

SONY®

*Blu-ray Disc*  
*Guide*



# **VAIO® Blu-ray Disc™ Disclaimers, Notes, Warnings**

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# Blu-ray Disc™ Guide

## What is Blu-ray Disc™ Media?

Blu-ray Disc™ media (BD), is a revolutionary new media format developed by a group of the world's leading consumer electronics, personal computer, and media manufacturers.

The Blu-ray format was developed to meet the entertainment and storage demands of the “High Definition” era that the entire world is rapidly moving to embrace. Blu-ray technology brings to market a new high definition media, which can not only store high definition video, but also high definition audio. In addition, Blu-ray Disc media have the storage capacity for enormous amounts of data.

## Benefits of Blu-ray Technology

The benefits of Blu-ray technology include:

- |                      |                                    |
|----------------------|------------------------------------|
| <b>Simplicity</b>    | <b>Storage Capacity</b>            |
| <b>Compatibility</b> | <b>Flexibility / Interactivity</b> |

## Simplicity

Blu-ray technology makes the task of choosing which basic media type to use easy with only three different formats to choose from. They include:

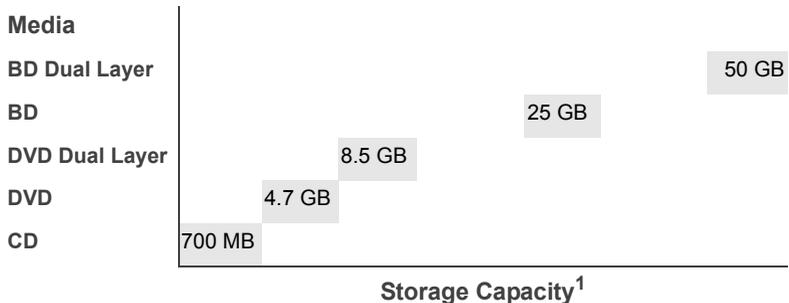
- **BD-R** (Blu-ray Disc Recordable) - Recordable format for HD video recording and PC data storage.
- **BD-RE** (Blu-ray Disc Re-writable) - Rewritable format for HD video recording and PC data storage.
- **BD-ROM** (Blu ray Disc Read Only Memory) - Read only format for HD movies, music, software, games, etc.

These discs are available with a storage capacity of 25 GB<sup>1</sup> (single layer) and 50 GB<sup>1</sup> (dual layer).

**Note:** Blu-ray Disc™ storage capacity totals are for high-definition content.

## Storage Capacity

The chart below clearly demonstrates the enormous storage capacity of a Blu-ray Disc when compared to CDs and DVDs.



**Blu-ray Disc offers five times the capacity of DVDs without compromising quality.**

## **What does this mean for me?**

The limited capacity of DVDs results in video and audio files being compressed to fit on a disc. This causes a quality reduction in the picture and/or sound. The greater capacity of BD discs allows for pristine picture quality and virtually full spectrum audio.

## **Compatibility**

Blu-ray Disc™ offers a convergence of technology and compatibility among a new generation of high definition movies, video players, video recorders, personal computers, and gaming systems.

And what about your current library of DVDs and CDs? The Blu-ray Disc generation of home entertainment products will be backward-compatible with your CDs, DVDs, and other optical disc formats.

## **Flexibility and Interactivity**

The technology built into each Blu-ray disc gives you, and industry professionals creating high definition content, the tools to create a viewing experience that up until now has not been possible for home entertainment. For example:

- Multiple video layers can now be on the screen at the same time. A presentation layer, customizable by a studio, allows the content creator to place graphics on the screen on top of the video or alongside it. Sitting on top of that layer is the Blu-ray navigation layer that will allow you to interact with the menu while the video is playing.
- Support for Java applications allows the video layer to be re-sizable providing even greater flexibility. Imagine the possibility of watching a movie and playing an interactive game related to the movie—all at the same time.

## What do I need to experience Blu-ray technology?

To fully appreciate Blu-ray's video and audio output capabilities<sup>2</sup>, you would need the following:

**Note:** Your VAIO<sup>®</sup> computer comes equipped with a HDMI<sup>™</sup> or DVI-D HDCP connection, depending on the model you purchased.

