

Consumer Products Service DVD Recorder Service Seminar

Review of DVD Recorder Basics
New Models
Features & Operations
Product Service



400GB HDD, SD, PC Card

E500H



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October 2004

Review of DVD Recorder Basics

New Models

Features & Operations

8Hr in EP mode 3X/5X DVD-RAM

8X DVD-R EPG

AV Home Network

Product Service

Block explanation--E85

Service modes

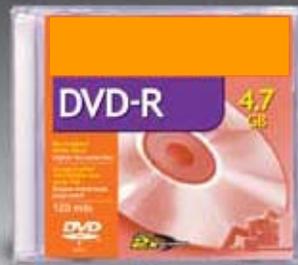
Drive & digital PCB replacement

Firmware update

Review of DVD Recorder Basics: DVD Family



Write Once



Re-writable



Recordable Media Compatibility



DVD-RAM (8cm & 12cm) Yes



DVD-R Yes



DVD-RW No



DVD+R No



CD-R CD-RW No



DVD+RW No



DVD-RAM Compatibility

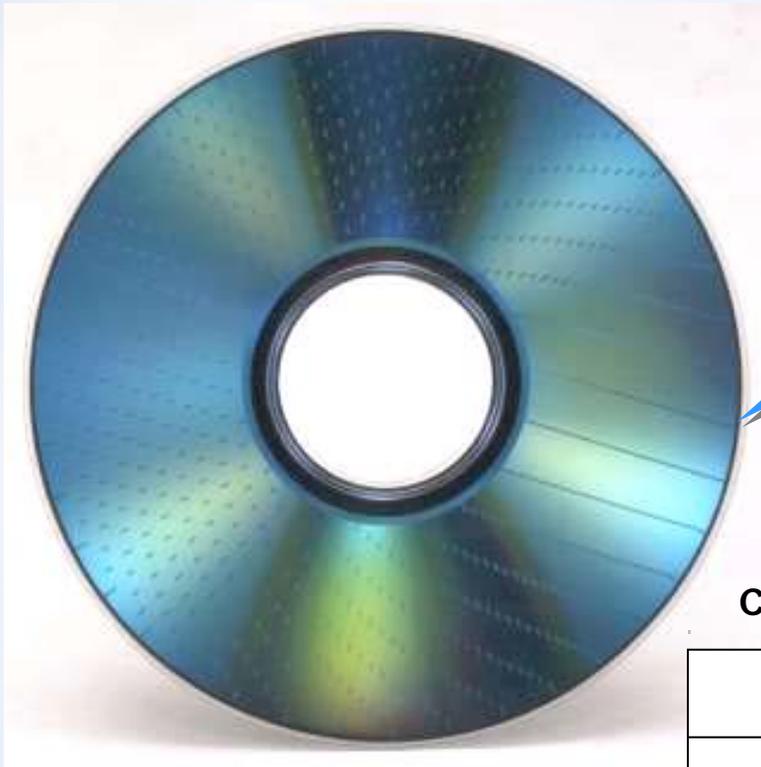


All 4.7GB and 9.4G DVD-RAM's with or without cartridge can be used.



Note:
DVD-RAM 2.6GB Single-sided
DVD-RAM 5.2GB Double-sided
Cannot be used

Longer Time Recording → 8 hrs. in EP mode
(Starting in 2004 models, 6 hrs. for previous models)



DVD-RAM
16-hour
(Double Sided)
Recording

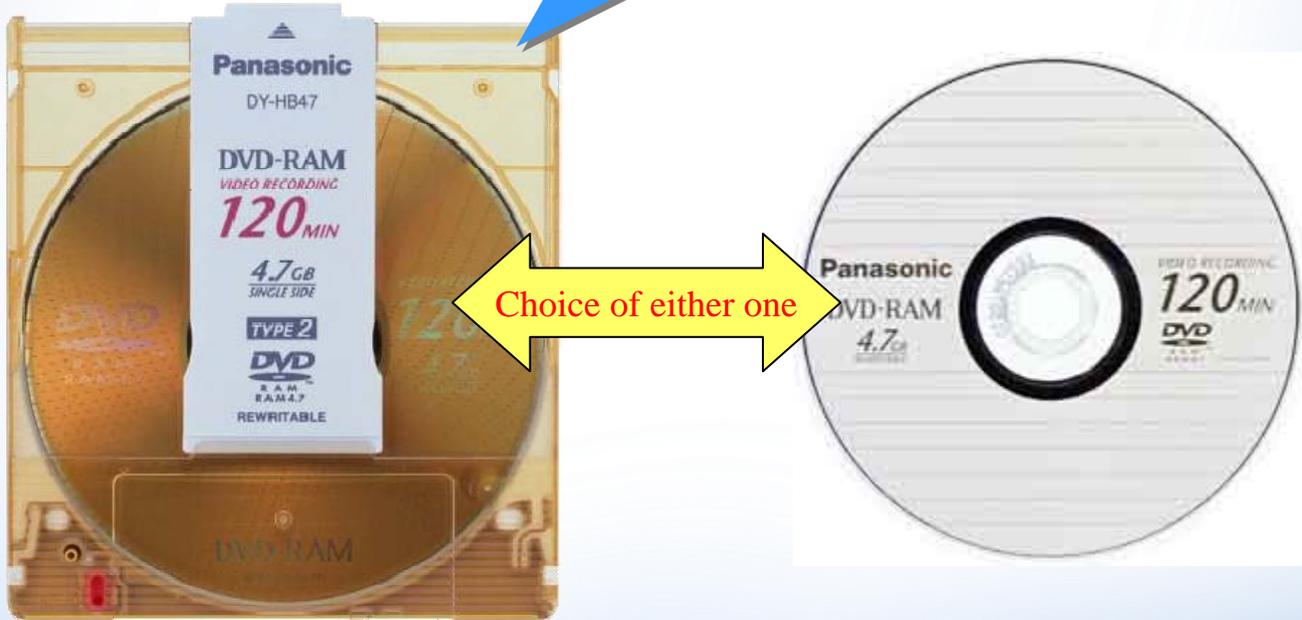
Comparison of DVD-RAM DVD+RW

	DVD-RAM	+RW
Single	8 hours	4 hours
Double	16 hours	-

Removable Cartridge Available

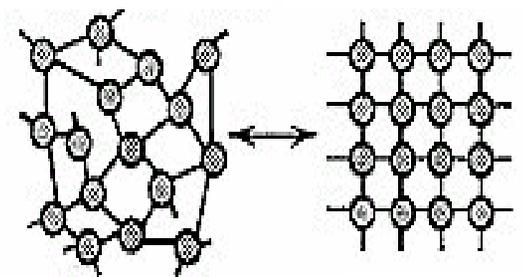
Bare Disc / Removable Cartridge Selectable

Easy Handling with Cartridge



DVD-RAM Writing Method

Amorphous Crystalline



Small Large
 ← Reflectivity →
 y

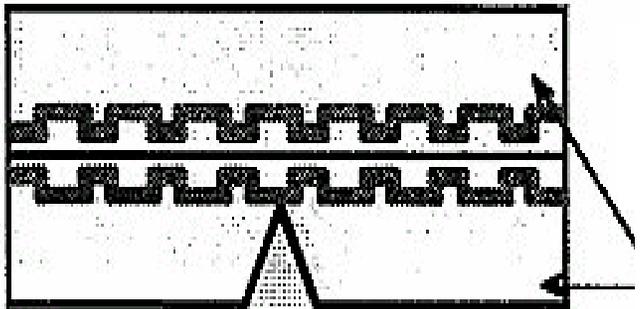
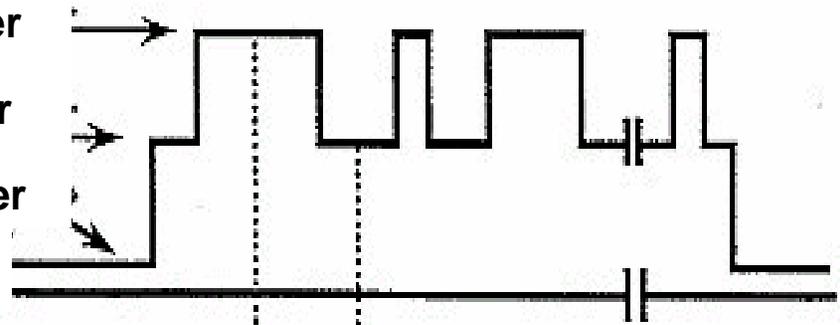
Laser Power

Direct Overwrite

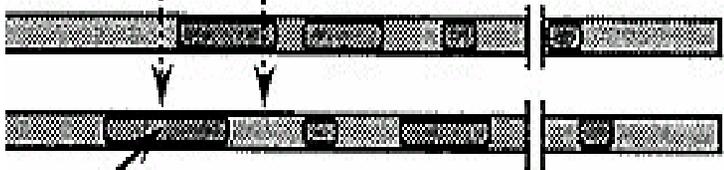
Peak power

Bias power

Read power



Before Overwriting
 After Overwriting



Substrate

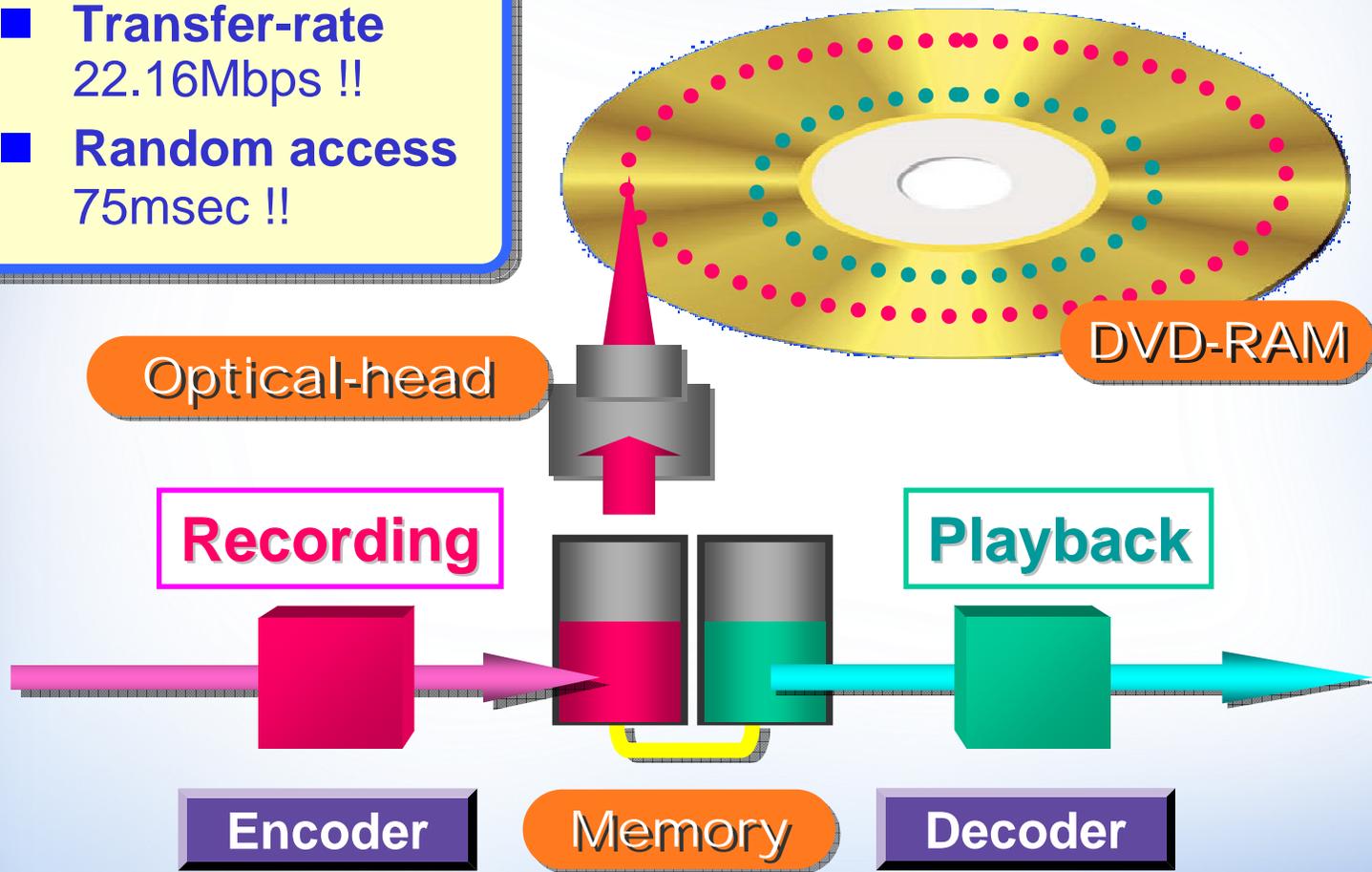
Recorded mark (Amorphous)

