SONY

4-000-779-**15**(1)

Multi Codec HD-Video Encoder

Operating Instructions

BAE-VX1000

Software Version 4.0.0

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Chapter 1 Overview

1-1 Chapter Outline

The BAE-VX1000 Multi Codec HD-Video Encoder System (hereafter referred to as “encoder system”), is a software encoding system that you can use to create H.264/AVC or MPEG-2 primary and secondary video ES, menu background, and slideshow’s still image ES, which are suitable for the BD-ROM and DVD formats.
Also, the software decoder of generated primary and secondary videos is included.
The encoder system provides the following features.

BD-ROM

Compression method:	H.264/AVC and MPEG-2
	AVC: High Profile, Main Profile Level 3, 3.1, 3.2, 4, 4.1
	MPEG-2: MP@HL, MP@14HL, MP@ML
Frame rate:	23.976p, 24p, 25i, 25p*, 29.97i, 29.97p*, 50p, 59.94p
Aspect ratio:	16:9 or 4:3
Resolution:	HD: 1920 × 1080, 1440 × 1080 (59.94i, 50i, 24p, 23.976p)
	1280 × 720 (59.94p, 50p, 24p, 23.976p)
	SD: 720 × 480 (59.94i, 29.97p*, 24p*, 23.976p*)
	720 × 576 (50i, 25p*)
	* Secondary video only
Maximum bit rate:	40 Mbps

DVD

Compression method:	MPEG-2: MP@ML
Frame rate:	25i, 25p, 29.97i, 29.97p
Aspect ratio:	16:9 or 4:3
Resolution:	720 × 480 (59.94i)
	720 × 576 (50i)
	352 × 240 (29.97p)
	352 × 288 (25p)
	352 × 480 (59.94i)
	352 × 576 (50i)
	704 × 480 (59.94i)
	704 × 576 (50i)
Maximum bit rate:	9.8 Mbps

1-1-1 Features of BAE-VX1000

Distributed processing

Depending on the user requirements and size of system, the encoder system can support a simple system consisting of just one computer, or a distributed system deploying a large number of PCs to enable real time encoding. Such design makes it possible to build a scalable system.
Scene change detection of title for distributed encoding and pulldown pattern detection of telecine title are handled during title capture or on the Preprocess screen. Because a pre-process operation can be performed on another PC, it is possible to pre-process the next title in parallel without having to wait for this encoding process to finish. The AVC encoder system references the scene change detected by the pre-process operation, and then distributes files automatically for processing on multiple PCs used for encoding. For this reason, the overall encoding time can be shortened. AVC or MPEG-2 Video ES files generated by distributed processing are combined into one file during the Finalize process.

One-pass encoding

The one-pass encoding sequence allows the encoding process to complete within the shortest time. In general, the one-pass encoding sequence is inferior to the two-pass encoding sequence in terms of picture quality. The one-pass encoding sequence is effective when the title is short relative to the disk and encoding can be done using high bit rate, or when changes in the pictures are so small that sufficient picture quality can be expected even at low bit rate.
Depending on the picture content, you can use the 1 Pass VBR that can change the bit rate assignment in units of GOP, or the 1 Pass CBR where the same bit rate is used throughout the entire title.

Two-pass encoding

When judged by the bit rate assignment, the two-pass encoding sequence is a method that enables the encoding process to proceed in an ideal manner. Based on the result of the first pass of encoding, this function performs bit rate assignment according to the coding difficulty, and then performs the second pass of encoding. Therefore, while it takes at least twice the time of the length of a title, this method produces the best balance in bit rate assignment for

all pictures on the disk, so that high picture quality encoding can be possible.

Fast two-pass encoding

In normal two-pass encoding, during temporary encoding in the first pass, level of difficulty is measured and picture type is decided for all pictures. While this method enables best bit assignment for the level of difficulty of the title, encoding takes twice the amount of time.
Fast two-pass encoding can shorten the time required to complete encoding in the second pass, by performing a checking process using an original feature extraction algorithm.

Partial encoding

While the bit rate assignment algorithm in two-pass encoding gives sufficiently high picture quality, depending on the difficulty of the title, there may be segments that require modification after encoding. In this case, you can use the partial encoding function. After encoding, you can select just the segment where picture quality adjustment is necessary, change the picture quality parameters, or adjust the bit rate assignment (using Customize). After the customization, you can encode just the smallest range required for reencoding. Because reencoding of the entire title is not required, this enables you to get the best picture quality in an efficient way.

Title substitution

If you need to modify the source file after encoding is finished, you can use the modified source file and then encode again but only using the specified range.

Notes

- If the source file has been significantly modified, optimal picture quality may not be obtained.
- This feature is not compatible with fast two-pass encoding.

Automatic customization function

This function uses the distortion value (difference between the original picture quality and the new one) measured during the first pass of encoding as a basis, automatically detects parts of the picture that are difficult to encode, and then uses the several candidate bit rates set up in advance to perform multiple encoding. When two-pass encoding of the entire title is finished. You can review the multiple candidates and then select the most suitable one based on their picture quality and disk amount. With this function, you can use customization to shorten the reencoding time.

Review function

You can decode the encoding result's stream file at real time and monitor it.
Playback at variable speeds (from 0.1 to 1× speed) in the normal direction and reverse direction step playback are possible, or you can jump to a specified position.
Also, you can speedily jump to a scene by dragging the slide bar, thus allowing you to easily search for a scene you want to jump to.

Customization

After encoding, you can customize the video using the following parameters.

Common:	Weight control (Weight Adjust) Specifying picture type (Picture Type) Setting scene change detection (Scene Change) Setting the low pass filter (Low Pass Filter) Setting the noise removal filter (De-Noise Filter) Setting the banding removal filter (De-Band Filter) Specifying the progressive mode (Progressive)
H.264/AVC:	Changing the DCT size selection method (DCT Size) Changing the scaling list (Scaling List) Changing the deblocking filter (Deblocking Filter) Changing the gradation improvement (Gradation Improvement) Changing the macro block rate control (Macro Block Rate Control) Changing the refreshing suppress (Refreshing Suppress) Changing the trailing suppress (Trailing Suppress)
MPEG-2:	Changing the QMatrix (QMatrix)

For details, refer to "6-3 Customization Review," page 63.

Inverse telecine function

When encoding a title that has been processed by 2-3 pulldown (telecine) conversion, you can improve the encoding efficiency by using the inverse 2-3 pulldown conversion to return the frame sequence back to the 24 frames/second format. The pulldown pattern can be detected automatically during the pre-process operation performed before the encoding process. Alternatively, if a pulldown pattern already exists, its pattern information can be imported. The pulldown pattern detected automatically can be edited after the detection. By separating 2-3 pulldown title and normal video title into separate video blocks, you can encode titles containing a mix of pulldown and interlaced pictures. After this encoding, if you want to change the pulldown pattern, you need to start over again from the pre-process operation.

Note

The following three formats are supported.

- 1920 × 1080/59.94i
- 1440 × 1080/59.94i
- 720 × 480/59.94i

Automatic scene change detection

The AVC encoder system can automatically detect scene change in a title. It performs the most suitable encoding process by assigning picture type according to the scene change points. With this function, you can obtain high picture quality at a scene change.

Processing time calculation

When you are creating a project, you can use parameters such as picture type, average bit rate, and capacity to calculate the approximate time required for encoding.

Batch processing function

You can register multiple projects, and encode them continuously.

Seamless multi-angle support

The encoder system supports BD-ROM and DVD format multi-angle, allowing seamless multi-angle encoding.

Closed caption support

You can insert BD-ROM and DVD format closed caption in encoded video ES files.

Notes

- It is not possible to directly extract closed caption data already multiplexed on the 21st line of the input video data and then multiplex it.
- For the DVD format, closed caption can be inserted only in the 2 Pass VBR mode.