### TV / Monitor

For the *best* experience and output to a HD TV or monitor (HDCP monitor), do the following:

- Output to a high definition television/monitor using HDMI or DVI-D<sup>3</sup> connection.
- Use a Blu-ray Disc player. (See the program "InterVideo<sup>®</sup> WinDVD<sup>®</sup> BD for VAIO<sup>®</sup>" included with your computer.)

### Audio

For the *best* experience and output to an audio system, do the following:

- Use a high-quality A/V receiver or sound decoder device with a quality set of 5.1 or 7.1 surround sound speakers.

**Note:** If your computer has HDMI output, use HDMI to your TV/monitor as the sound source. Otherwise, use the S/PDIF output.

## Notes

- The content of certain Blu-ray Disc™ movies may require a HDCP compliant monitor. If your TV/monitor has a HDMI™ connection, it should support the HDCP content protection functionality.
- If you connect to your TV/monitor using DVI, check your display's user manual to see if it is HDCP compliant.
- Analog connections such as Composite and S-Video are able to output BD content, but only at standard definition resolutions.
- Higher capacity analog connections, such as VGA, are able to output BD content, but may be limited to a lower quality if the disc manufacturer limits the video resolution for non-HDCP compliant displays.
- To maximize picture quality of Blu-ray Disc recorded content on compatible external displays, Sony recommends setting the display resolution to 1080p or 720p and disabling dual display mode.
- When powering your VAIO notebook computer with a battery, the power management features of the system can limit CPU and video functions, interrupt tasks with warning messages, or may cause the system to suspend or hibernate before tasks are completed. Therefore, Sony recommends that you use your AC adapter for demanding tasks like burning data to DVD or Blu-ray Disc media, playback of Blu-ray Disc recorded content, and high end graphic functions such as 3D rendering to maximize display quality and to avoid possible disruption of operations.

## Blu-ray Disc Compatible Programs

Sony has included three Blu-ray Disc compatible software programs to the VAIO® package of factory-installed software for select VAIO personal computers. They are provided to give you the tools you need to experience Blu-ray Disc technology. The included programs are:

- Roxio® Easy Media Creator — Backup up large amounts of data to recordable optical discs.
- Click to DVD BD — Capture, edit, and save videos in BDAV and BDMV format<sup>4</sup>.
- InterVideo® WinDVD® BD for VAIO — Software BD player combining all of the features of a standard BD player with advanced functionality<sup>2</sup>.

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## Roxio® Easy Media Creator

Roxio® Easy Media Creator is perfect for backing up large amounts of data to recordable optical discs. The version of Roxio Media Creator installed on your VAIO computer supports the creation of data discs using Blu-ray Disc™ technology.

You can also protect your important music, video, and data files by using the Easy Archive feature to transfer and store files on high-capacity Blu-ray discs<sup>4</sup>.



# Creating a Data Disc

## Before you begin

If you plan to use a BD-R (write once) disc when creating a data disc, you should consider whether you want the disc left open (appendable) or closed (non appendable) at the end of a recording session.

- **To leave the disc open**, choose the option **I would like to use discs for more than one recording**. Selecting this option allows you to record multiple times to a single disc. However, fewer drives may be able to read the disc. Use this option if you expect to make many small recordings on high capacity discs, or if you do not need to share your discs.
- **To close the disc**, choose **I only need to use discs for one recording**. Selecting this option allows you to record only one time to a disc. However, a larger number of drives will be able to read the disc. Use this option if you typically fill your discs during a single recording session or wish to use the disc on more than one computer.

### **To create a data disc**

- 1 Start Roxio® Easy Media Creator.

From the Windows® Taskbar, click the **Start** button. Point to **All Programs, Roxio**, click **Easy Media Creator**, and then click **Home**.



- 2 From the Project Menu on the left side of the screen, click **Data**. Then select **Data Disc**.

**Note:** To open a saved Data Disc project, go to the main menu and select **File, Open Saved Project**, and locate the project file you would like to open. By default, saved projects are stored in your My Documents folder with a.sonic file name extension.

- 3 Click the **Destination Selection** combo box, located in the control panel across the bottom of the screen, and select a recorder drive from the available list.
- 4 Insert a blank Blu-ray Disc™ media into the selected recorder drive.



- 5 If desired, type a name for your disc in the **Volume Label** text box located at the top of the project window.

**Note:** If your disc already contains files and they do not display in the project window, you can add the files by clicking the **Load Disc** button.