Recording pits on track

Laser Power

Time Slip Function

- Transfer-rate
22.16Mbps !!
- Random access
75msec !!



Time Slip Function



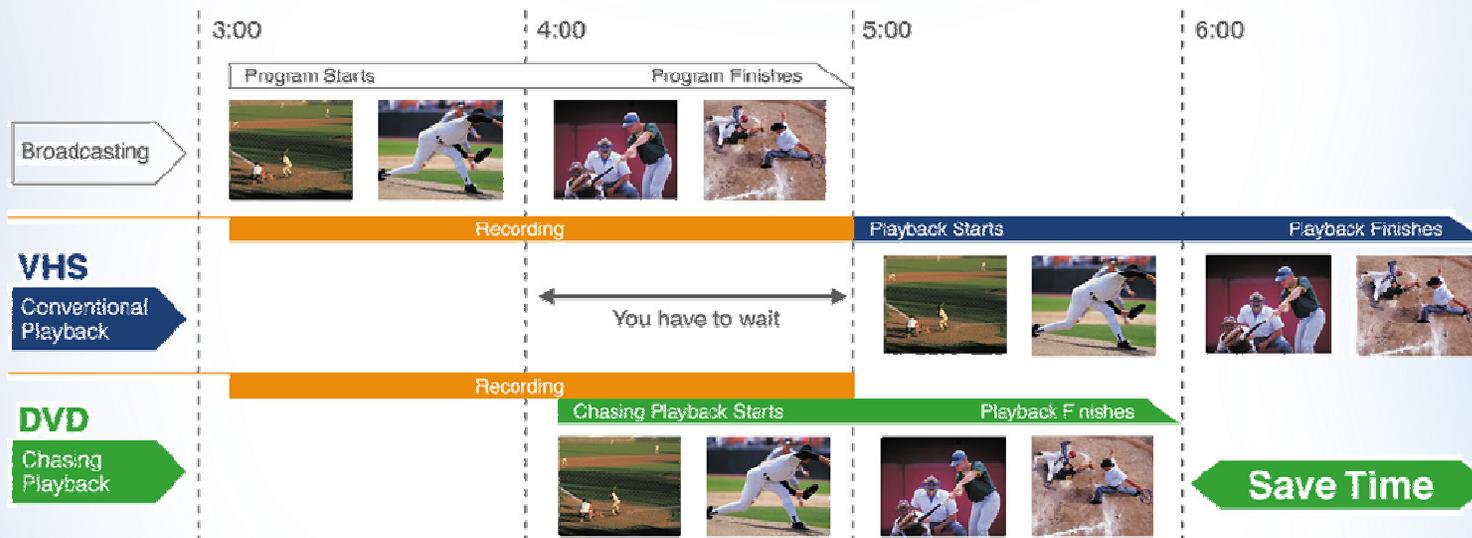
Playback
Screen



Recording
Screen



Time Slip & Chasing Playback



Watch TV on your time.

- While you're recording this weeks episode.



- You can watch last week episode.

* Programs must be recorded on the same disc.

New 2004 Models

DMRE55

DMRE75 (VHS)

DMRE85 (EPG, 120GB HD)

**DMRE500 (EPG, 400GB HD, SD, PC Card,
Home AV Networking)**

SCHT1500 (E85 + 80GB HD, Home Theatre)

**All models have the option of setting 8 Hr.
recording time in EP mode**

**More new features can be found in the product
brochure**

DMR-E55

DVD-RAM, DVD-R Recorder



- 1 *16-Hour Recording
(9.4 GB Double Sided DVD-RAM Disc)*
- 2 *Time Slip - Recording & Playback at the same time*
- 3 *Direct Navigator for easy & quick search*

March: \$599

DMR-E75V

DVD-RAM, DVD-R Recorder with VCR



- 1 *DVD / VHS Recording*
- 2 *One-touch 2way Dubbing (DVD ↔ VHS)*
- 3 *2 Program Parallel Recording with Twin Tuner*

June: \$899

Panasonic. ideas for life.

DMR-E85H

HDD, DVD-RAM, DVD-R Recorder

*4X DVD-R
3X DVD-RAM writing speed)*

DVD
VIDEO
RAM
HDD Time Slip™



- 1** *142 - Hour Recording onto 80GB Hard Disk*
- 2** *32x High-speed Dubbing from Hard Disk to DVD-R*
- 3** *16-Hour Recording
(9.4 GB Double Sided DVD-RAM Disc)*

April: \$1199

Panasonic. ideas for life.

DMR-E500H

HDD, DVD-RAM, DVD-R Recorder

*8X DVD-R
5X DVD-RAM writing speed)*

DVD VIDEO RAM **HDD** **SD** **Time Slip™**



1

Home Networking with SD & DVD RAM

2

709 - Hour Recording onto 400GB Hard Disk

3

SD Video (MPEG4) separate SD & PC Card Slots

Oct \$TBA

Panasonic. ideas for life.

New for 2004 Models Extended Recording Time

DVD-RAM Up to 16 H

DVD-R Up to 8 H

	Recording Hours (DVD-RAM+DVD-R Single Sided)	Recording Hours (DVD-RAM Double Sided)
XP (High Quality)	Up to 1 H	Up to 2 H
SP (Standard)	Up to 2 H	Up to 4 H
LP (Long)	Up to 4 H	Up to 8 H
EP (Extended)	Up to 6 (8)* H	Up to 12 (16)* H

***Selectable in Setup Menu**

EPG (Electronic Program Guide)

DMRE85
DMRE500
SAHT1500

EPG is
received from
Antenna or Cable
free-of-charge to the
customers



Where does EPG come from?



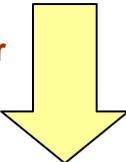
TV Guide (Gemstar)



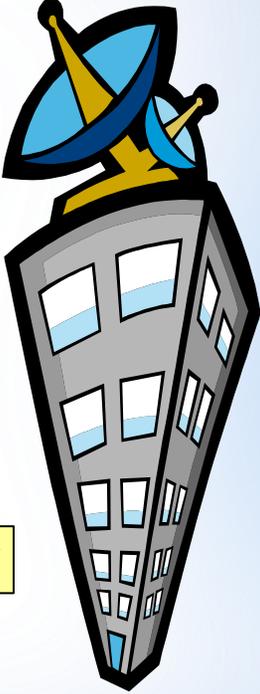
EPG Host Station
Local CTV Station



EPG by Off-air
Reception



DVD Recorder
Customers



CATV Providers

Where does EPG come from?

TV Guide gets TV program listings from TV stations. The information is packed by data encryption and sent to a EPG Host Station.

EPG Host Station broadcasts the TV programs with EPG information inserted in the video signal by VBI (Video Blanking Interval) in the same way as Closed Caption.

CATV provider receives the broadcast signal from the Host Station and feeds it to the CATV customers.

If the customer does not have CATV, EPG may be received off-aired from a local CBC station by antenna. EPG is not available for satellite receiver as it uses a different version of on-screen TV listings.

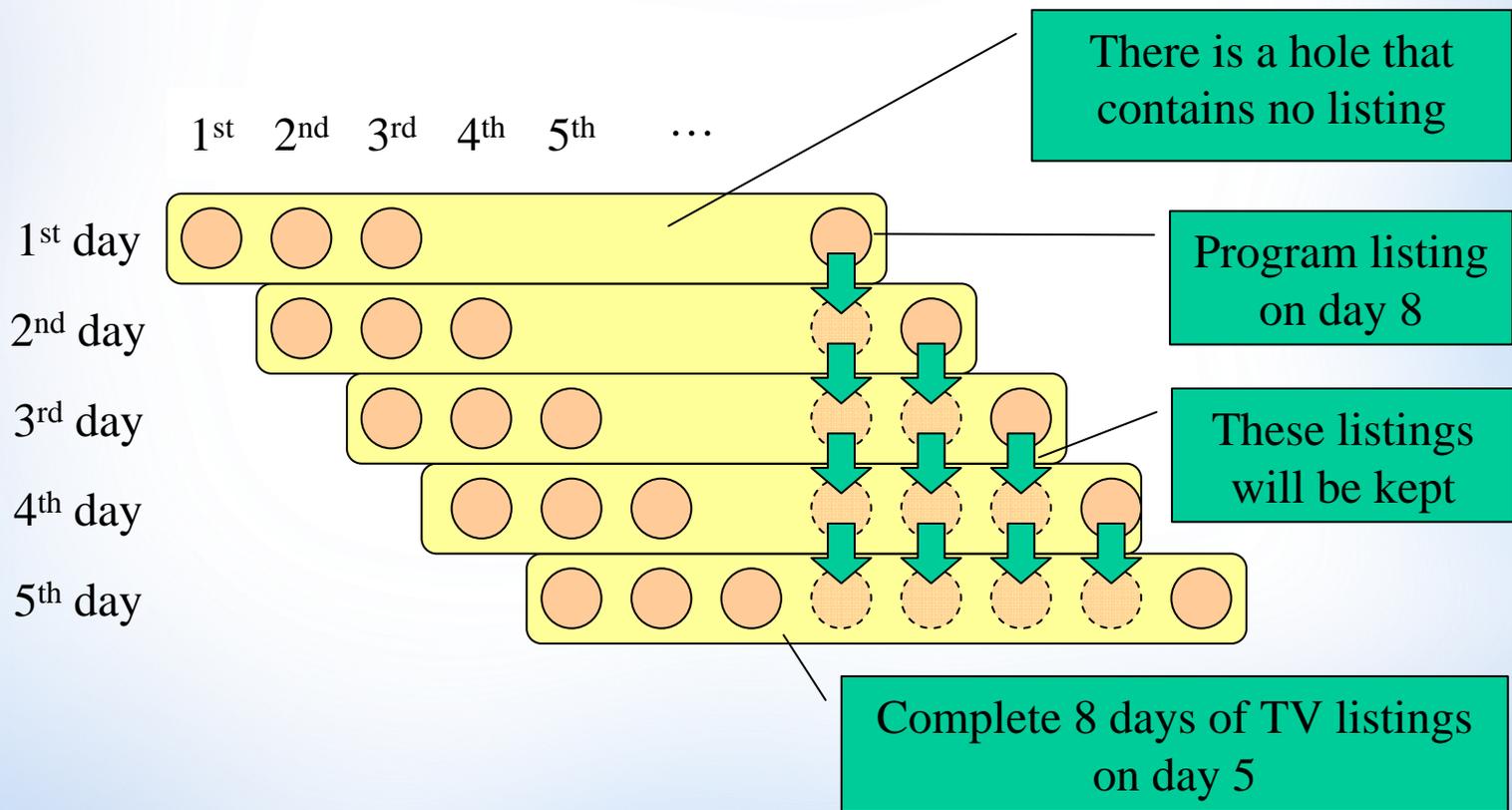
The DVD recorder extracts EPG information from VBI signal and uses the information to update the on-screen TV listing.