Video capture

When you use the recommended video card, you can capture video and audio from a professional VTR or Handycam. The scene change and telecine pattern detection that is necessary before encoding can be performed simultaneously during video capture.
By using Batch mode, you can capture multiple intervals of video and audio data consecutively.
By using Easy Encode mode, you can perform the capture and encoding processes in single operation.

Low pass filter

You can apply a low pass filter while encoding a source. You can select from three strength levels for the filter in each mode.

De-noise filter

You can apply a noise removal filter while encoding a source. You can select from three strength levels for the filter in each mode. Use this filter when encoding sources that contain video camera noise, for example.

De-band filter

You can apply a banding removal filter while encoding a source. You can select from two strength levels for the filter in each mode. Use this filter when encoding sources in which banding occurs.

Note

When the filter is applied while encoding at high bit rates, some textures in the source may be lost. We recommend using the filter with low bit rates (10 Mbps or below for HD encoding with AVC codec).

Hint

For the best encoding results, we recommend applying this filter only to the sections where banding occurs.

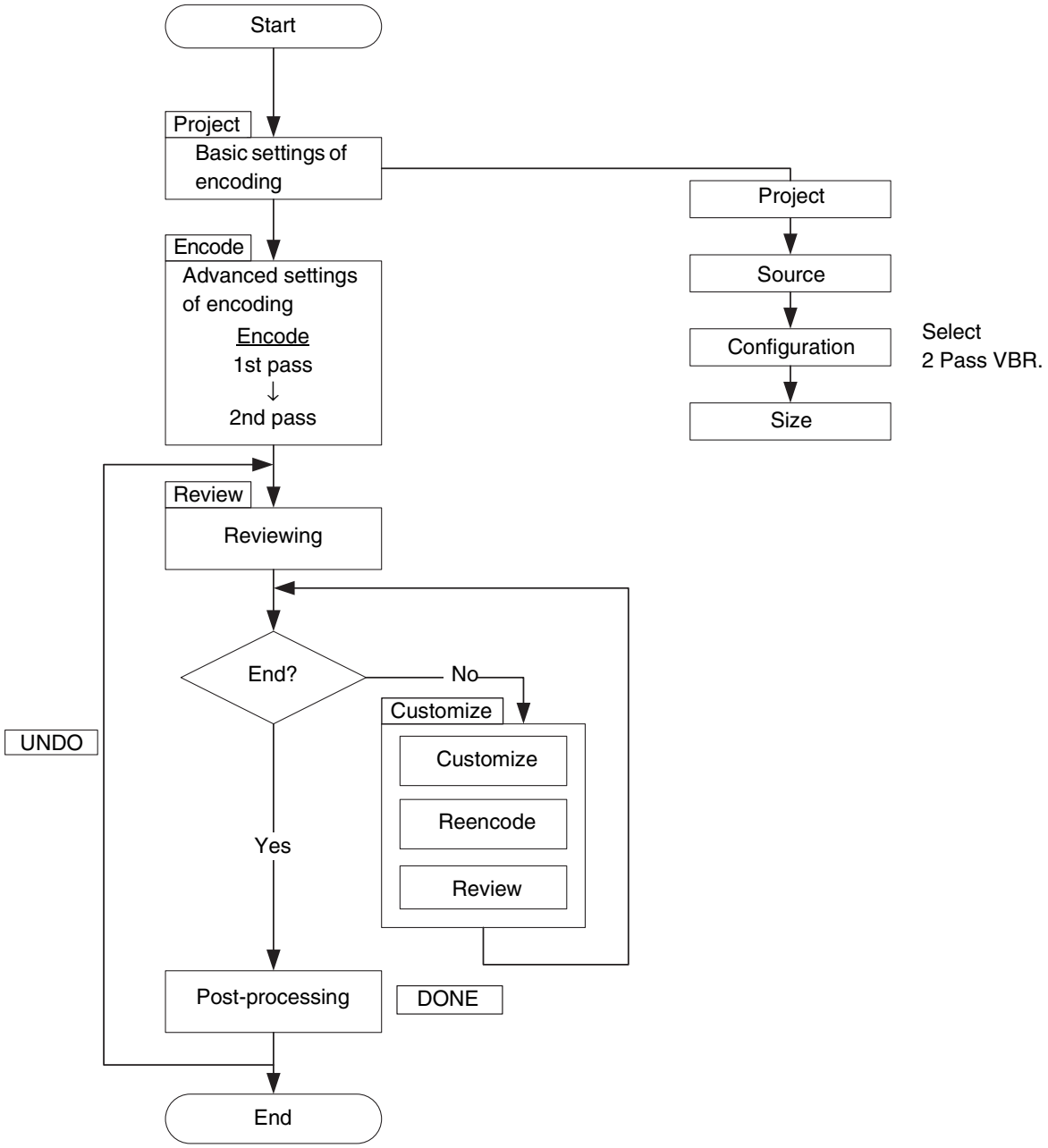
1-1-2 Differences Between Two-Pass Encoding and One-Pass Encoding

The encode software features two sequences: a high-quality two-pass encoding sequence and a fast one-pass encoding sequence. The basic flow of each sequence is described below.

Two-pass encoding sequence

Based on the result of the one-pass encoding sequence, the two-pass encoding sequence measures the coding difficulty, calculates the bit rate assignment according to the coding difficulty, and then runs encoding. Because bit rate assignment determined according to the scene can be spread across the entire title, this improves the picture quality.

