripple<100m Vpp	1.2A (Maximum)	
	5V $\pm$ 5% Ripple<100m Vpp	0.8A (Maximum)	

NOTE : Specifications are subject to change without notice for improvement.
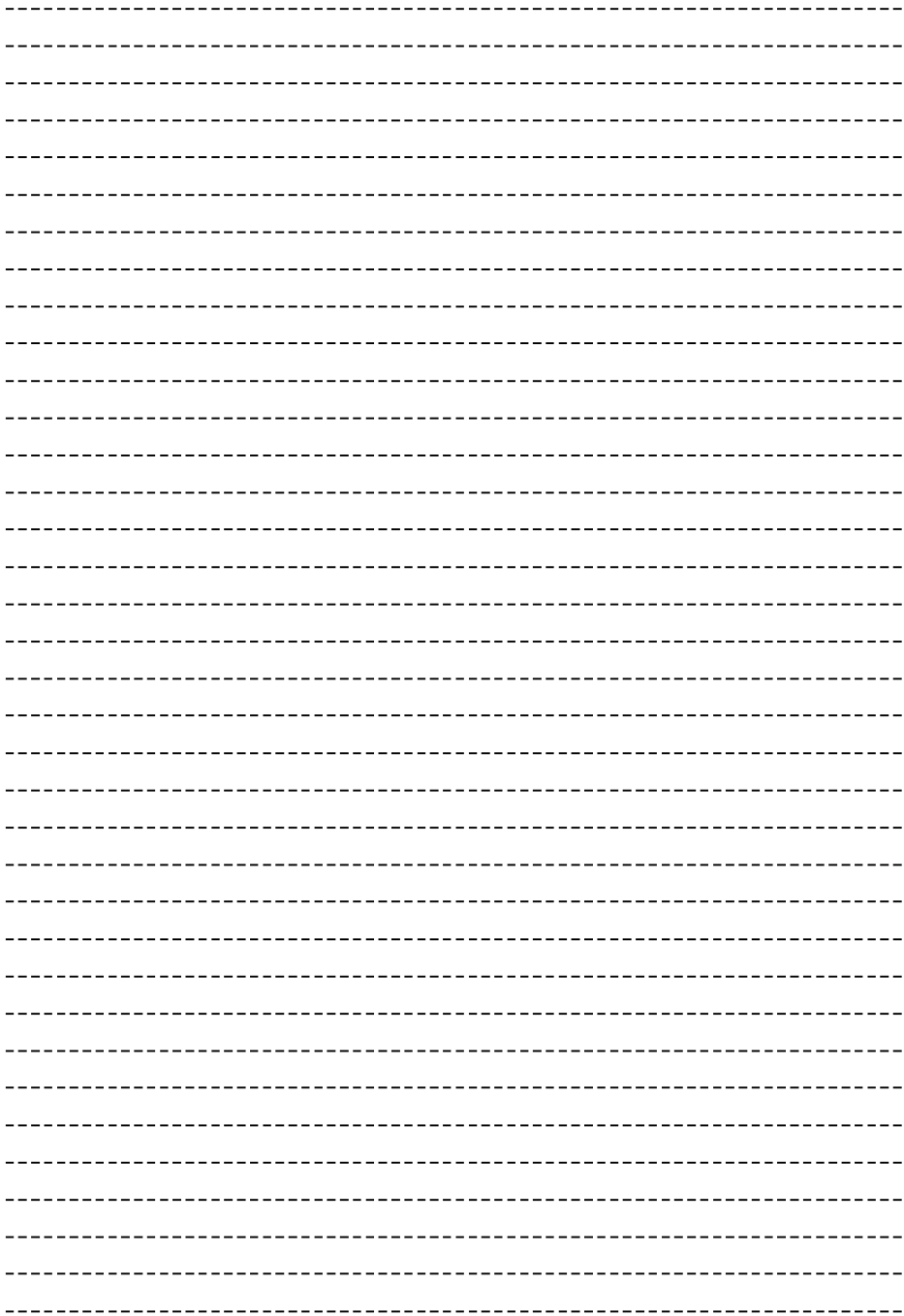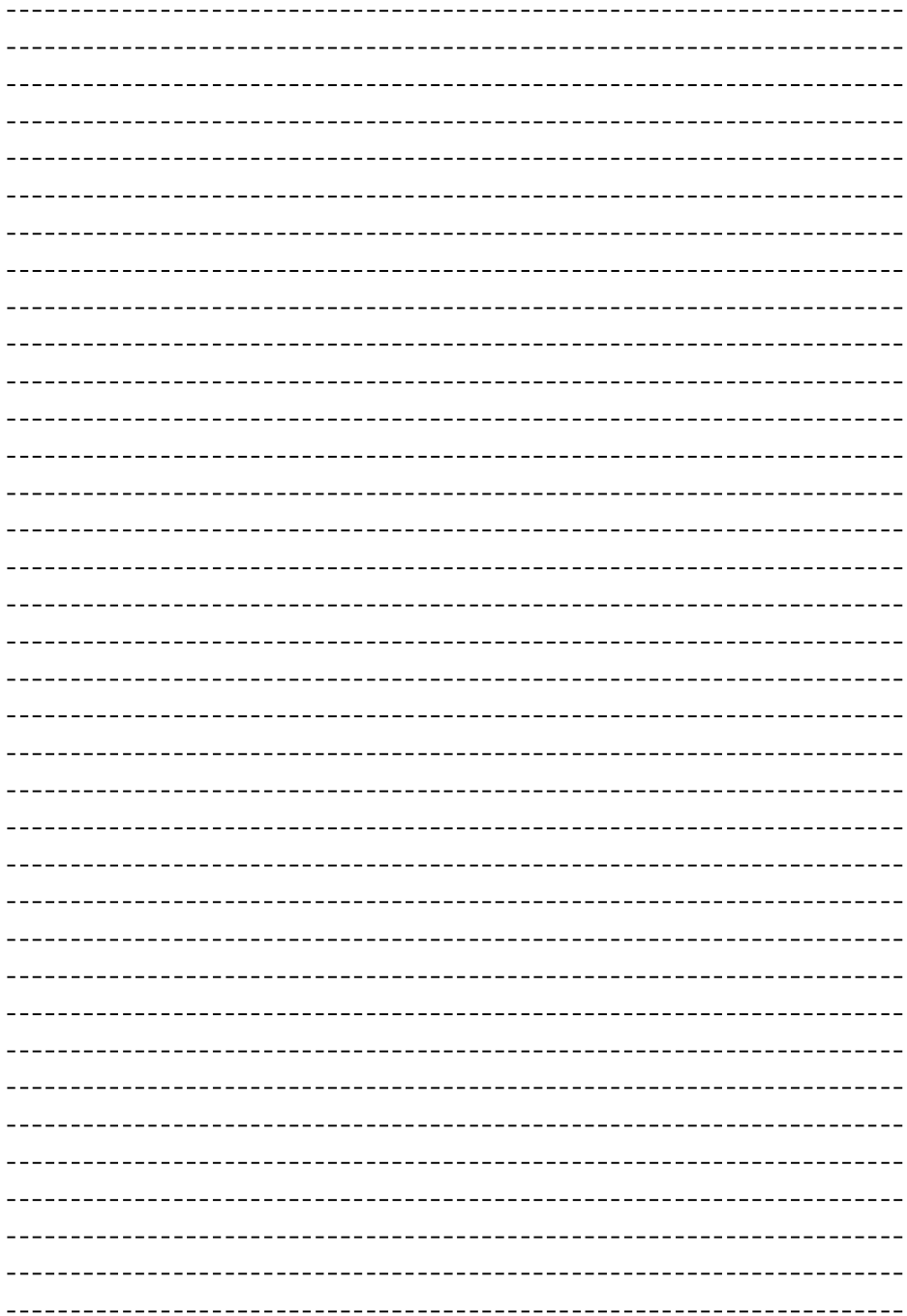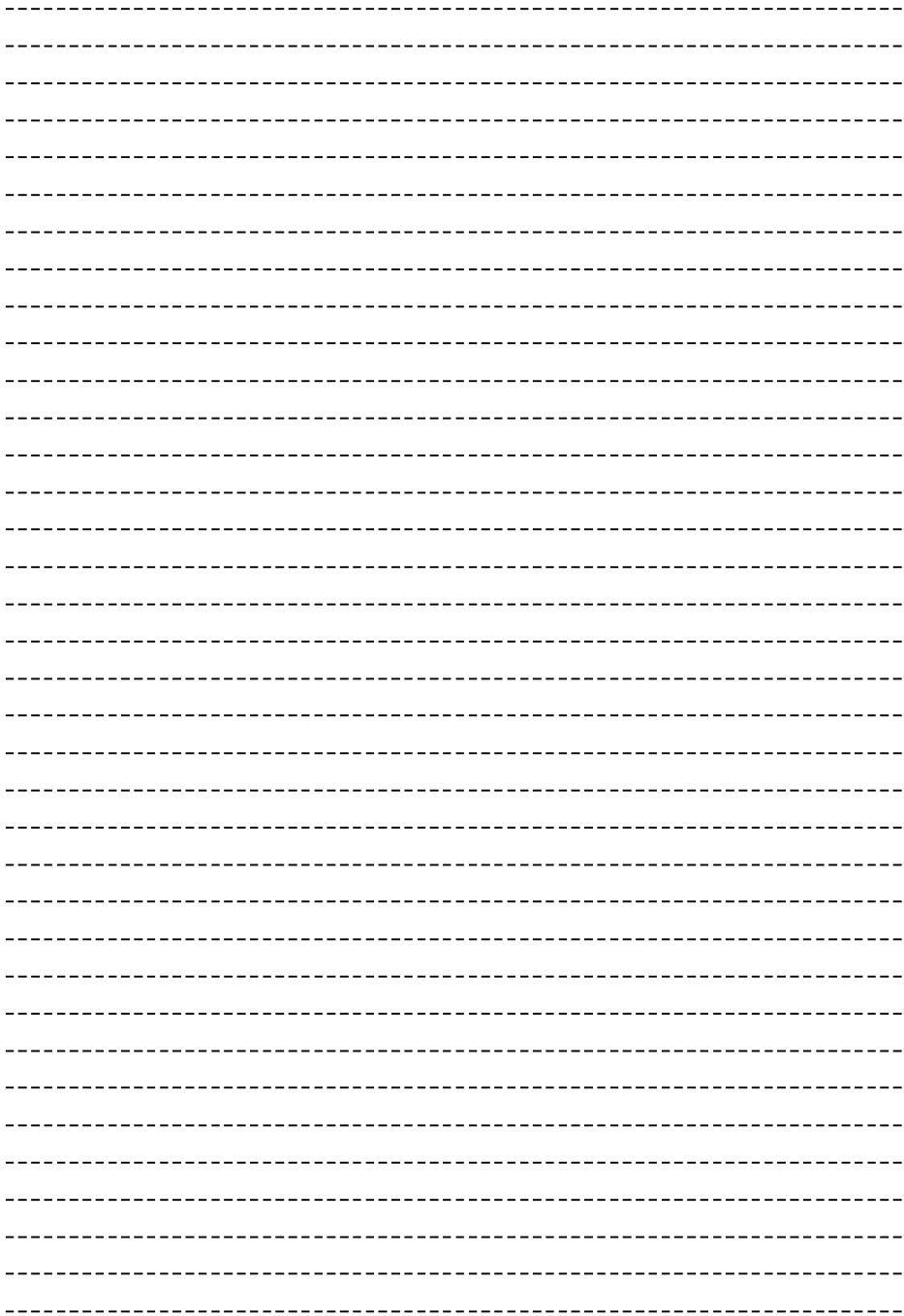
DVD-ROM LIMITED WARRANTY