Where does EPG come from?

- The DVD recorder processes EPG download 4 times per day, at approx. 2AM, 7AM, 11AM and 2PM.
- The unit must be left in “Standby” mode in order to begin the process. If the unit is in use, the process will be done in the next scheduled time.
- Each download contains 4 days of program listings—today, tomorrow, the day after tomorrow, and the day after one week (i.e. day 1, day 2, day 3 and day 8).

Where does EPG come from?

Each EPG download contains 4 days of program listings, there will be some missing ones in the next 4 days after running TV Guide Initial Setup



Where does EPG come from?

In Toronto area, EPG host station is RDI. You can find the cable channel number by going to the CATV provider's Web site.

ROGERS

Home > For Consumers > Cable TV Services > Cable TV > **Channel Line-Ups**

Cable TV

[order now](#) | [cable package pricing](#)

Channel Line-ups

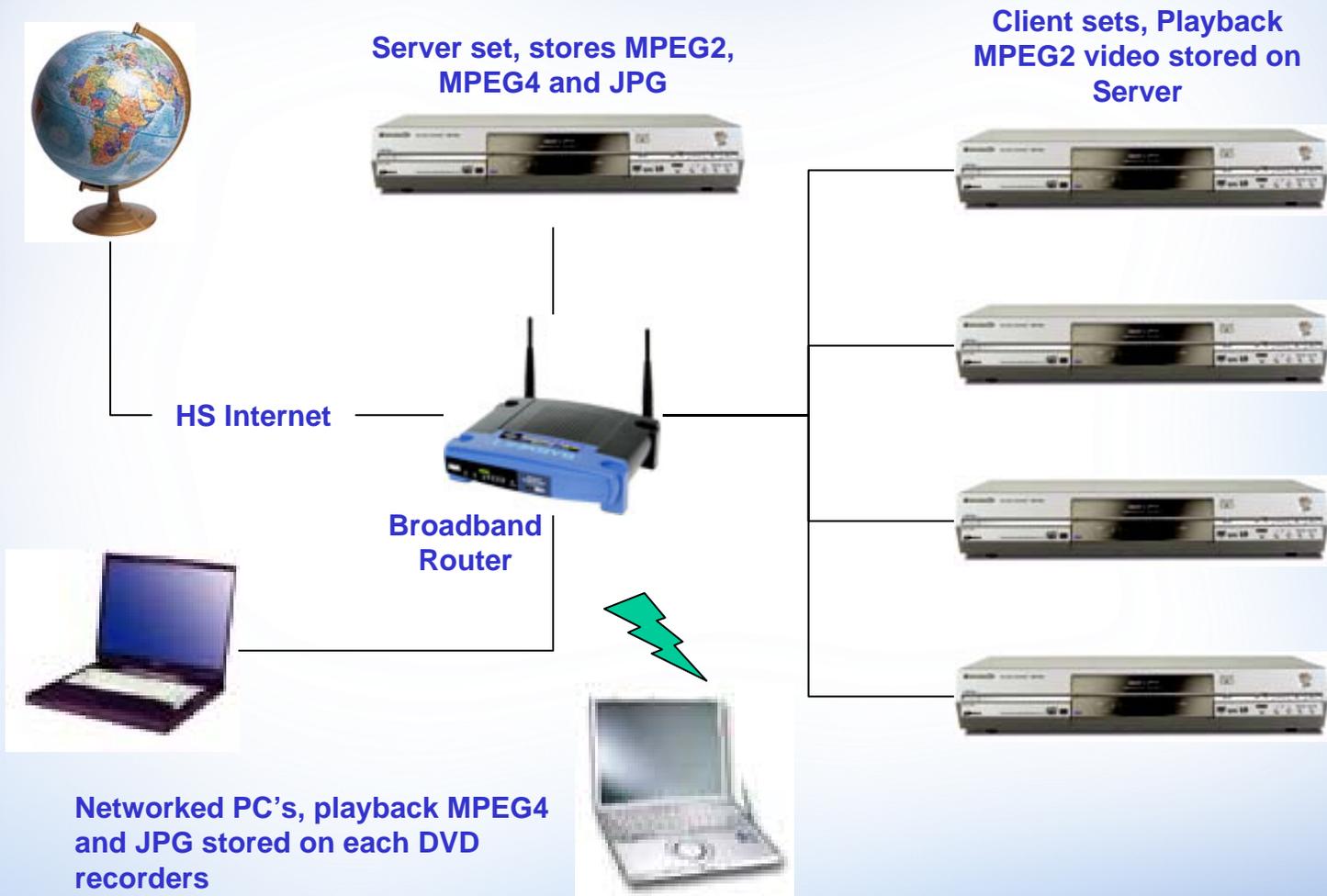
This is the channel lineup for:

BOLTON - ALL DIGITAL FORMAT AVAILABLE | SCARBOROUGH - ALL DIGITAL FORMAT AVAILABLE | PICKERING - ALL DIGITAL FORMAT AVAILABLE

Please note that channels mentioned may vary slightly by region. Rogers digital equipment is required to receive these channels in digital format, where available.

Cable Channel	Station/Channel Name
67	CFTM (TVA) Montreal
68	CPAC - Cable Public Affairs Channel
69	RDI – Le Reseau D'Information
70	Ontario Legislature
71	APTN – Aboriginal Peoples Television Network

AV Home Network



AV Home Network

- A total of 5 DMRE500's can be connected together using a LAN switch/hub or an Internet Access Point with LAN ports (broad band network router).
- Once connected, one set may be configured as a server, and the rest as clients.
- Besides the contents recorded on client sets' hard drives, the client set can access and play the MPEG2 video stored on the server set's hard drive.
- One or more PC's may also be connected to the LAN and play the contents (MPEG4, JPG) stored on the server set and client sets.

AV Home Network

- DMRE500 connects to the network by using a built-in Ethernet network interface same as one in a PC. The DVD recorder communicates with other devices on the network by TCP/IP (Transmission Control Protocol/Internet Protocol). TCP/IP is the standard communication protocol for LAN and the Internet.
- If a DMRE500 is connected to a network router at startup, the unit will submit its device ID (MAC address) and acquire an IP address from the router's DHCP (Dynamic Host Configuration Protocol) server.
- The IP address is then used for device identification on the network.

Block Diagram Explanation

Please refer to
DMRE55 Service manual
starting from page 41

- Video
- Audio
- Timer IC
- Digital A/V block

ORDER NO. DMRE55P/PC
124

Service Manual

DVD Video Recorder

**DMR-E55P
DMR-E55PC**

Colour
[P].....Black Type
[S].....Silver Type



Notes: The part of DVD Drive (VX11784) is listed separately.
Please refer ORDER No. RAM0492601C3

Specifications	
Power supply	AC100V, 50 Hz
Power consumption	36W
Recording system	DVQ video encoding format (DVQ100M)
Optical pick-up	DVQ video format (DVQ100) (with 360° air-levelling for DVDA, 100nm step height for DVDA)
Recordable discs	-12 cm 4.7 GB DVD-RAM discs -12 cm 8.4 GB DVD-RAM discs -8 cm 2.8 GB DVD-RAM discs -8 cm 1.4 GB DVD-R discs (for General ver. 2.0) -12 cm 4.7 GB DVD-R discs (for General ver. 2.0) -12 cm 4.7 GB DVD-R discs (for General ver. 2.0, DVD-R Revision 1.0)
Recording time	Max. 4 hours (using 4.7 GB disc) XP: 50 minutes SP: 30 minutes LP: 240 minutes EP: 300 minutes or 480 minutes
Region number	Region 1
Discs played	-12 cm 4.7 GB DVD-RAM discs -12 cm 8.4 GB DVD-RAM discs -8 cm 2.8 GB DVD-RAM discs -12 cm 4.7 GB DVD-R discs (for General ver. 2.0) -DVD-VCR discs -DVD-Audio discs -CD-Audio discs (CD-DA) -Video CD discs -DVD-CD-RW discs (DVD-DA, Video CD, MP3 formatted discs)
Audio system	Hi-Fi system, 2ch (max. 80 kHz)
TV system	Hi-Fi system, 2ch (max. 80 kHz)
Microfilm system	Hi-Fi system, 2ch (max. 80 kHz)
Head	L-INE (pin jack x1), L-10 (pin 75 to 8) connector x3 V-1.0 (pin 75 to 8) S-2.0 (pin 75 to 8) V-1.0 (pin 75 to 8) S-2.0 (pin 75 to 8) TV channel 200-600, 75 to 8 S-2.0 (pin 75 to 8) TV channel 200-600, 75 to 8 S-2.0 (pin 75 to 8)
Output	L-INE (pin jack x1), L-10 (pin 75 to 8) connector x1 V-1.0 (pin 75 to 8) S-2.0 (pin 75 to 8) V-1.0 (pin 75 to 8) S-2.0 (pin 75 to 8) TV channel 200-600, 75 to 8 S-2.0 (pin 75 to 8)
Composited video output (AVCH-VIDEO)	V-1.0 (pin 75 to 8) S-2.0 (pin 75 to 8) TV channel 200-600, 75 to 8 S-2.0 (pin 75 to 8)
Antenna reception input	TV channel 200-600, 75 to 8 S-2.0 (pin 75 to 8)
Auto system	Auto input connector (AVCH-VIDEO)
Reference input	Reference input: 200 mA rms S-2.0 (pin 75 to 8) Input impedance: 47 kΩ
Output	L-INE (pin jack x1) Reference output: 300 mA rms S-2.0 (pin 75 to 8) Output impedance: 1 kΩ Load impedance: 10 kΩ
Number of channels	Recording: 2 channels Playback: 2 channels
Other input/output connections	Optical audio output connector
Dimensions	Approx. 430 (W) x 274 (D) mm Approx. 16.181" (W) x 10.787" (D) (including protrusions)
Mass	Approx. 4.1 kg (9.0 lbs)
Operating temperature	5°C to 40°C (41°F to 104°F)
Shock	10% MSL (10% probability)
Vibration	10% MSL (10% probability)
Shock test	10% MSL (10% probability)
Rated operating voltage	100V AC, 50/60 Hz
Standby power	100V AC, 50/60 Hz
Laser power	No hazardous radiation is emitted when the safety protection.
Power consumption in standby mode	approx. 2.0 W