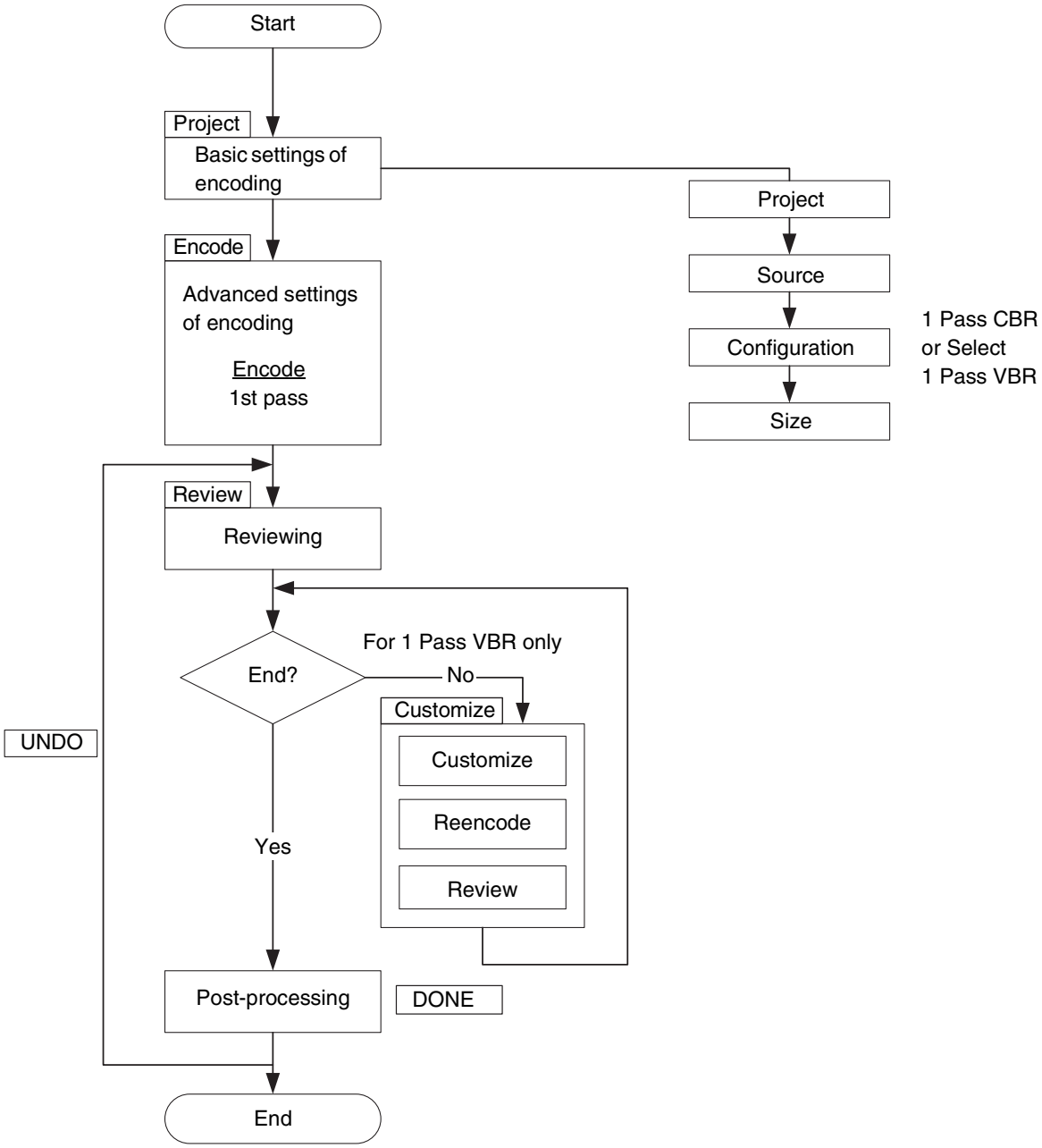
Two-pass encoding sequence



One-pass encoding sequence

Because the one-pass encoding sequence requires only one encoding process, it is faster than the two-pass encoding sequence. In general, the one-pass encoding sequence is inferior to the two-pass encoding sequence in terms of picture quality. The one-pass encoding sequence is effective when the title is short relative to the disk capacity, and encoding can be done using a high bit rate, or when changes in the pictures are so small that sufficient picture quality can be expected even if the bit rate is low. You can select to use 1 Pass CBR to encode using constant bit rate, or 1 Pass VBR to encode at a bit rate that varies according to the picture.

One-pass encoding sequence



1-1-3 Supported Data Format

Input formats

Video: AVI file and QuickTime file formats

HD

- 1920 × 1080/59.94i, 50i, 24p, 23.976p
- 1440 × 1080/59.94i, 50i, 24p, 23.976p
- 1280 × 720/59.94p, 50p, 24p, 23.976p

SD

- 720 × 480/59.94i, 29.97p*, 24p*, 23.976p*
- 720 × 486/59.94i, 29.97p*, 24p*, 23.976p*
- 720 × 576/50i, 25p*

*Secondary video only

Notes

- To use 720 × 486 AVI files, you need to set up the cropping offset in Vinf Creator.
- If images cropped to the 720 × 480 size are sent via SDI and then displayed on a master monitor for review, the display position may become different.

Still image: TIF, JPEG, PNG, BMP, and GIF formats

- 1920 × 1080
- 1440 × 1080
- 1280 × 720
- 720 × 480
- 720 × 576

Capture format

YUV 4:2:2 10bit or 8bit AVI file

SDI

HD: 1920 × 1080 (59.94i, 50i, 24p, 23.976p)
1280 × 720 (59.94p, 50p)

SD: 720 × 486 (59.94i)
720 × 576 (50i)

HDMI

HD: 1920 × 1080 (59.94i)

SD: 720 × 486 (59.94i)

Conditions of title

Maximum size

The maximum size of an AVI file input into the AVC encoder system is 2 TB.*

* An AVI file using title of HD/60i/4:2:2 format takes up about 550 GB of capacity for each hour of the title length. Therefore, a 2-TB AVI file takes about 3.5 hours.

Output data

H.264/AVC or MPEG-2 Byte Stream Format File

ES file of H.264/AVC or MPEG-2

Slideshow timing information file (SPI file)

This file contains timing information specified for time-based slideshow. It is used in multiplexing.

Linear-PCM audio file

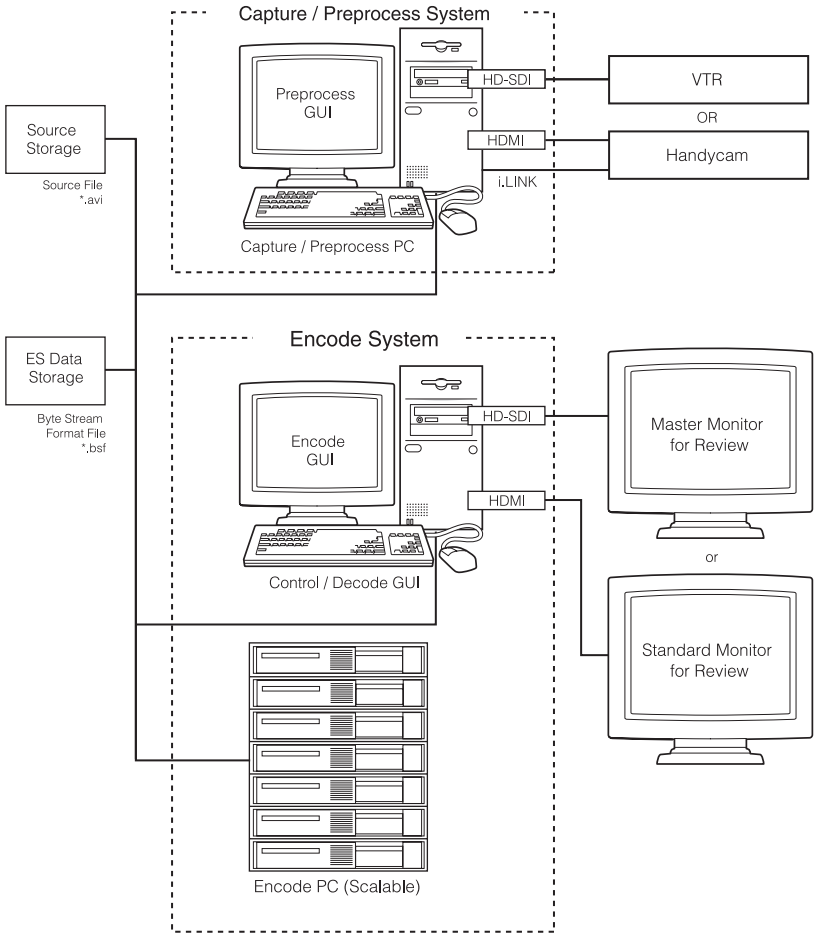
It is saved as an AVI file during video capture.

Note

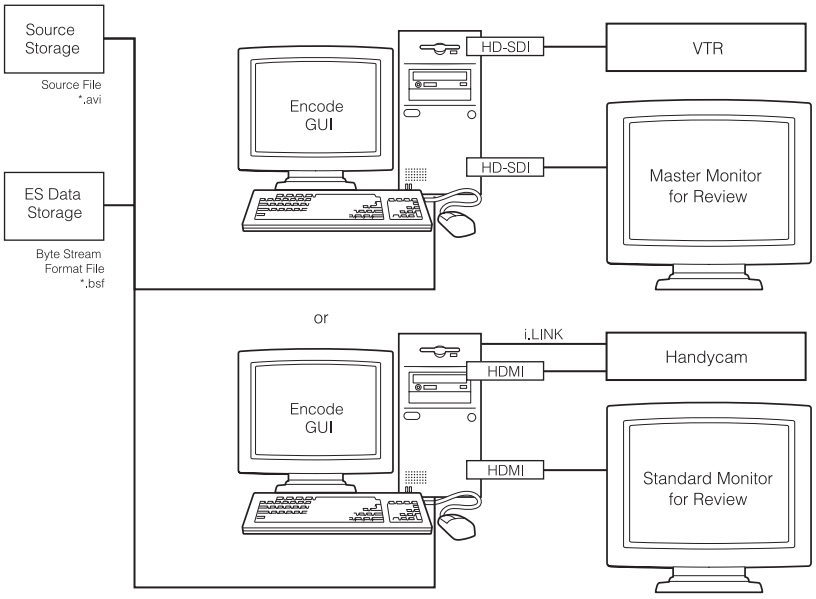
When the BAE-VX1000 software is installed, data is added to the registry related to QuickTime. As a result, this software may conflict with other applications that use QuickTime.