LG Electronics U.S.A., Inc. will repair or at its option replace, without charge, your product which proves to be defective in material or workmanship under normal use, during the warranty period listed below from the data of original purchase. **This warranty is good only to the original purchaser of the product during the warranty period as long as it is in the U.S. including Alaska, Hawaii, and U.S. Territories.**

WARRANTY PERIOD

MODEL #	LABOR	PARTS	HOW SERVICE IS HANDLED
	1 Year	1 Year	If the unit is defective, a replacement* will be sent by 2-day air for the first year. After one year, repair or a 2-day swap at a fixed labor charge. For service, please call 1-800-243-0000 (Mon.~Fri. 7AM~7PM CST)

No other express warranty is applicable to this product. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN. LG ELECTRONICS U.S.A., INC. SHALL NOT BE LIABLE FOR THE LOSS OF THE USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THE USE OF, OR INABILITY TO USE, THIS PRODUCT OR FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY APPLICABLE TO THIS PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts; so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

THE ABOVE WARRANTY DOES NOT APPLY:

1. To damages or problems which result from delivery or improper installation.
2. To damages or problems which result from misuse, abuse, accident, alteration, or incorrect electrical current or voltage.
3. To service calls which do not involve defective workmanship or material and explaining the operation of the unit.

Therefore these costs are paid by the consumer.

CUSTOMER ASSISTANCE NUMBERS:

To Prove Warranty Coverage: ➡ Retain your Sales Receipt to prove date of purchase.
➡ Copy of your Sales Receipt must be submitted at the time warranty service is provided.

To Obtain Product, Customer, ➡ Call 1-800-243-0000 24 hrs/7 days
or Service Assistance: Push appropriate menu code.

For Exchange Service: ➡ Call 1-800-243-0000 (Mon~Fri 8am~5pm CST)
Push appropriate menu code.

* Replacement is a factory-reconditioned unit. Free replacement applies only within the initial one-year period. Factory-reconditioned units are available at a low, fixed cost after the one-year warranty expires.

LG Electronics Inc.