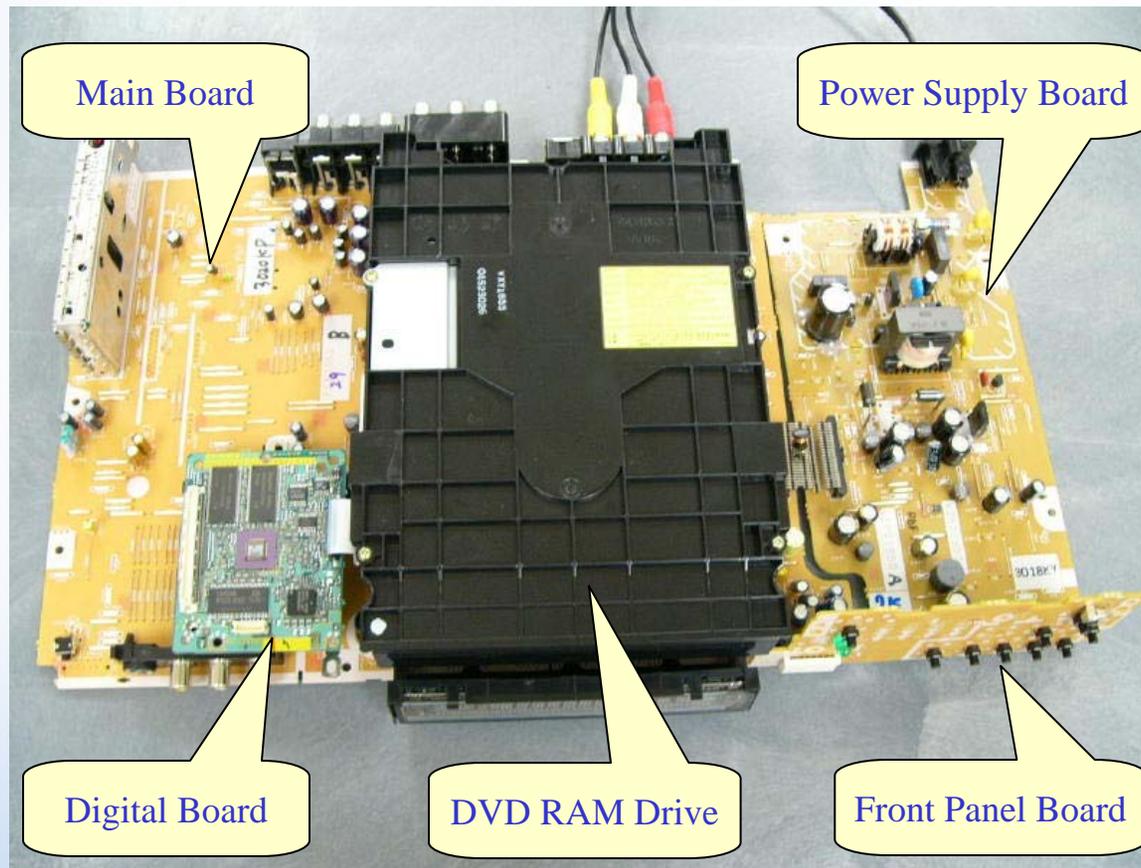
Notes: Mass and dimensions are approximate.
Specifications are subject to change without notice.

Panasonic

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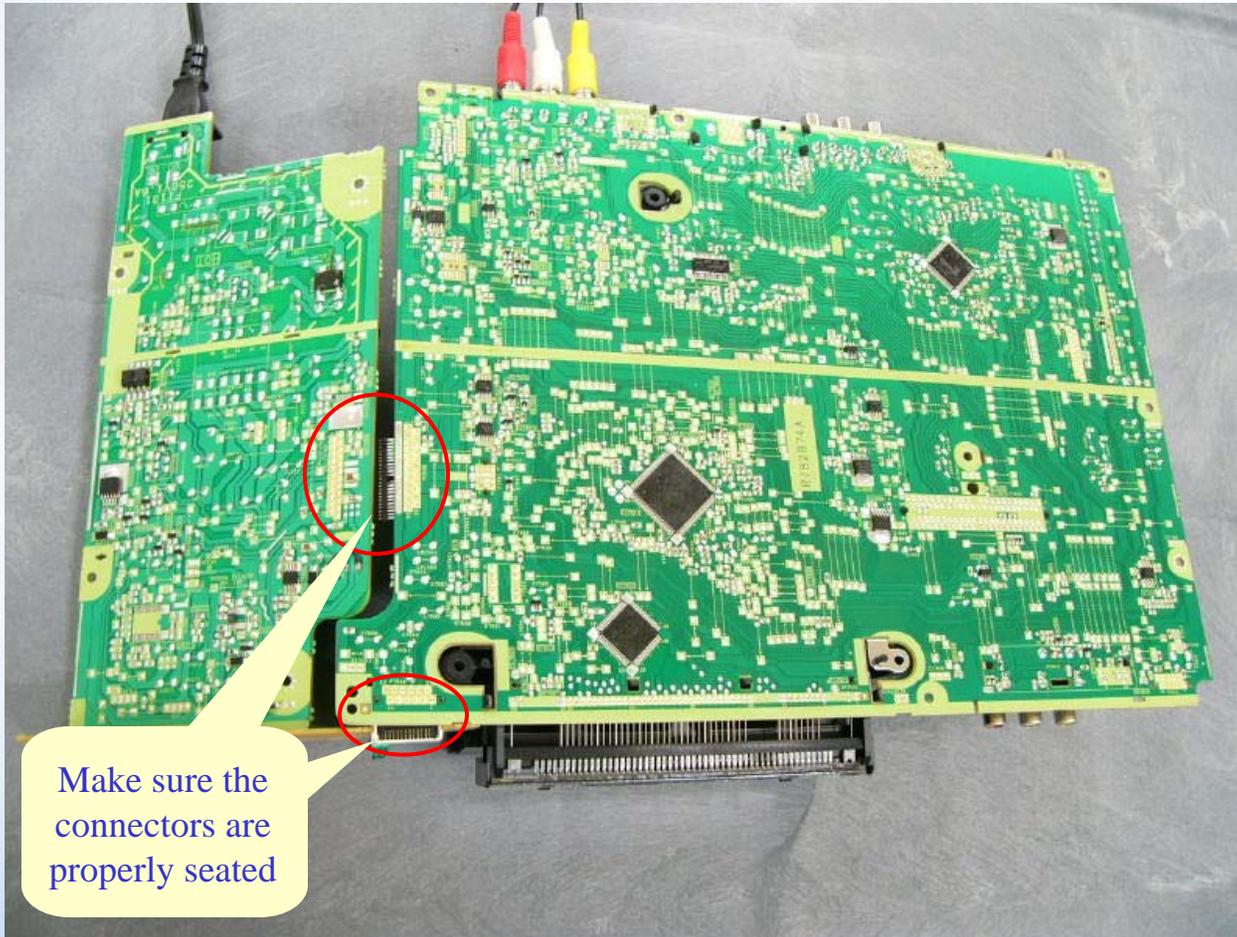
Service Position

Remove all blocks from the chassis, and connect them back together. Hold the DVD RAM drive and the power supply board in their positions and flip all blocks over.



Service Position

Check power supply, audio and video problems in this position.



Make sure the connectors are properly seated

DVD RAM Drive Replacement

In previous models, region number is stored in the DVD RAM drive. After drive replacement, the unit needs to be placed in a special service mode in order to set the drive's local region number.

Starting 2004 models, it is no longer necessary to set the drive local region number after replacement. The digital board will set the local region number regardless of the drive's setting.

After replacing the DVD RAM drive, always update the firmware to the latest version.

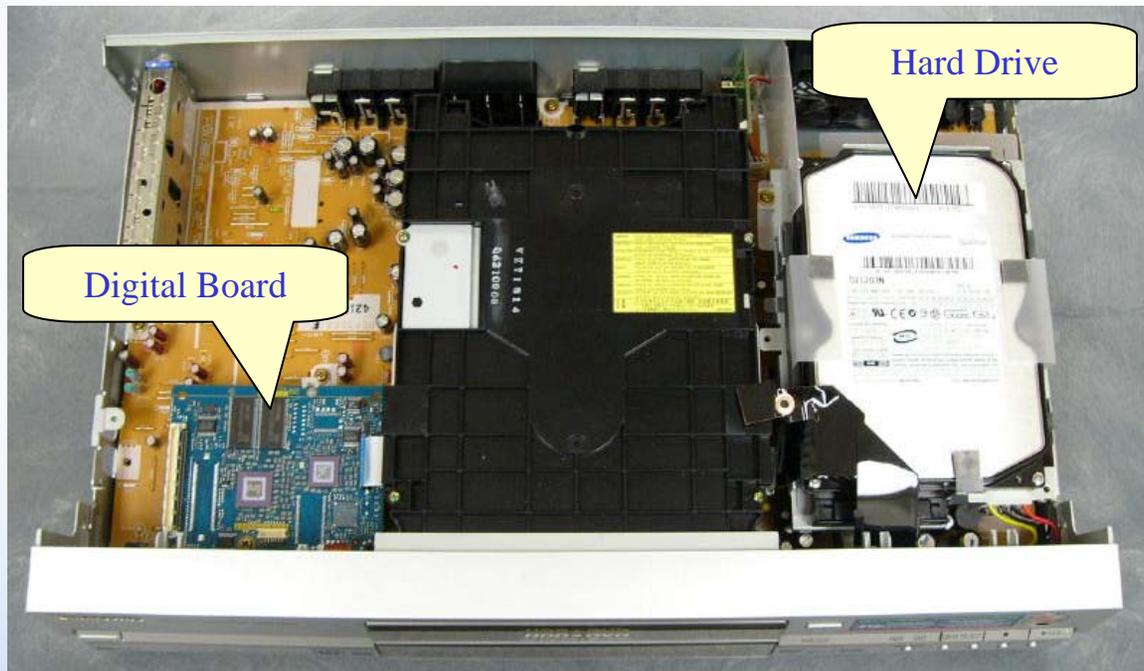
Starting in 2004 Models,
Region Number is stored
on the Digital Board



Hard Drive & Digital board Replacement

Digital board and hard drive replacement is the same as previous models. After replacing either component, the hard drive needs to be formatted before use. Please inform the customer before replacement

After replacing the digital board or the hard drive, always update the firmware to the latest version.