1-2 Overview of BAE-VX1000 System Configuration

Distributed System



Standalone System



1-3 Encoding Work Flowchart

This system consists of the following seven subsystems.

- Capture video (Capture)
  Capture video from a connected VTR, and create AVI files.
  While capturing video, you can perform the preprocess operation at the same time.
- Source management (Source Manager)
  Register a source file (AVI or QuickTime file) for encoding.
  Source files for encoding must all be registered in source management.
- Source project management (Project Manager)
  Perform encoding settings of registered source file.
  Create projects using the source files.
- Job project management (Job Editor)
  Register source file for each title to create, and perform encoding settings.
- Preprocess
  Detect scene change (available only in the case of distributed processing).
  Detect pulldown pattern (mandatory in the case of inverse telecine).
- Encoder
  Encode source file.
  Review and customization of the encoding result is possible.
- Finalize
  Integrate data to create a stream file.

The entire flow of this system is shown below.
For details on the operation procedure, refer to Chapter 2 and subsequent chapters.

Note

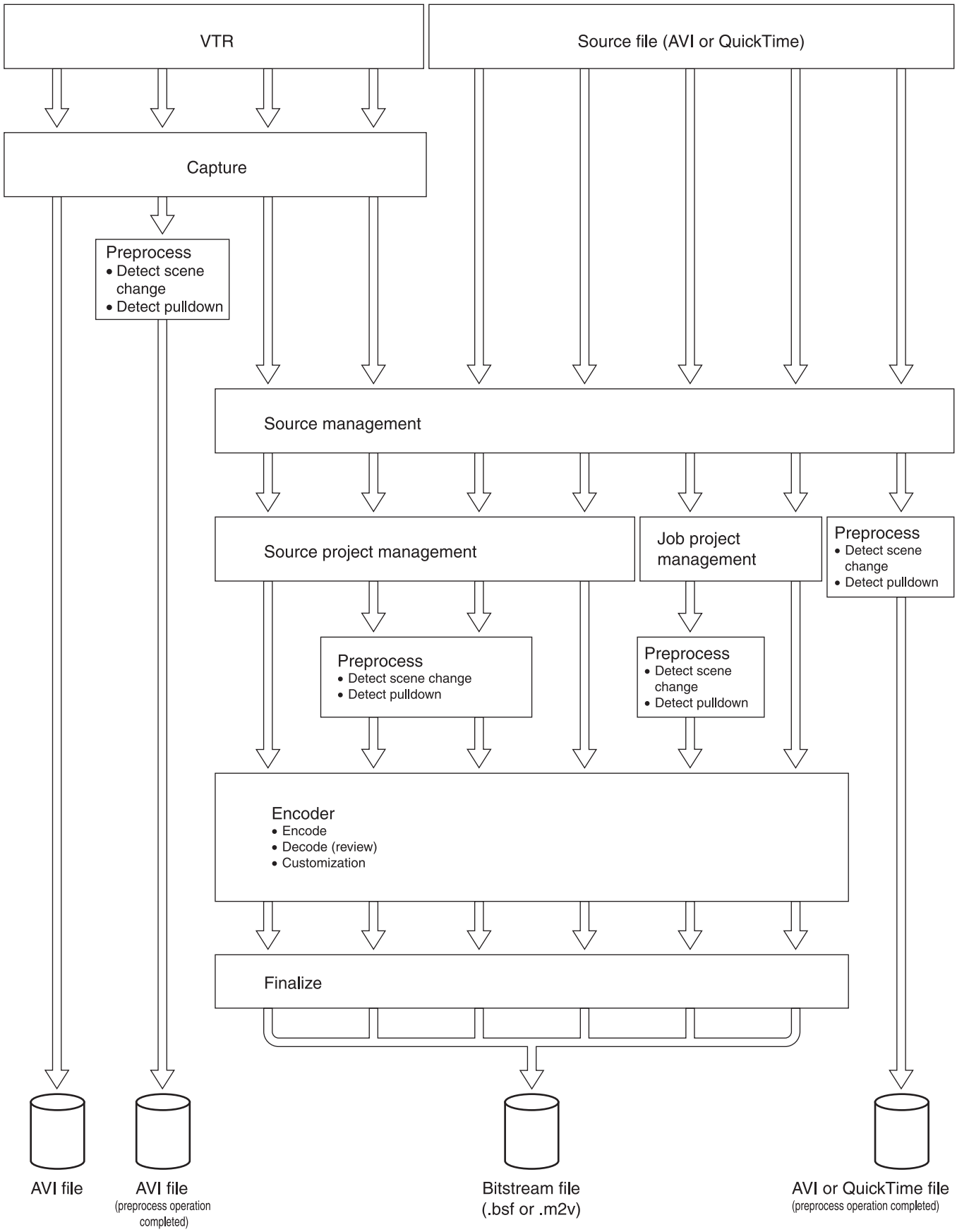
If Inverse 2-3 pulldown is selected in encoding of telecine titles, pulldown detection is required. If the pulldown process is not finished, the operation cannot proceed to the encoding process.
Scene change detection can be skipped; in this case, however, distributed encoding will not be performed.

Hint

The AVI files you create can be converted to WAV files. To convert to WAV files, execute the AVI to WAV Converter command from the Tool menu of Launcher.

Note

Due to limitations for WAV files, you cannot create files that are 2 GB or larger with AVI to WAV Converter.


VTR
Source file (AVI or QuickTime)
Capture
Preprocess
• Detect scene change
• Detect pulldown
Source management
Source project management
Job project management
Preprocess
• Detect scene change
• Detect pulldown
Preprocess
• Detect scene change
• Detect pulldown
Preprocess
• Detect scene change
• Detect pulldown
Encoder
• Encode
• Decode (review)
• Customization
Finalize
AVI file
AVI file
(preprocess operation completed)
Bitstream file
(.bsf or .m2v)
AVI or QuickTime file
(preprocess operation completed)

Chapter 2 Launcher

2-1 Chapter Outline

This chapter describes how to start or quit Launcher, and set up the system environment. Launcher is used to provide the various functions of this system.

This chapter contains the following main contents.

- Starting and quitting Launcher
- Setting up the system environment
- Setting up the encoder PC

2-2 Starting and Quitting Launcher

2-2-1 Starting Launcher

Double-click the BAE-VX1000 icon on the Desktop. Alternatively, point to [All Programs] from the Start menu, select [BAE-VX1000], and then select [BAE-VX1000]. Launcher starts.

When starting this software for the first time after installation, the System Setup Wizard dialog box appears.

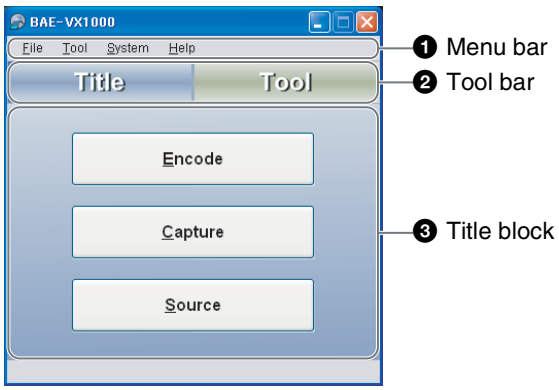
For details on the System Setup Wizard, refer to "2-5 System Setup Wizard Settings," page 21.