- 6 Add files to your disc by the following methods:

- Click the **Add Data** button and from the **Select files and folders to add** screen, locate and select the files/folders you wish to add. If desired, rename the selected file/folder in the File Name text box, and then click the **Add** button.
- **Drag** files and folders directly from a directory window and **drop** them in the project window display area.

#### **Project window display area notes**

- Click a column heading to sort the data in ascending or descending order.
- Use the control box to manage or remove files and folders in the list.



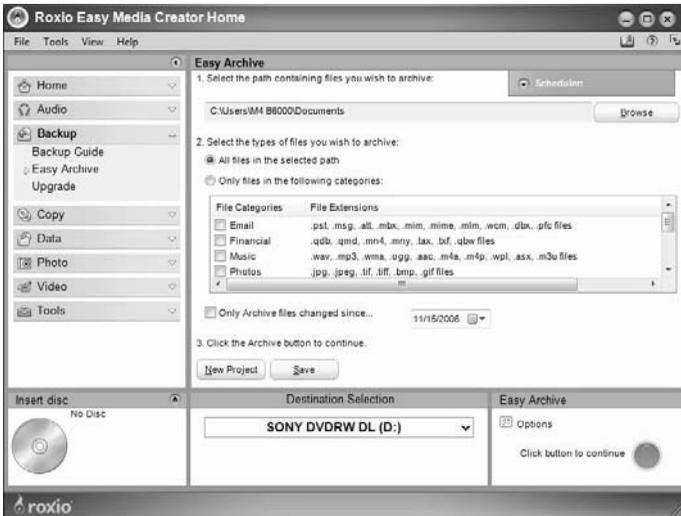
- 7 From the Project Menu, click **Tools | Disc Information**. Review the **Inserted Disc** information and make sure that the data in your current project will fit on the disc. If the data will not fit, select one or more files and click the **Remove** button in the control box.

**Note:** Removing files/folders from a Data Disc project will not remove the files/folders from your hard drive.

- 8 Click **Save** to save the file/folder list. Once saved, the list can be easily accessed at a later time.
- 9 Click the **Continue** button to begin recording data to your disc.  
A progress screen displays and will inform you when the project has completed.
- 10 Click the **Done** button to return to the project window. Remove the disc from the drive and store in a safe place.

## Easy Archive

The Easy Archive project lets you easily backup important files to a disc or hard drive. An Easy Archive project can be scheduled to run whenever it's convenient. Large archive projects are automatically spread across as many discs as you need.



### ► To use Easy Archive

- 1 From the Project Menu on the left side of the screen, click **Backup**. Then click **Easy Archive**.
- 2 Select a destination drive. If the destination is a disc drive, insert a blank or rewritable disc.
- 3 Carefully read the on-screen instructions and select the file categories to archive.

**Note:** To schedule this project, click the **Scheduler** button and select the desired archive frequency by choosing an option from the **Scheduling options** drop-down list. Click the **Save** button and enter a project name and then click **OK**. The project name and scheduled run date displays in the Scheduler.

- 4 Click the **Easy Archive** button located in the Control Panel across the bottom of the screen to run the project now.
- 5 Click the **Done** button to return to the project window.

## Additional Information

Roxio® Easy Media Creator is designed to be used for both Blu-ray Disc™ and standard definition functionality such as CD burning, standard DVD burning, etc. For additional information about the Roxio Easy Media Creator features available to you, refer to the Help file<sup>5</sup>.

### To open the Help file

Do one of the following:

- From the main menu, click **Help**.
- Click the **Help/Tutorial** icon located on the Welcome banner.
- Press the **F1** key on your keyboard.