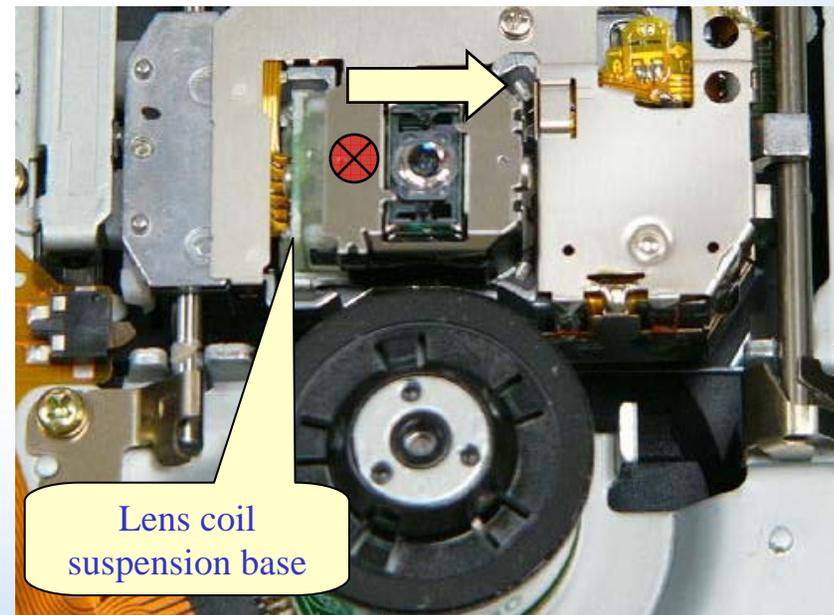
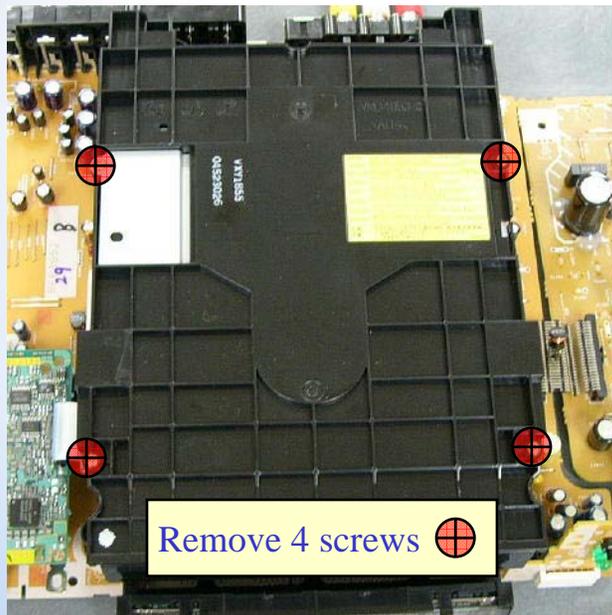


Lens Cleaning

In many cases, disc reading problem (U11, No Read...) may be corrected by cleaning the lens.

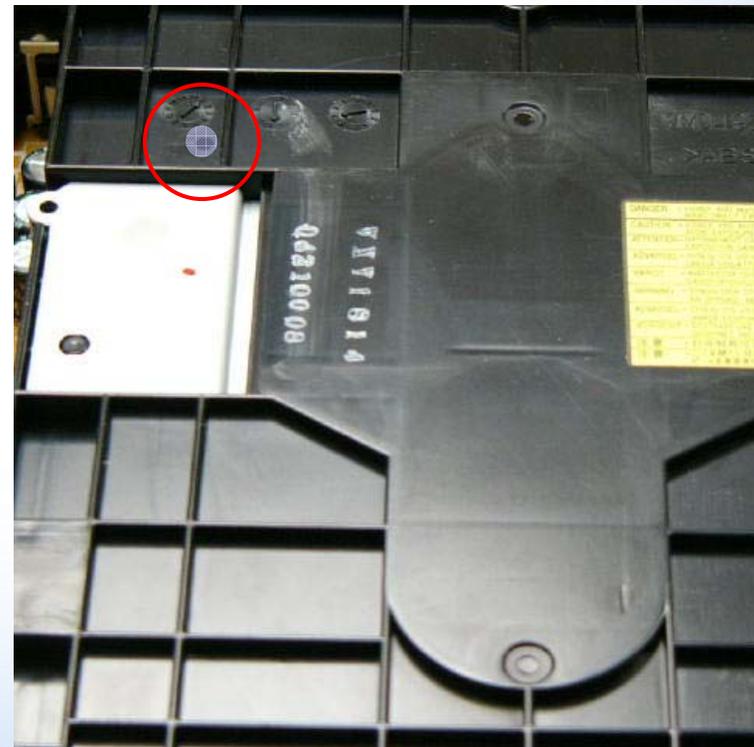
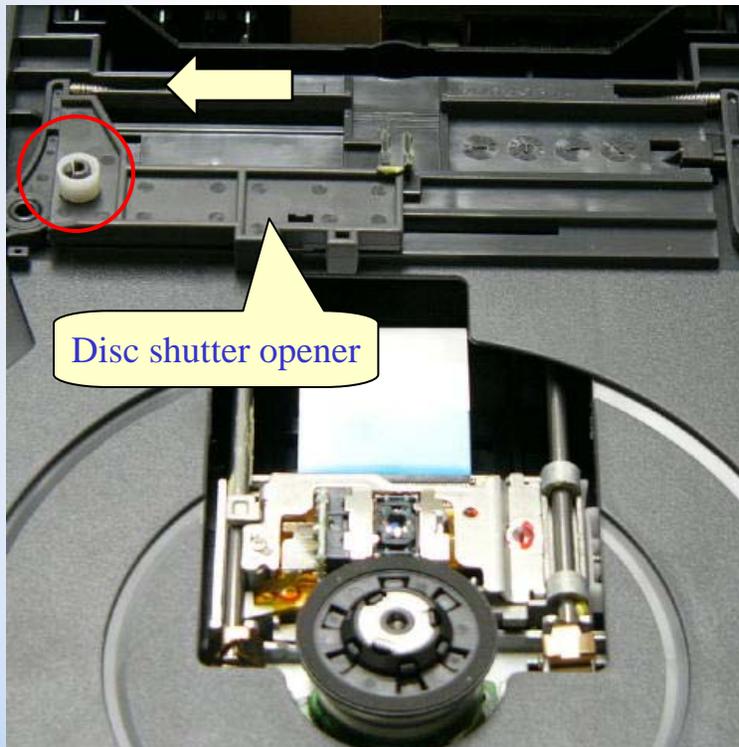
To clean the lens, you need to remove the front panel and the top cover on the drive.

Moisten a Q tip with camera lens cleaning fluid, rest the tip on the metal casing of the lens assembly (marked area) then move on top of the lens in one direction starting from the lens coil's suspension base...



Lens Cleaning

When re-assemble the top cover, make sure to move the disc shutter opener all the way to the left. After putting the top cover on the deck, you should be able to see the white roller through a small hole from the top. If the roller is not fixed at this location, the loading tray will jam later.



Part Numbers of Major Blocks

Model No.	RAM Drive	HDD	Digital PCB	Remarks
DMRE55	VXY1855	N/A	RFKBE55PC	
DMRE75	VXY1813	N/A	RFKBE75VPC	
DMRE85	VXY1814	RFKV0031HDK	RFKBE85HPC	120GB HDD
DMRE500	VXY1839	RFKV0035HDK	RFKBE500HPP	400GB HDD
SAHT1500	VXY1814	RFKV0033HDK	RFKBHT1500PC	80GH HDD

The defective parts for the above blocks must be returned.

To avoid delay of warranty claim payment, return the defective parts with a copy of the work order (CESAR form) to Panasonic Parts Department.

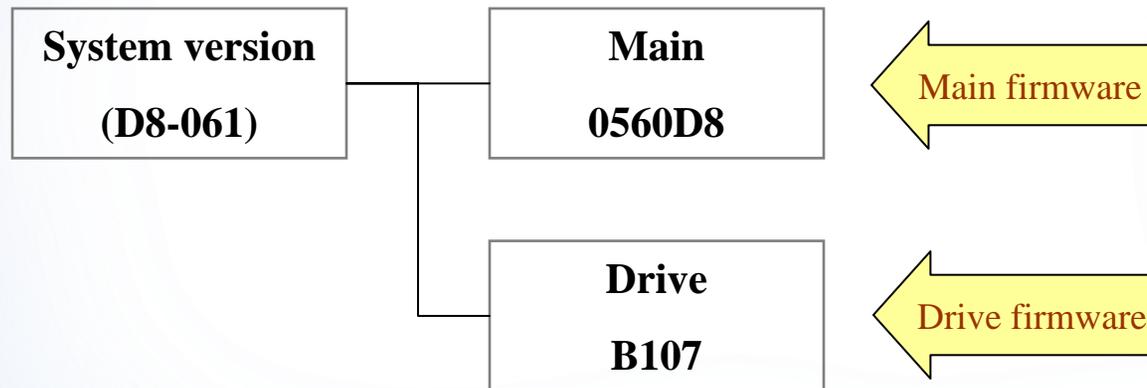
Firmware Update

- Panasonic DVD Recorders uses CD-R to update firmware.
- The update file must be written on a CD-R in ISO9660 format
- Panasonic Canada will provide the update disc image on its Service Web site.
- Please refer to the next few pages for instructions.