2-2-2 Quitting Launcher

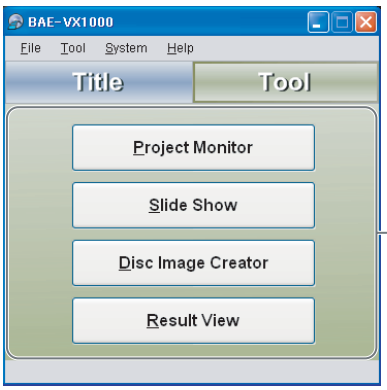
Click the button on the window, or select Exit from the File Menu.

2-2-3 Launcher Screen

Title block



Tool block



❶ Menu bar

Menu bar	Command	Description
File	Import	Import system environment information specified in the System Setup window from a file.
	Export	Export system environment information specified in the System Setup window to a file.
	Exit	Exit this software.
Tool	Project Monitor	Open the Project Monitor window to monitor encoding execution status.
	Slide Show	Start Slide Show Encoder to register or run jobs for still image encoding.
	Disc Image Creator	Open the Disc Image Creator window to multiplex imported Linear PCM audio data, and create BD-ROM disc images.
	Result View	Open the Result View window.
	AVI to WAV Converter	Convert AVI files to WAV format.
	System Setup Wizard	Open the System Setup Wizard. *For details, refer to "2-5 System Setup Wizard Settings," page 21.*
System	Encoder PC Information	Display the Encoder PC Information window. *For details, refer to "2-4 Setting Up the Encoder PC," page 19.*
	System Setup	Display the System Setup window. *For details, refer to "2-3 Setting Up the System Environment," page 16.*
Help	Version	Display information on the software such as the current version and copyright information.
	Error Lookup	Enter an error code to display the content of an error.

❷ Tool bar

Title

Display the Encode, Capture, and Source buttons.

Tool

Display the Project Monitor, Slide Show, Disc Image Creator, and Result View buttons.

❸ Title block

Encode button

Start Project Manager to create projects and register/run encoding.

Capture button

Open the Capture Control window to perform capture from VTR.

Source button

Start Source Manager to register source files.

❹ Tool block

Project Monitor button

Start Project Monitor to monitor encoding execution status.

For details on Project Monitor, refer to "6-2-6 Monitoring Encoding (Project Monitor Screen)," page 62.

Slide Show button

Start Slide Show Encoder to register or run jobs for still image encoding.

Disc Image Creator button

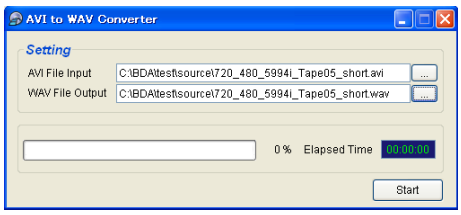
Open the Disc Image Creator window to multiplex imported Linear PCM audio data, and create BD-ROM disc images.

Result View button

Open the Result View window to display and compare the source image and encoded image on the same screen.

2-2-4 AVI to WAV Converter

When reusing audio data imported at the same time as video capture, you can convert the data to WAV format files.



2-3 Setting Up the System Environment

To set up the system environment, click the System Setup button in Launcher.

2-3-1 Initializing the Settings File

When using this software for the first time after installation, be sure to initialize the settings file.

1 Click the System Setup button in the Launcher screen.

The System Setup window appears.

2 Click the Project tab.

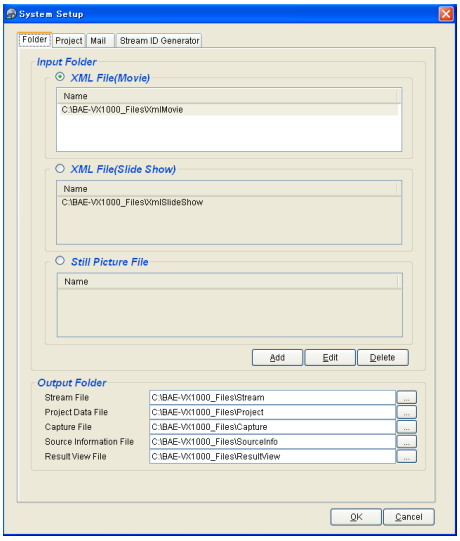
3 Click the Initialize button.

A dialog box to browse folders appears.

4 Select a folder to store the settings file, and click the OK button.

The settings file is created in the folder specified.

2-3-2 System Setup Window (Folder Tab)



Input Folder block

Specify a pathname for storing input file. Select the radio box of the scene to set up, and then click the Add button to select a folder.

XML File (Movie)
Specify a pathname for storing XML files for video encoding.

XML File (Slide Show)
Specify a pathname for storing XML files for still image encoding.

Still image file
Specify a pathname for storing still images.

Add button
Add a path.

Edit button
Edit a pathname that has been set up.

Delete button
Delete a pathname that has been set up.

Output Folder block

Stream file
Specify the pathname of a destination for storing stream data. Enter a pathname, or click the Browse button to select a destination.

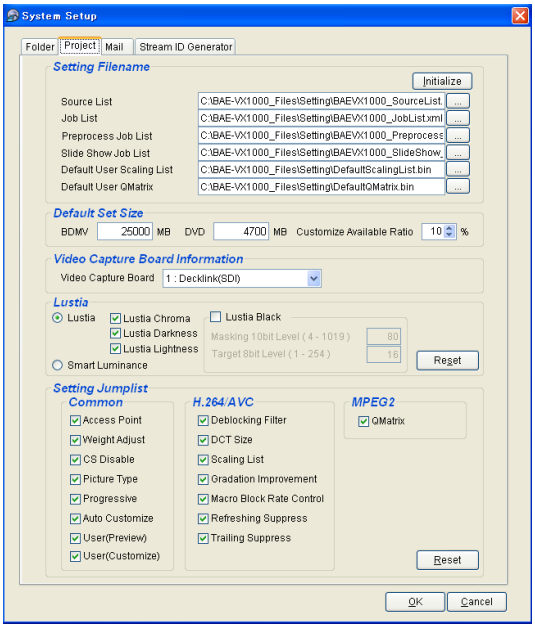
Project Data File
Specify the pathname of a destination for storing project data file. Enter a pathname, or click the Browse button to select a destination.

Capture File
Specify the pathname of a destination for storing captured file. Enter a pathname, or click the Browse button to select a destination.

Source Information File
Specify the pathname of a destination for storing source information file. Enter a pathname, or click the Browse button to select a destination.

Result View File
Specify the pathname of a destination for storing AVI files that will be displayed for comparison in Result View. Enter a pathname, or click the Browse button to select a destination.

2-3-3 System Setup Window (Project Tab)



Setting Filename block

Source List
Specify the default source list file name. Enter a file name, or click the Browse button to select a file.

Job List
Specify the default job list file name. Enter a file name, or click the Browse button to select a file.

Preprocess Job List
Specify the job list file name of the default preprocess. Enter a file name, or click the Browse button to select a file.

Slide Show Job List
Specify the job list file name of the default slideshow. Enter a file name, or click the Browse button to select a file.

Default User Scaling List
Specify the default user's specified scaling list file name. Enter a file name, or click the Browse button to select a file.

Default User QMatrix
Specify the default user's specified QMatrix file name. Enter a file name, or click the Browse button to select a file.

Initialize button
Return the settings of the Setting Filename block to their defaults.

Default Set Size block

BDMV / DVD
Specify the default size of BDMV or DVD.

Customize Available Ratio
Specify the % of the size that can be used during customization.