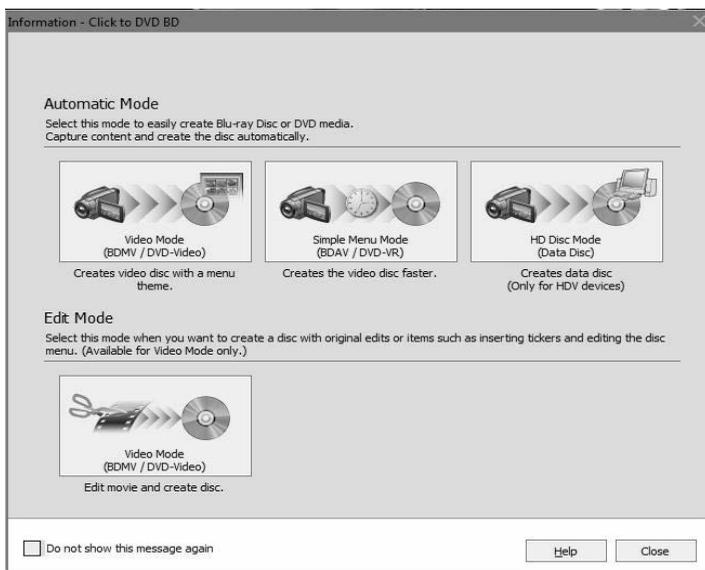


## Click to DVD BD

With Click to DVD BD you can easily create your own discs using the Blu-ray optical disc drive in your VAIO computer system.

Click to DVD BD allows you to do the following:

- Automatically capture and record videos and pictures to a disc using the **Automatic Mode(s)**.
- Append videos to the disc created by Click to DVD BD using the **Automatic Mode (Simple Menu)**. Content will be saved as BDAV format to Blu-ray disc and DVD-VR format to DVD.
- Write High Definition videos that have been recorded by a HDV device to DVD or Blu-ray disc with HD quality using the **HD Disc Mode (Data Disc)**.



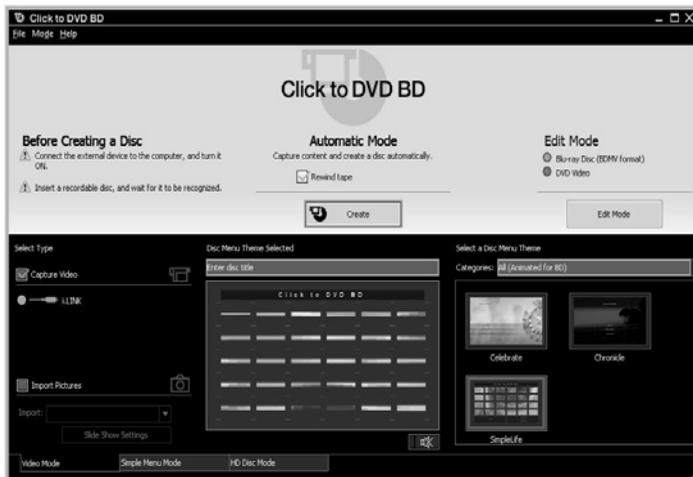
**Note:** After creating a Blu-ray Disc with Click to DVD BD, you can view the results with InterVideo® WinDVD® BD for VAIO®. Simply start InterVideo WinDVD BD for VAIO, insert the disc in the BD drive, and then click the **Play** button.

## Automatic Mode(s)

Both Automatic Mode (Video Mode) and Automatic Mode (Simple Menu Mode) can be used to create discs usable with Blu-ray playback devices. These modes allow you to automatically capture videos and pictures and record them to disc.

### Automatic Mode (Video Mode) Description

The Automatic Mode (Video Mode) allows you to create discs with titles and menus for captured images. You can also record imported pictures to a disc and create slide shows. Discs created in Video Mode can be played on most disc players. Data is saved on Blu-ray discs in the BDMV format.



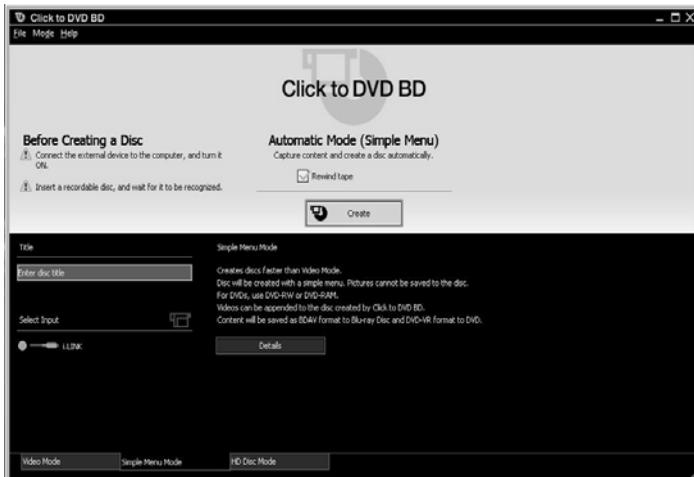
### ► Steps to Set Up Automatic Mode (Video Mode)

- 1 Click the **Video Mode** tab.
- 2 Connect an external device to your computer.
  - When connected to a digital camcorder or MICROMV device, set the device's power switch to **Play/Edit or VCR/VTR**.