Firmware Update

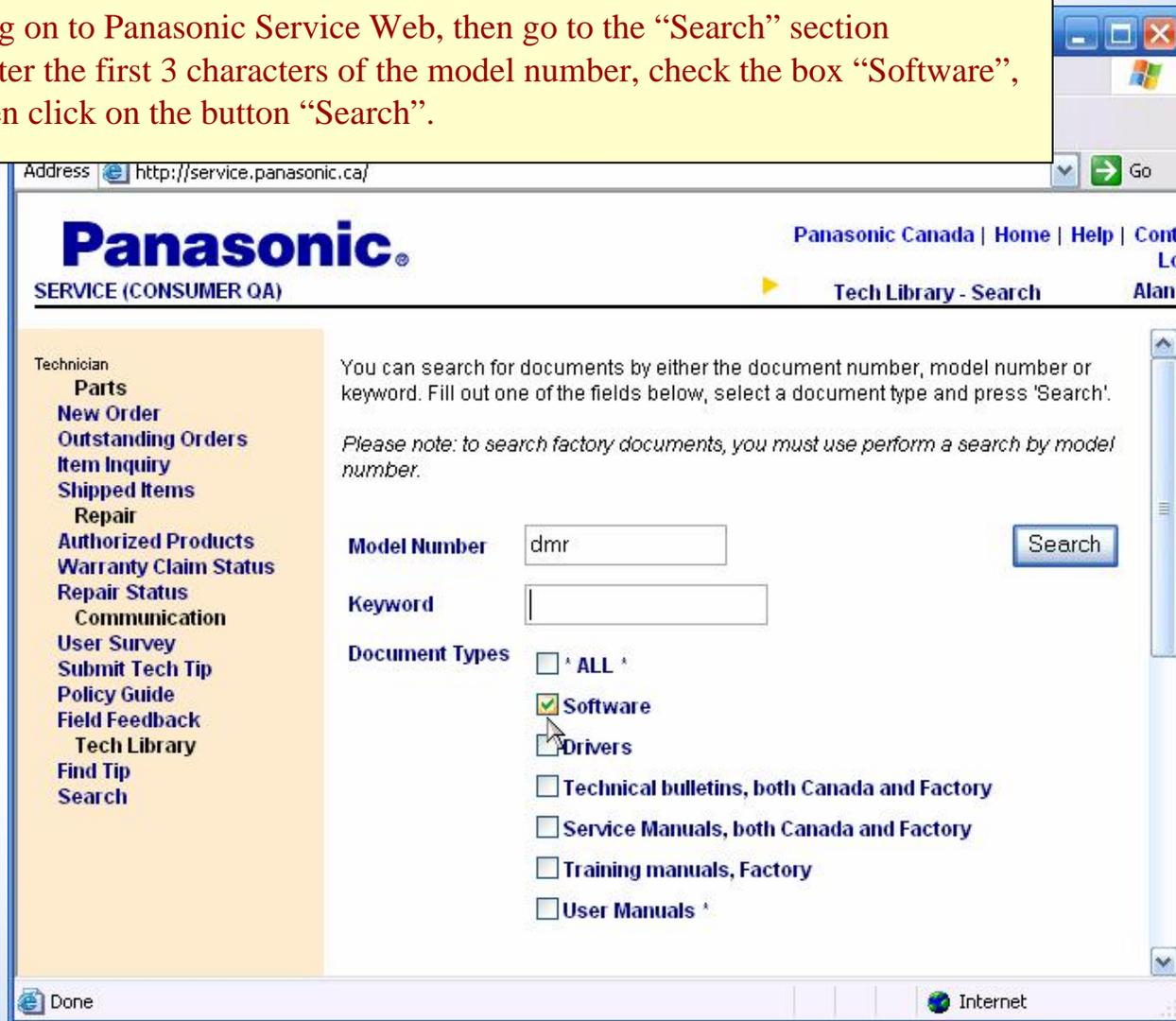
Firmware Version Explanation

Example: DMRE50 Version D8-061



Firmware Update

1. Log on to Panasonic Service Web, then go to the “Search” section
2. Enter the first 3 characters of the model number, check the box “Software”, then click on the button “Search”.



Firmware Update

3. The screen will return with a list of firmware files. Right click on the file name and select "Save Target as..."
4. Save the file to a folder or Desktop. The size of the files ranges from 4MB to 10MB depending on the model.
5. Start your CD burning program and burn the image on a CD-R.



Technician

Parts

New Order

Outstanding Orders

Item Inquiry

Shipped Items

Repair

Authorized Products

Warranty Claim Status

Repair Status

Communication

User Survey

Submit Tech Tip

Policy Guide

Field Feedback

Tech Library

Find Tip

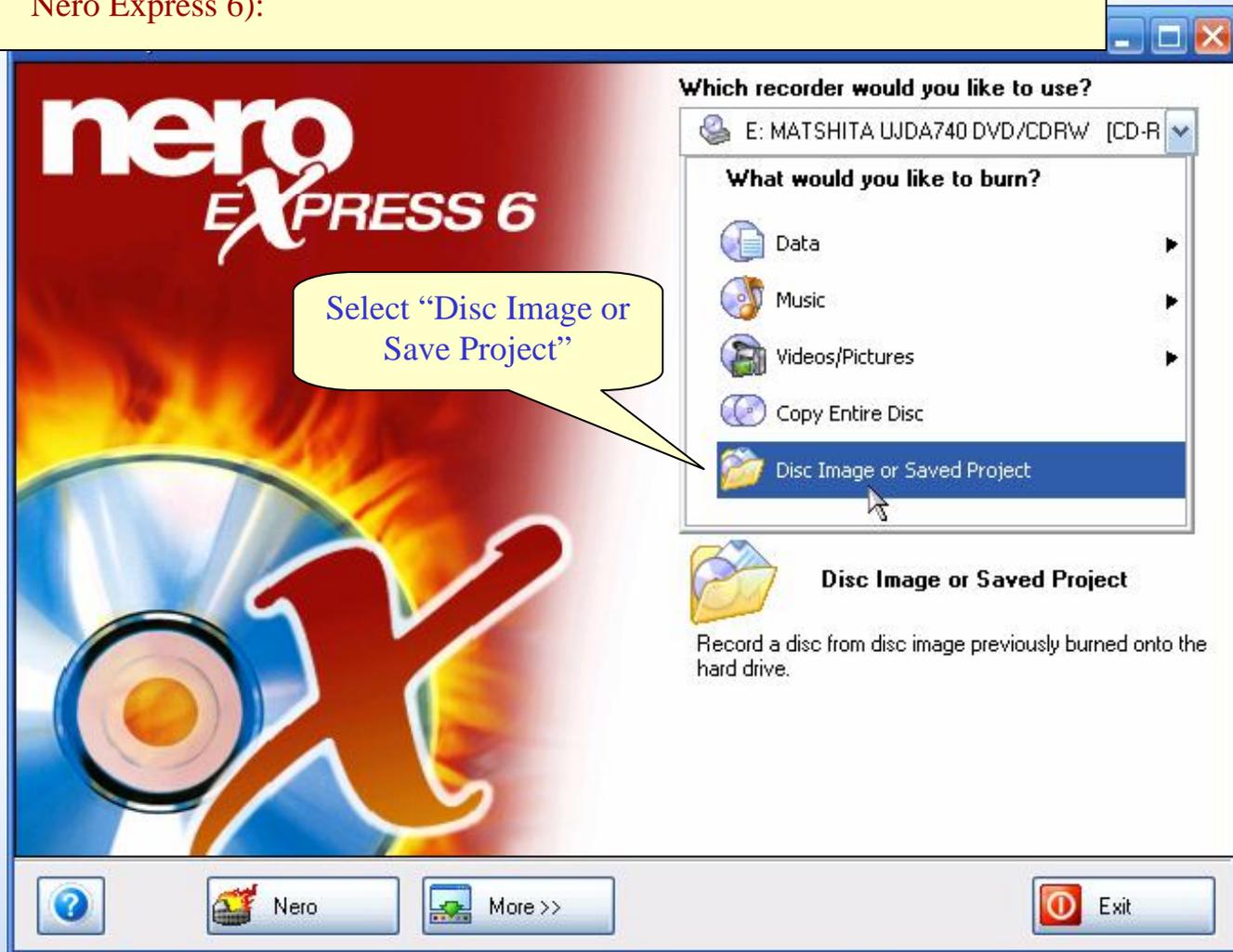
Search

Detailed List of documents matching search criterion:
(Click on the link under the Filename column to see the document.)

File Name (Click below)	Model Number	Content Type	Product Category	Title/Description	Model Year
e60_dc040.iso	DMRE60S	Software	DVD Player	DMRE60 firmware update disc image Version: Main 0400DC, Drive B107	
e50_d8064.iso	DMRE50K	Software	DVD Player	Firmware disc image. Use only on Canada model DMRE50. Main 0590D8 Drive B107	
e80h_d9020.iso	DMRE80	Software	DVD Player	Firmware disc image. Use only on Canada model DMRE80. Main 0180D9 Drive B107	
e55_dk086.iso	DMRE55S	Software	DVD Player	Firmware disc image. Use only on DMRE55 Main 0840DK Drive J117	