Video Board Information block

Video Capture Board
Select a video output board to use.

Lustia block

Lustia Chroma
Select this to disable restriction of the passband for the video's chroma data.

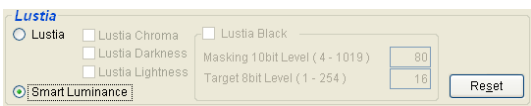
Lustia Darkness
Select this to disable restriction of the passband for the video's luminance data.

Lustia Lightness
Select this to disable restriction of the passband for the video's luminance data.

Lustia Black
Select the Lustia Darkness check box to enable Lustia Black configuration.
Select the Lustia Black check box to enable configuration of black level conversion for the video's luminance data.

Masking 10bit Level
Configure the threshold of the luminance data for black level conversion.

Target 8bit Level
Configure the black level.



Smart Luminance
Select this to reduce the effects of banding in videos.

Reset button
Return the settings of the Lustia block to their defaults.

Notes

- Use the Lustia Black and Smart Luminance settings at your discretion.
- If a Blackmagic Design Intensity card was used, you cannot confirm the output results of video data created in Lustia mode.

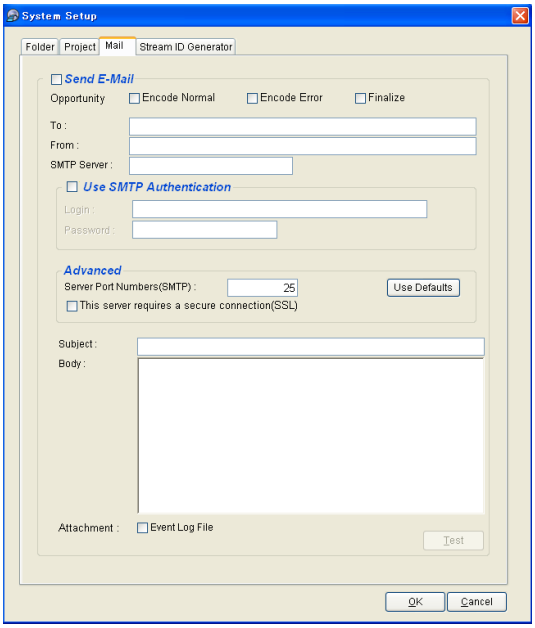
Setting Jumplist block
Specify customization items to display on the jump list.

Reset button
Return the settings of the Setting Jumplist block to their defaults.

Hint

To back up a project, save the contents of the folders configured in the Folder tab and Project tab of the System Setup window.

2-3-4 System Setup Window (Mail Tab)



If you select this check box and then specify the parameters, an email message is sent when an error occurs or when encoding is finished normally.

Opportunity
Specify the opportunity for sending an email message.

Encode Error
Send an email message when an error occurs during encoding.

Encode Normal
Send an email message when encoding is finished normally.

Finalize
Send an email message when finalization is finished.

Use SMTP Authentication
If the STMP server you are using requires SMTP authentication, select this check box and configure account information.

Advanced block

Server Port Numbers (SMTP)
Configure this when not using the default port number to send email messages.

This server requires a secure connection (SSL)
Select this check box to transmit via the SMTP server and SSL.

Use Defaults button
Return setting information to defaults.

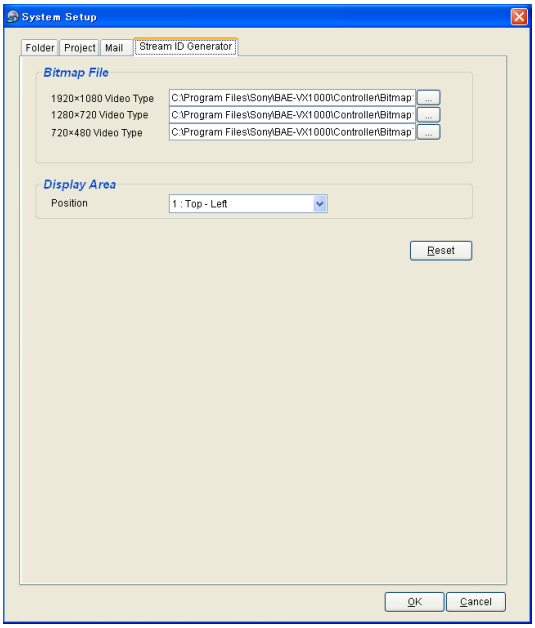
Attachment
Specify whether to attach the Event Log File created by the system as a file attachment.

Test button
If you click the Test button, the entered content is used in the email test transmission.

Note

Every time you click this button, an email message is sent.

2-3-5 System Setup Window (Stream ID Generator Tab)



Use the respective settings file for each Video Type image size.

Bitmap File block

1920 × 1080 Video Type

Specify the default bitmap file name. Enter a file name, or click the Browse button to select a file.

1280 × 720 Video Type

Specify the default bitmap file name. Enter a file name, or click the Browse button to select a file.

720 × 480 Video Type

Specify the default bitmap file name. Enter a file name, or click the Browse button to select a file.

Notes

- Be sure to specify bitmap files that are RGB 24-bit format.
- There are no limits on file size.
- Image sizes are not converted according to resolution during loading.

Display Area block

Position

Specify the display position.

2-4 Setting Up the Encoder PC

To specify a PC for the encoding process, click the Encoder PC Information button in Launcher.

2-4-1 Registering Encoder PC

1. Click the Add button on the Encoder PC Information window.

   The Setting Encoder PC window appears.

2. Enter the IP address or host name of the computer you want to register.

3. Enter the user name and password for logging in to the computer, and then click the Connect button.

   Information on the CPU and memory of the computer to register is obtained.

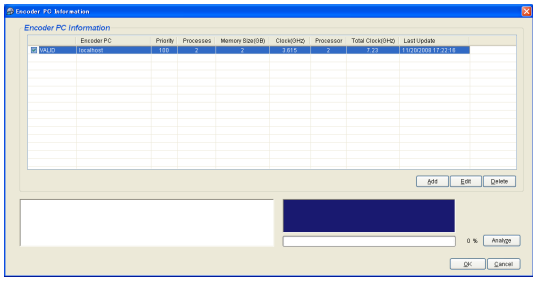
4. Click the OK button to close the window.

Hint

If these steps have been used to register a computer, Priority and Processes are automatically set up.

2-4-2 Encoder PC Information Window

Register a PC to run the encoding process. If you register multiple PCs, distributed processing is possible.



If you select this check box, PC registration is enabled and the encoding process is performed.

Add button

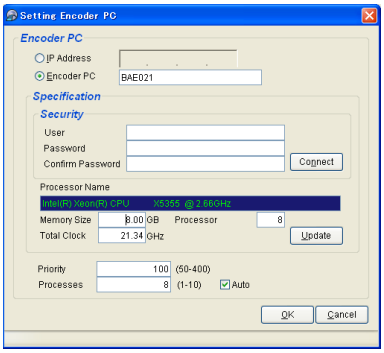
Display the Setting Encoder PC window.
Click this button if you want to add a host.

Edit button
Display the Setting Encoder PC window.
Click this button if you want to edit the currently selected host.

Delete button
Delete the currently selected host.

Analyze button
Display the Setting Analysis of Encoding dialog box, and perform encoding as a test to find out the processing performance of the encoder PC. The priority of the encoders is determined from the execution result.

Setting Encoder PC dialog box



IP Address/Encoder PC
Select the IP Address or Encoder PC option button and then enter an IP address or host name accordingly.

User/Password/Confirm Password
Enter the user name, password, and confirmation password for logging in to the encoder PC.
To log in using domain user name, enter using the “domain name\user name” format. To perform encoding using the computer displaying the Setting Encoder PC dialog box, do not enter the user name and password.