- When connected to an analog video device, turn the device's power to the **ON** position.
- 3 Select the source material category.
- Click the **Capture Video** check box and then click to specify the connection method for your computer and external device (i.LINK or Analog<sup>6</sup>).
  - When importing digital pictures that have been captured with a digital camera, click the **Import Pictures** check box. Insert the media containing the pictures into the computer, and select the drive name from the **Import** drop down list. To access the slide show settings, click the **Slide Show Settings** button.
- 4 Specify a theme.
- Enter the title of your disc in the text field. A list of preinstalled themes displays.
  - From the **Menu**, click on the theme you wish to use for your disc.
- 5 Click the **Create** button.
- The process from capturing video to writing it to disc is performed automatically. Once the writing has completed, a notification message appears. The time required to create a disc depends on the type of computer you are using and the recording format.
  - Once the disc has been successfully created follow the **To copy** or **To complete** instructions listed below.
    - **To copy**, click on the **Copy** button to repeat disc creation.
    - **To complete** this operation, click the **Close** button and remove the ejected disc.

## Automatic Mode (Simple Menu Mode) Description

The Automatic Mode (Simple Menu Mode) allows you to create discs in much less time than in Video Mode. This Mode does not allow you to import pictures. Data is saved on Blu-ray discs in the BDAV format.



### ► Steps to Set Up Automatic Mode (Simple Menu Mode)

- 1 Click the **Simple Menu Mode** tab.
- 2 Connect an external device to your computer.
  - When connected to a digital camcorder, set the device's power switch to **Play/Edit** or **VCR/VTR**.
  - When connected to an analog video device, turn the device's power to the **ON** position.
- 3 Select the external device connection you wish to use.
- 4 Enter a title for the disc in the text box.

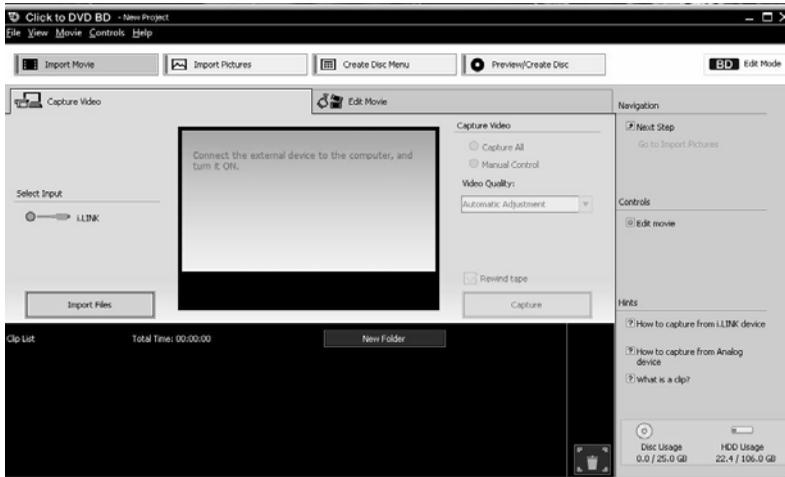
**Note:** If the title is too long, some playback devices may only display part of it. If you use a Blu-ray disc, the title may appear by changing the Blu-ray disc character code in **Automatic Mode (Simple Menu Mode)**.

5 Click the **Create** button.

- The process from capturing video to writing it to disc is performed automatically. Once the writing has completed a notification message should appear. The time required to create a disc depends on the type of computer you are using and the recording format.
- Once the disc has been successfully created follow the **To copy** or **To complete** instructions listed below.
  - **To copy**, click on the **Copy** button to repeat disc creation.
  - **To complete** this operation, click the **Close** button and remove the ejected disc.

## Edit Mode

The Edit Mode allows you to collect and edit video and pictures. You can also edit a disc menu. Use this mode to create discs with the maximum originality. Data is saved on Blu-ray discs in the BDMV format.



### ► To Capture Video

- 1 Click **Import Movie**.
- 2 Capture Video.
  - When using a DV,HDV, or MICROMV device select **Capture All**, and click **Capture**.
  - When importing video files click **Import Files**. A dialog box appears, select a video file, and click the **Open** button.
  - When importing from an HD disc click **Import Video From HD disc** from the **Movie** menu. Files on the HD disc are automatically added to a **Clip** list.