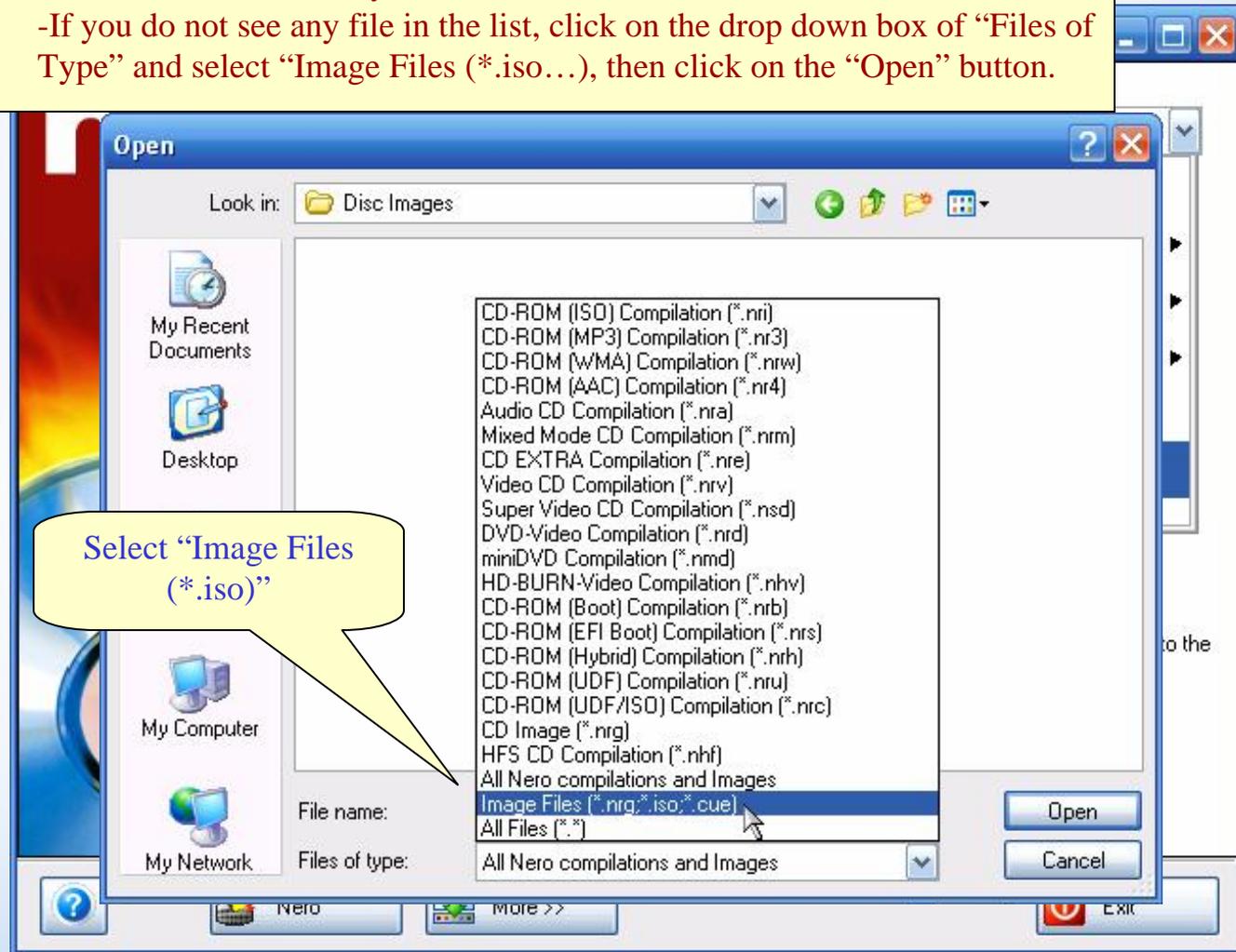
Firmware Update

6. If you use Nero Express, follow these instructions (example shown using Nero Express 6):



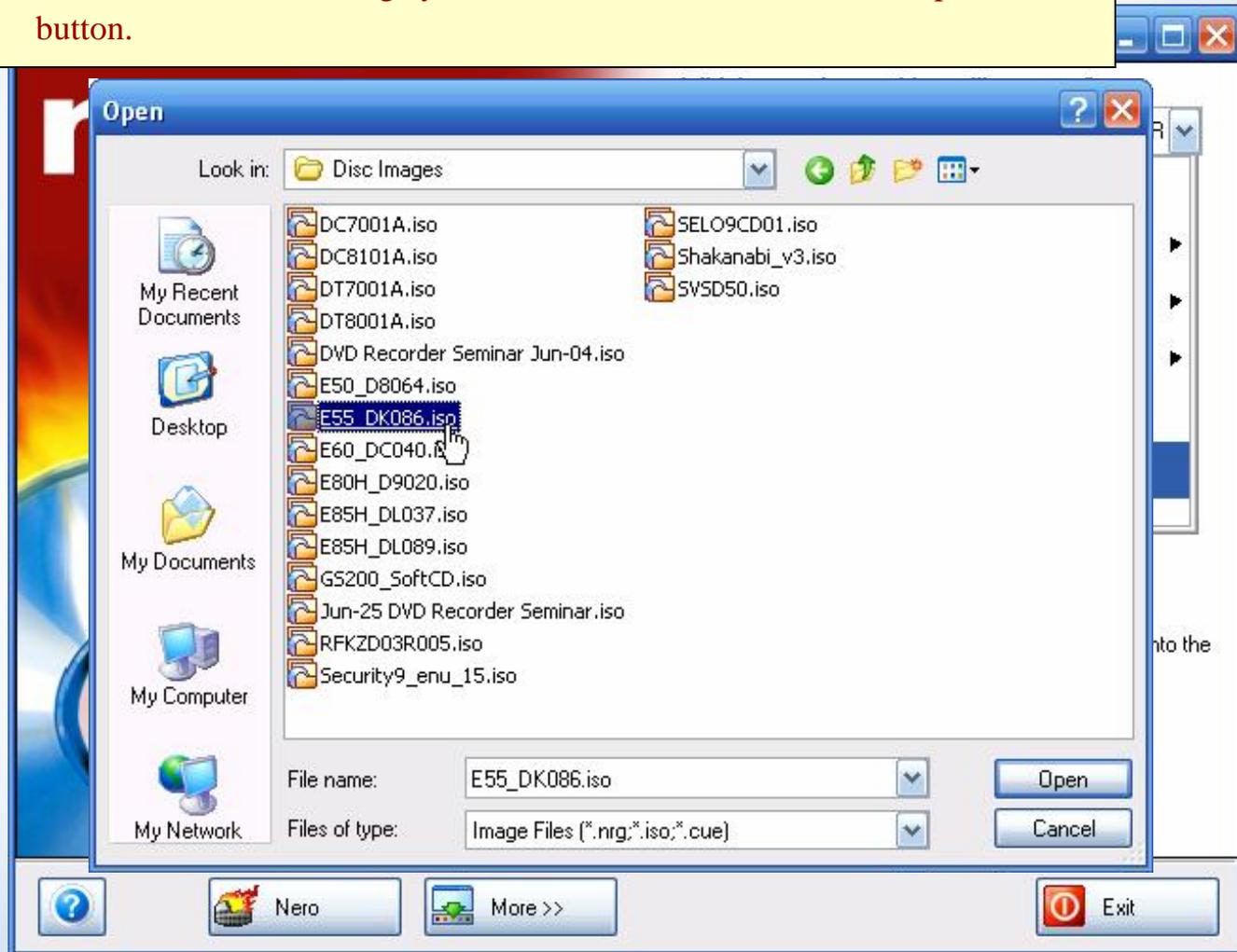
Firmware Update

6. -Go to the folder where you save the firmware file.
-If you do not see any file in the list, click on the drop down box of “Files of Type” and select “Image Files (*.iso...), then click on the “Open” button.



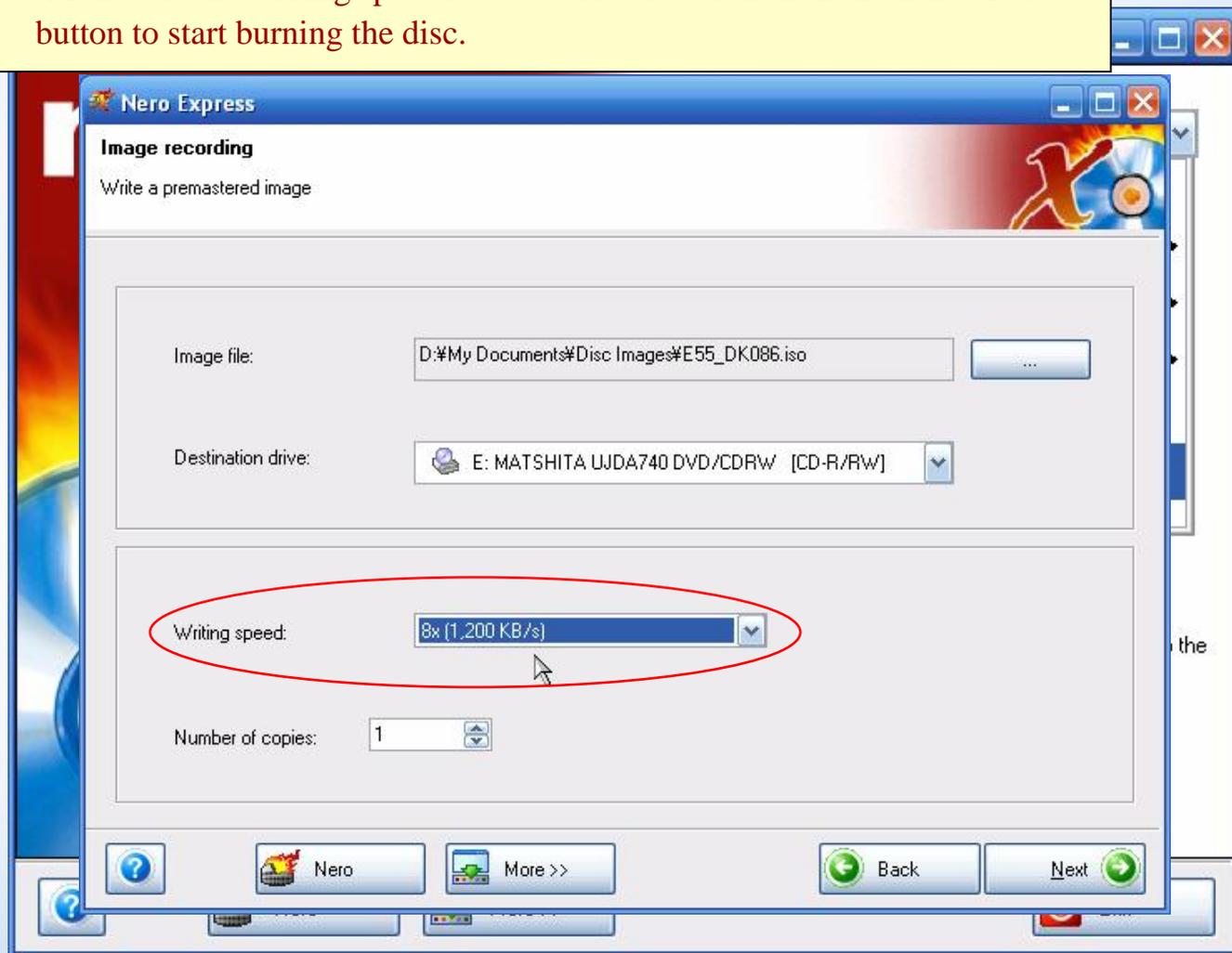
Firmware Update

6. -Select the firmware image you want to burn and click on the “Open” button.



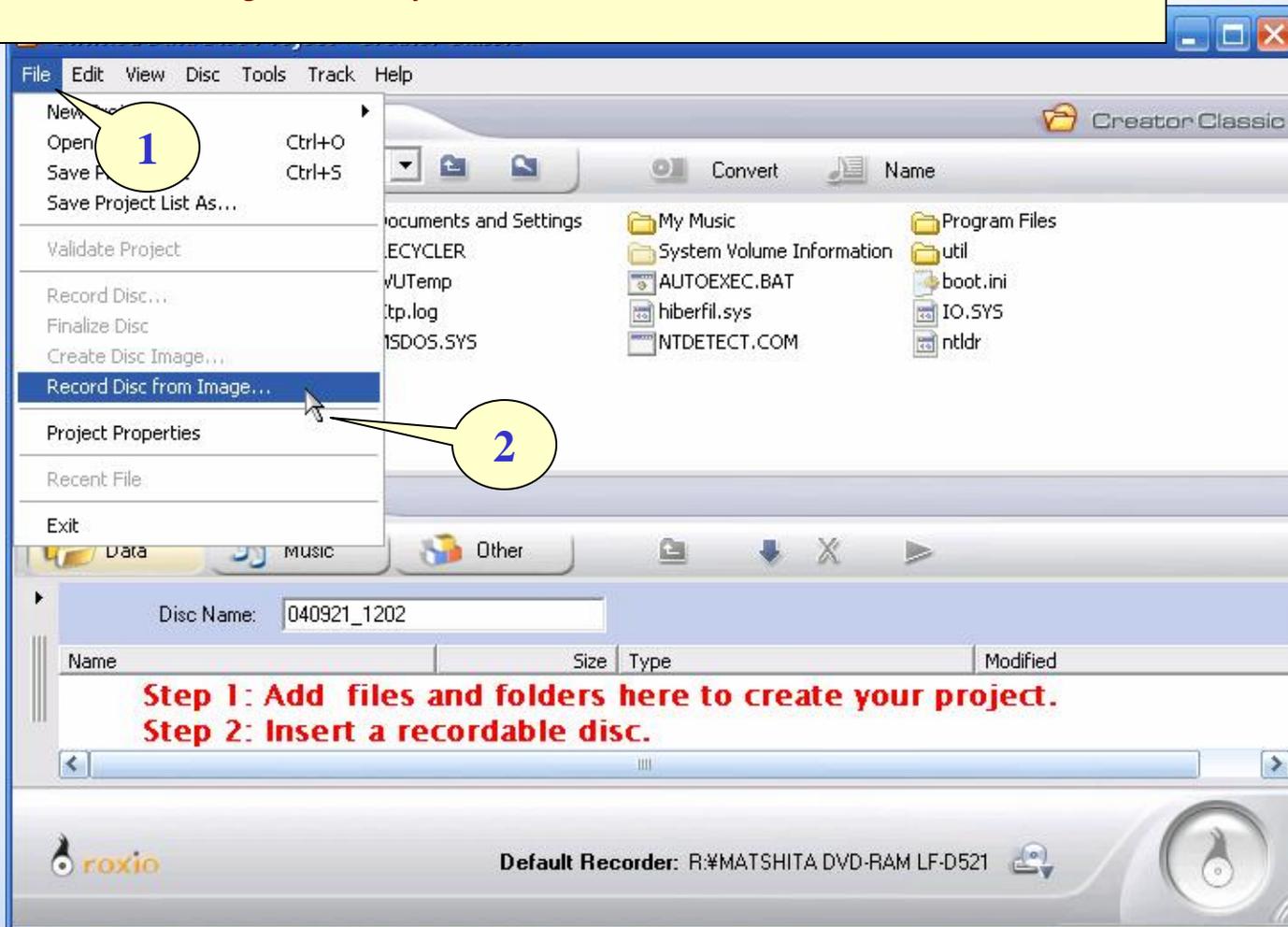
Firmware Update

6. -Make sure the writing speed is set at 8X or lower then click on the “Next” button to start burning the disc.