Connect button
The entered user name and password are used to connect to the encoder PC. When connection succeeds, information on the encoder PC is obtained and then displayed.

Processor Name
Display the processor name of the encoder PC.

Memory Size
The memory size of the encoder PC appears.

Processor
Display the processor number of the encoder PC.

Total Clock
Display the clock speed of the encoder PC.

Update button
Update the setting information of the encoder PC with the displayed content.

Priority
Specify the priority of processes between this encoder PC and other encoder PCs.

Processes
Specify the process number to perform encoding. If Auto is selected, the process number is determined from the obtained PC information.

Setting Analysis of Encoding dialog box

Source Filename
Specify a source file to encode. Enter a file name directly, or click the Browse button to select a file.
You can specify a source file that is already registered in Source Manager.
If you want to raise the precision of the processing performance to obtain, we recommend that you select an HD source file.
DVD sources cannot be selected.

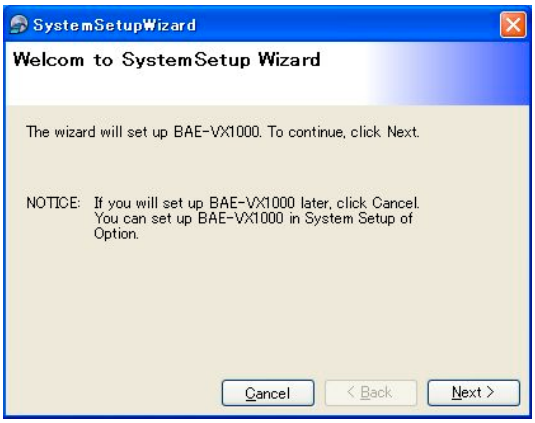
Temporary Pathname
Specify a working directory for encoding. Enter a directory name directly, or click the Browse button to select a directory. Specify a path that can be used by the encoder PC.

Duration
Specify the processing time of encoding. If you want to raise the precision of the processing performance to obtain, select a large value.

OK button
Perform the performance measurement.

2-5 System Setup Wizard Settings

When starting this software for the first time after installation, the System Setup Wizard dialog box appears.



Perform system setup as follows.

1 Click the Next button.

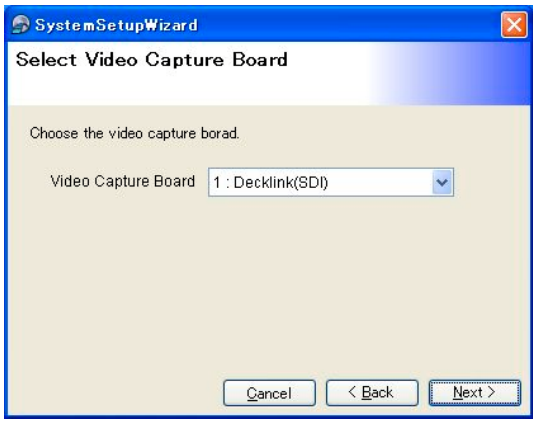
If you want to perform setup later or use the setup of a previous version, click the Cancel button.

The Select Root Folder dialog box appears.

2 Specify the workplace root folder for BAE-VX1000, and click the Next button.

To change the root folder, click the Browse button and specify a root folder.

The Select Video Capture Board dialog box appears.



3 Select the video capture board from the pull-down menu, and click the Next button.

Setup is complete and the Ready to Setup dialog box appears.

4 Click the Finish button.

The configured settings are reflected in System Setup.

Hint

If you canceled the wizard, you can configure settings by selecting System Setup from the System menu of the Launcher screen.

Chapter 3 Capture

3-1 Chapter Outline

This chapter describes a series of operations, from how to use the Launcher to start the Capture application, to how to perform capture.

This chapter contains the following main contents.

- Starting and exiting the Capture application
- Running Capture

3-2 Starting and Exiting Capture

3-2-1 Starting the Capture Application

1 Click the Capture button in Launcher.

A dialog box appears for you to specify a capture project file.

2 Specify a capture project file.

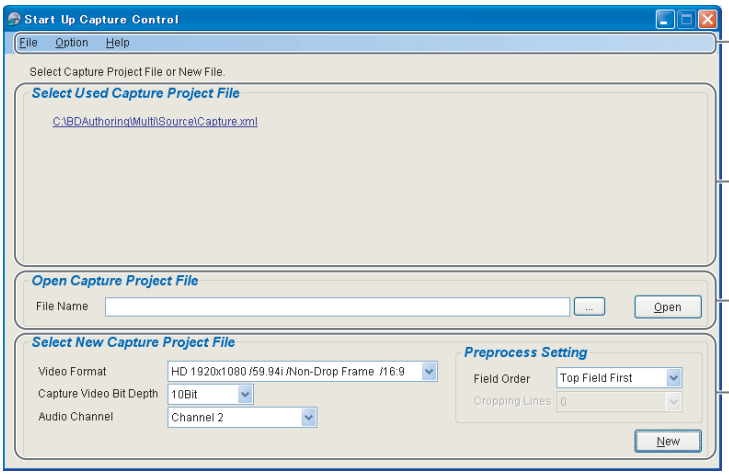
You can use the following methods to specify a capture setting file.

- Select it from files used before.
- Specify a file name, then open it.
- Create a new file.

For details, refer to "3-2-2 Specifying a Capture Project File," page 23.

The Capture application window appears.

3-2-2 Specifying a Capture Project File



❶ Menu bar

❷ Select Used Capture Project File block

❸ Open Capture Project File block

❹ Select New Capture Project File block

❶ Menu bar

Menu bar	Command	Description
File	Close	Close the dialog box.
Option	Capture Setup	Display the Capture Setup dialog box to set up capture. You can specify the default capture mode, VTR detection mode, preroll time, and offset frame number.
Help	Version	Display the version, copyright, and other information about this software.

Hint

You can configure the VTR detection mode using the VTR Type setting in the Capture Setup dialog box.
Auto Detection: Detect automatically
Sony SRW Series: Specify Sony SRW-series VTRs (SRW-5000, etc.)
Other Sony VTR: Specify other Sony VTRs
Other: Specify miscellaneous VTRs (D5, etc.)

❷ Select Used Capture Project File block

Select a file for current use, from capture project files used before.

❸ Open Capture Project File block

Specify the name of a capture project file and open the file.

File Name

Enter the pathname of a capture project file to use, or click the Browse button to select a capture project file.

Open button

Load the specified capture project file, and open the Capture Control window.

❹ Select New Capture Project File block

Create a new capture project file using the displayed settings.

Video Format

Select the format of a title to load.

Capture Video Bit Depth

Select number of bits used by YUV.

Audio Channel

Select audio channel.

Note

Audio data is fixed at 16 bits.

Preprocess Setting block

Configure settings for preprocessing during capture.

Field Order

Select the field order of the source file.

Cropping Lines

If the video format is 720 × 486, specify the number of lines to crop.

Hint

- If the number of lines is set to 1, one line is cropped from the top of the screen, and five lines are cropped from the bottom.
- When capturing sources for DVD, select an odd number of lines.

New button

Create a capture project file and open the Capture Control window.

3-2-3 Exiting the Capture Application

Click the button on the window, or select Exit from the File menu.

3-3 Running Capture

There are two ways to run Capture.

- Specify a range and perform batch capture (batch process). Specify capture's start point and end point, then perform capture. You can perform multiple captures in a batch process.
- Capture while replaying VTR (real time process). While replaying VTR, perform capture.

You can also perform the capture and encode processes consecutively (Easy Encode).

3-3-1 Performing Capture in a Batch Process

1 On the Capture Control window, select Batch in the Mode block.

2 Specify capture's start timecode and end timecode, as well as a file as the output destination, then click the Add button.