### ► To Edit Movie

- 1 Click the **Edit Movie** tab.

## 2 Edit Movie.

You can divide clips, change their order, and add titles, etc.

- **Insert a Title:** Select a clip from the **Clip list**, and click the **Add Title** button. The Create Title Wizard appears. You can insert titles on top of the clip, or before or after the clip.
- **Divide Clips:** From the clip list, choose a clip to divide, and use the play control buttons to play the clip. Once the scene you wish to split appears, pause the clip, and click the **Divide** button.
- **Rearranging Clips:** From the clip list, click on the clips to rearrange, and drag them to the desired position.
- **Deleting Clips:** From the clip list, click on the clips to delete, and then drag them to the recycle bin.

### ► To Create Disc Menu

- 1 Click **Create Disc Menu**.
- 2 **Select a Theme:** A list of preinstalled themes are displayed. Select the theme you wish to use.
  - Themes are registered for each category. You can click on the **Categories** drop-down list to display a list of them to switch to.

### ► To Edit Disc Menu

- 1 Click the **Edit Disc Menu** tab.
- 2 The current menu is displayed in the **Disc Menu Structure** area. Click on a disc menu listed. A preview of that disc menu appears.
  - **Configuring Text:** In the disc menu, click on the text that is surrounded by a dotted line. After entering text, click on an area outside the dotted line to finalize the change. Font, styles, etc. can be changed. Click the **Text** button, and configure the settings that appear.
  - **Changing Link Thumbnails:** The images that appear in the disc menu can be changed by clicking on them.
  - **Selecting Chapters to Display on the Menu:** The chapter menu displays links to each of the chapters in that

video. To display a selective amount of chapters in the video list, click the **Chapter** button, and then select chapters from the video list that appears.

- **Configure the introduction Movie:** Click the **Introduction Movie** button, and configure settings that appear.

### ▶ **Preview and Create Disc**

1 Click **Preview/Create Disc**.

2 Insert a disc into the drive.

3 Click the **Create** button.

- Once the writing has completed a notification message should appear. The time required to create a disc depends on the type of computer you are using or the recording format.
- Once the disc has been successfully created follow the **To copy** or **To complete** instructions listed below.
  - **To copy**, click on the **Copy** button to repeat disc creation.
  - **To complete** this operation, click the **Close** button and remove the ejected disc.

## ▶ InterVideo® WinDVD® BD for VAIO®

InterVideo® WinDVD® BD for VAIO® is an easy-to-use software BD player combining the features of a standard BD player with advanced functionality, such as time-stretching, zooming, panning, and thumbnail bookmarks only possible on a software BD player<sup>3</sup>.

The WinDVD BD for VAIO player supports playback of Blu-ray Disc technology<sup>2</sup>. Play your BD discs in WinDVD BD for VAIO and take advantage of the advanced playback features that it offers.



- ▶ **To play a Blu-ray movie disc that you created, use InterVideo® WinDVD® BD for VAIO® 2.**

**Note:** Windows® Media Center, Windows® Media Player, and InterVideo for VAIO currently do not support the use of the Blu-ray Disc™ format. You must use InterVideo WinDVD BD for VAIO.

- 1 Insert the recorded Blu-ray disc into the optical disc drive of your computer.

2 Start InterVideo WinDVD BD for VAIO from any of the following:

### **Windows® Taskbar**

- From the Windows Taskbar, click the **Start** button and point to **All Programs, InterVideo WinDVD**, and then click **InterVideo WinDVD BD for VAIO**.

### **Media Center**

- a From the Windows Taskbar, click the **Start** button, and then click **Windows Media Center** on the Start menu. Media Center opens.
  - b From the Media Center Start menu, select **VAIO**, and then **WinDVD BD**. Media Center will minimize to allow WinDVD BD for VAIO PC to run.
- 3 Once InterVideo WinDVD BD for VAIO starts, the recorded Blu-ray disc plays automatically.
- 4 Use the transport controls of WinDVD BD for VAIO PC to navigate through the various created titles of the recorded Blu-ray disc.

### **Additional Information**

For additional information about the features of WinDVD® BD for VAIO®, including step-by-instructions on their use, please refer to the help file<sup>5</sup>.