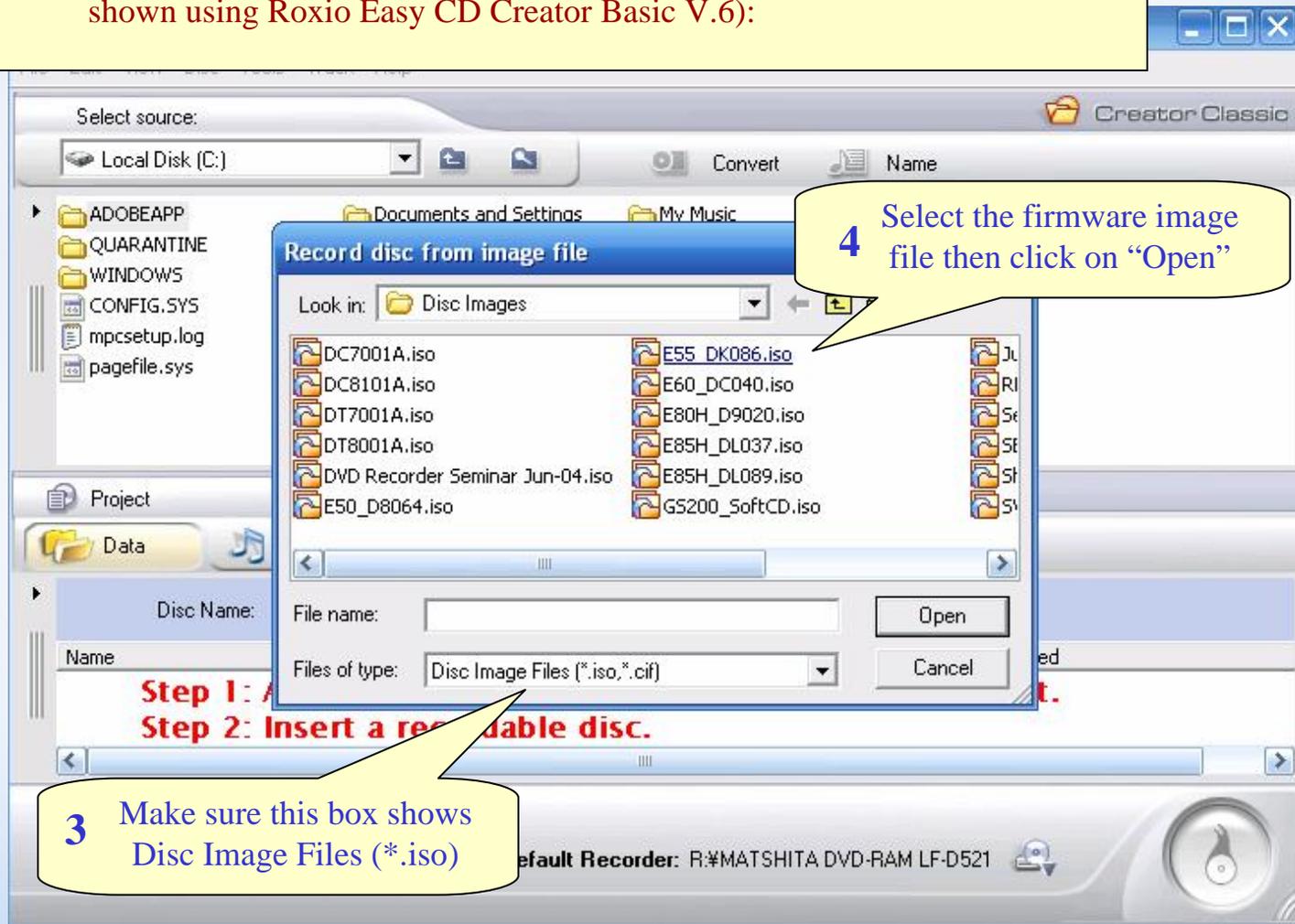
Firmware Update

6. If you use Roxio Easy CD Creator, follow these instructions (example shown using Roxio Easy CD Creator Basic V.6):



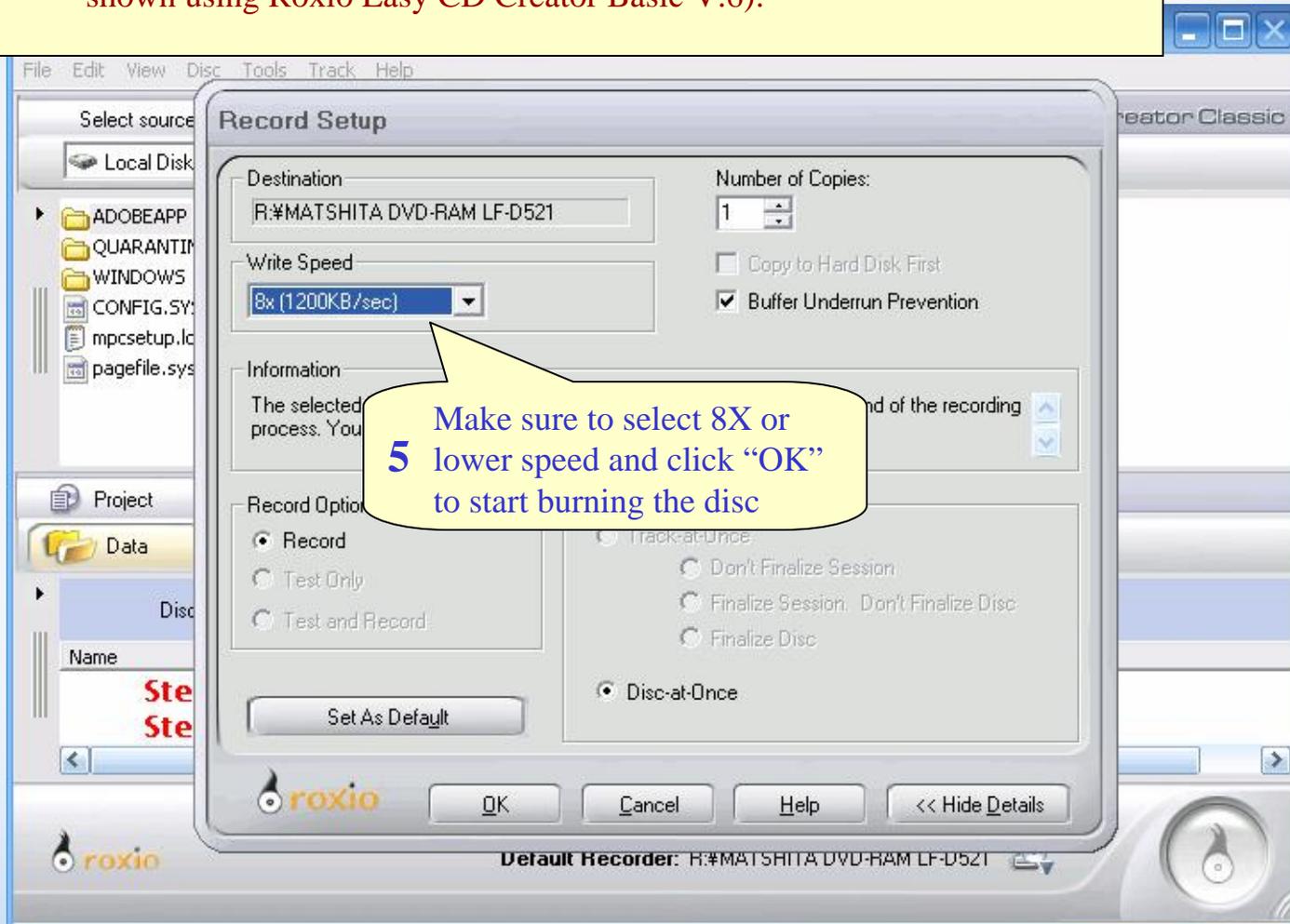
Firmware Update

6. If you use Roxio Easy CD Creator, follow these instructions (example shown using Roxio Easy CD Creator Basic V.6):



Firmware Update

6. If you use Roxio Easy CD Creator, follow these instructions (example shown using Roxio Easy CD Creator Basic V.6):



Firmware Update

- After burning the firmware CD, load it in the unit.
- If the FL display shown “**Unsupport**” after reading the disc, then the unit has either the same version or newer version.
- If the unit has older version, it will turn off by itself and then re-start to load the firmware.
- Watch the update progress shown in the FL display and wait until it shows “UPD OK” (or similar message depending on model) and the tray opens by itself.
- Remove the disc and press the power switch to turn the unit off. Do not press the Open/Close” switch after removing the disc as the update is not complete without switching the unit off.

New Firmware List (Oct-05-04)

Model Number	Version	Problem Fixed
DMRE55	DK-088 Main 0840DK Drive J125	If DVD-R is finalized after playing CDDA/MP3, unit will hang.
DMRE75	DQ-070 Main 0680DQ Drive J125	French OSD, dividing some titles.
DMRE85	DL-099 Main 0950DL Drive J125	EPG lost after power outage.

Troubleshooting-EPG

- The most common complaint about EPG is no listing after the waiting period following initial TV Guide Setup.
- If the unit has the same problem in your service shop, confirm the TV signal reception by checking the “Closed Caption”. If there are garbage characters, it means the signal is weak and EPG data will also have problem.
- Please direct all TV Guide operating problems to Panasonic Customer Care Center at 1-800-561-5505, or
<http://www.panasonic.ca/english/customercare/feedback.asp>
http://www.panasonic.ca/french/serviceclient/feedback_fr.asp

Troubleshooting DMRE500 Network Related Problem

- Troubleshooting network problem requires high level PC skill.
- Please direct all units with network related problems to your region's Panasonic Factory Service Centers.

Troubleshooting Hard Disk Drive (HDD) Related Problem

Before you decide to replace the HDD, try the following:

- Active service mode 31 (HDD READ Inspection). The unit will perform a read/write scan test and will display the result on the units FL display.
- Use the DVD recorder to format the HDD to see if it would correct the problem.