### **► To open the Help file**

Do one of the following:

- Click the Help icon located in the upper right corner of the screen.
- Press the F1 key on your keyboard.
- Right click anywhere on the WinDVD BD for VAIO screen and select Help from the popup menu.

## Frequently asked Questions

- Question** What are the Blu-ray Disc™ formats?
- Answer** **BD-ROM**—Read only format for HD movies, music, software, games, etc.
- BD-R**—Recordable format for video recording and PC data storage.
- BD-RE**—Recordable format for video recording and PC data storage.
- 
- Question** What kind of data can be stored on a Blu-ray disc.
- Answer** Any form of data available on a personal computer can be stored to a Blu-ray Disc, including text documents, images, video files, and audio files. Using the appropriate software or operating support tools, a Blu-ray Disc can offer the functionality of a large removable hard disk drive.
- 
- Question** Can I record video to a Blu-ray Disc using a personal computer?
- Answer** Yes. With a BD compatible computer and the appropriate software, such as Click to DVD BD (included in your factory-installed software package), you can edit standard and high definition video (for example from a camcorder) and then record it to Blu-ray Disc media.

- Question** How much data can I fit on Blu-ray Disc™ media?
- Answer** A single layer disc can hold 25 GB<sup>1</sup>.  
A dual layer disc can hold 50 GB<sup>1</sup>.  
Blu-ray Disc includes support for multi-layer discs, which should allow for storage up to 100 GB<sup>1</sup> - 200 GB<sup>1</sup> of data in the future.
- Question** How much video can I fit on a Blu-ray Disc?
- Answer** Up to 9 hours of high definition (HD) video on a 50 GB<sup>1</sup> disc.  
Up to 23 hours of standard definition (SD) video on a 50 GB<sup>1</sup> disc.
- Question** Will Blu-ray discs require a cartridge?
- Answer** No, the development of low cost hard-coating technologies has made the cartridges obsolete. Blu-ray will instead rely on a hard-coating for protection.
- Question** Will Blu-ray players be backwards compatible with DVD?
- Answer** Yes, several leading consumer electronics companies are marketing products that can read/write CDs, DVDs, and Blu-ray discs using a BD/DVD/CD compatible optical drive.

**Question**

What video codecs will Blu-ray support?

**Answer**

MPEG-2 - enhanced for HD, also used for playback of DVDs and HD recordings.

MPEG-4 AVC - part of the MPEG-4 standard also known as H.264 (High Profile and Main Profile)<sup>2</sup>.

SMPTE VC-1 - standard based on Microsoft<sup>®</sup> Windows<sup>®</sup> Media Video (WMV) technology<sup>2</sup>.

Please note that this simply means that Blu-ray players will have to support playback of these video codecs, it will be up to the movie studios to decide which video codec(s) they use for their releases.

**Question**

What audio codecs will Blu-ray support?

**Answer**

Linear PCM (PLPCM) - offers up to 8 channels of uncompressed audio.

Dolby® Digital (DD) - format used for DVDs, offers 5.1 channel surround sound.

Dolby Digital Plus (DD+) - extension of DD, offers increased bitrates and 7.1 channel surround sound.

Dolby TrueHD - extension of MLP Lossless, offers lossless encoding of up to 8 channels of audio.

DTS Digital Surround - format used for DVDs, offers 5.1 surround sound.

DTS-HD - extension of DTS, offers increased bitrates and up to 8 channels of audio.

Please note that this simply means that Blu-ray players will have to support playback of these audio codecs, it will be up to the movie studios to decide which audio codec(s) they use for their releases.

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## Footnotes

- 1** One GB equals approximately one billion bytes, a portion of which may be used for disc management functions
- 2** As with other optical media devices, circumstances may limit compatibility or prevent Blu-ray disc playback. VAIO computers may not support movie playback on packaged media recorded in AVC or VC1 formats at high bit rates. VAIO desktop systems require a compatible high-definition display for high definition playback. Playback of AAC protected media may require an HDCP compliant output and HDCP compliant display.
- 3** Requires HDTV with HDMI connector and equivalent display capability. Image quality may vary
- 4** Video recording to Blu-ray Disc media is done by MPEG2 format only.
- 5** Does not contain all documentation contained in the retail version. Such documentation is available online.
- 6** The analog input is not available on all models.



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