You cannot specify the beginning of a tape as the start timecode. A preroll interval is necessary.
The capture settings are added to the Project List.

3 If there are multiple scenes to capture, repeat step 2.

4 Click the Start button.

The capture process starts.

Notes

- When a Handycam is connected, rewind the tape manually. As there may be discrepancies in the start timecode for capture, be sure to factor in a margin of about 1 second.
- The capture source must be a continuous recording.

3-3-2 Performing Real Time Capture

1 Select Now in the Mode block of the Capture Control window.

2 Use the VTR Control block to operate the VTR and jump to the scene to start capture.

3 Enter a file name to output capture result.

4 Click the Start button and replay the VTR.

The capture process starts.

5 When the last scene to capture appears, click the Stop button.

Hint

You can specify the start timecode, and replay the VTR automatically.

3-3-3 Performing Capture and Encode Consecutively (Easy Encode)

1 On the Capture Control Window, select Easy Encode in the Mode block.

2 Specify capture's start timecode and end timecode, as well as a file as the output destination, then click the Add button.

You cannot register multiple sources for Easy Encode.
You cannot specify the beginning of the tape as the start timecode. A preroll interval is necessary.
When you click the Add button, the capture settings are added to the Project List.

3 Click the Start button.

The Project Editor window appears.

4 Set up the project using Project Editor.

For details on setting up using Project Editor, refer to *"5-5 Setting Up a Job Project," page 50*.

5 Click the OK button when you finish configuration.

The Encode Parameter screen appears.

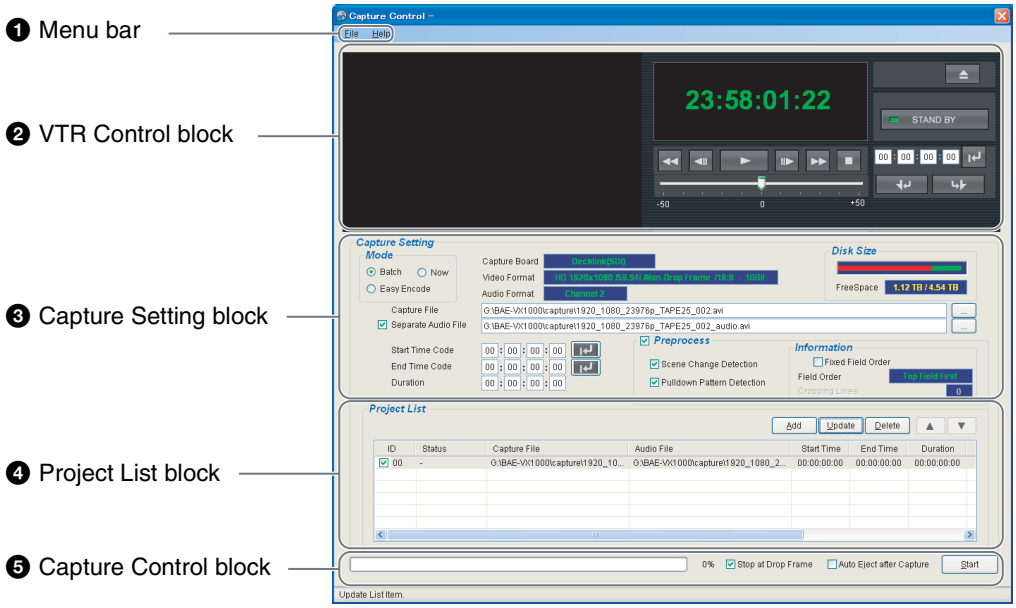
6 Configure the encoding parameters in the Encode Parameter screen.

For details on configuring encoding parameters, refer to *"6-2 Checking and Setting Up Encoding Parameters," page 53*.

7 Click the OK button when you finish configuration.

The capture process starts. When capture is finished, encoding will start automatically.

3-3-4 Capture Control Window



❶ Menu bar

Menu bar	Command	Description
File	Load Project File	Load a capture project file.
	Save Project File	Overwrite and save the capture project file.
	Save Project File As	Save capture project file under a different name.
	Save Project File and Exit	Save the capture project file and exit the Capture application.
	Close	Close the Capture Control window to return to the capture project file selection dialog box.
	Exit	Exit the Capture application.
Help	Version	Display the version, copyright, and other information about this software.

❷ VTR Control block

You can operate the VTR connected to this system, and monitor the captured scene.

VTR operation buttons

◀◀	Rewind the VTR.
◀II	Step a frame of the VTR in the reverse direction.
▶	Replay VTR. During replay, clicking pauses the operation.
II▶	Step a frame of the VTR in the normal direction.
▶▶	Fast forward the VTR.
■	Stop the VTR.

Slide bar

Change the replay speed of the VTR.

⏏ button

Eject the VTR.

STAND BY button

Switch the power of VTR to standby or ON.

↵ button

Jump to the timecode entered in the timecode field.

↓↵ button

Copy the current timecode to Start Time Code of the Capture Setting block.

↳↓ button

Copy the current timecode to End Time Code of the Capture Setting block.

❸ Capture Setting block

Mode
Select a method to process capture.
Batch: Specify multiple capture ranges and then capture all of them at the same time.
Now: Capture at real time while the VTR is replaying.
Easy Encode: Perform the capture and encode processes consecutively.

Capture Board
Display the capture board installed on the computer.

Video Format
Display the video format of the connected VTR.

Audio Format
Display the audio format of the connected VTR.

Disk Size
Display the storage capacity of the output destination for capture files
The red part of the graph indicates the used capacity, and the green part indicates the remaining capacity.
FreeSpace displays the “remaining capacity / total storage capacity.”

Capture File
Specify the name of a video file (.AVI) to create. Enter a pathname, or click the Browse button to select a file.

Separate Audio File
Select it if you want to output captured audio as audio only file. Enter a pathname, or click the Browse button to select a file.

Start Time Code
Specify the start point timecode of capture. Enter a timecode directly, or click the  button in the VTR Control block to copy the timecode being displayed.
If Mode is set to Now, select the check box only when specifying a start point timecode.

End Time Code
Specify the end point timecode of capture. Enter a timecode, or click the  button in the VTR Control block to copy the timecode being displayed.
This setting cannot be used if Mode is set to Now.

 button
Use the timecode specified by Start Time Code or End Time Code to jump to a scene on the VTR.

Duration
Specify the length of capture.
If Mode is set to Batch, this value changes according to the value of End Time Code.

Preprocess
Select it if you want to perform preprocess during capture.

Scene Change Detection
Select it if you want to perform scene change detection.

Pulldown Pattern Detection
Select it if you want to perform pulldown detection.

Hint
If you want to raise the detection precision, run preprocessing in Source Manager.

Fixed Field Order
Use if you want to perform source detection using a specified field order.

For details on Fixed Field Order, refer to “4-4-2 Setting Up the Preprocess Operation (Preprocess Tab),” page 36.

❹ Project List block
During batch processing, a list of projects for capture appears. Projects for which the check box in the ID column is selected will be captured.

Add button
Add a capture project using the settings in the Capture Setting block.

Update button
From the list, update the currently selected capture projects with contents in the Capture Setting block.

Delete button
From the list, delete the currently selected capture projects.

▲▼ button
Move up or down the list.

❺ Capture Control block

Stop at Drop Frame
Stop capture when there is drop frame.

Auto Eject after Capture
Eject the VTR automatically after capture is finished during batch processing.

VTR Auto Play
If the VTR is stopped when the Start button is pressed during real time processing, playback on the VTR will start automatically.

Start button
Start capture.

Chapter 4 Registering Sources

4-1 Chapter Outline

This chapter describes a series of operations, from how to use Launcher to start Source Manager, to how to customize detection result of Preprocess.

This chapter contains the following main contents.

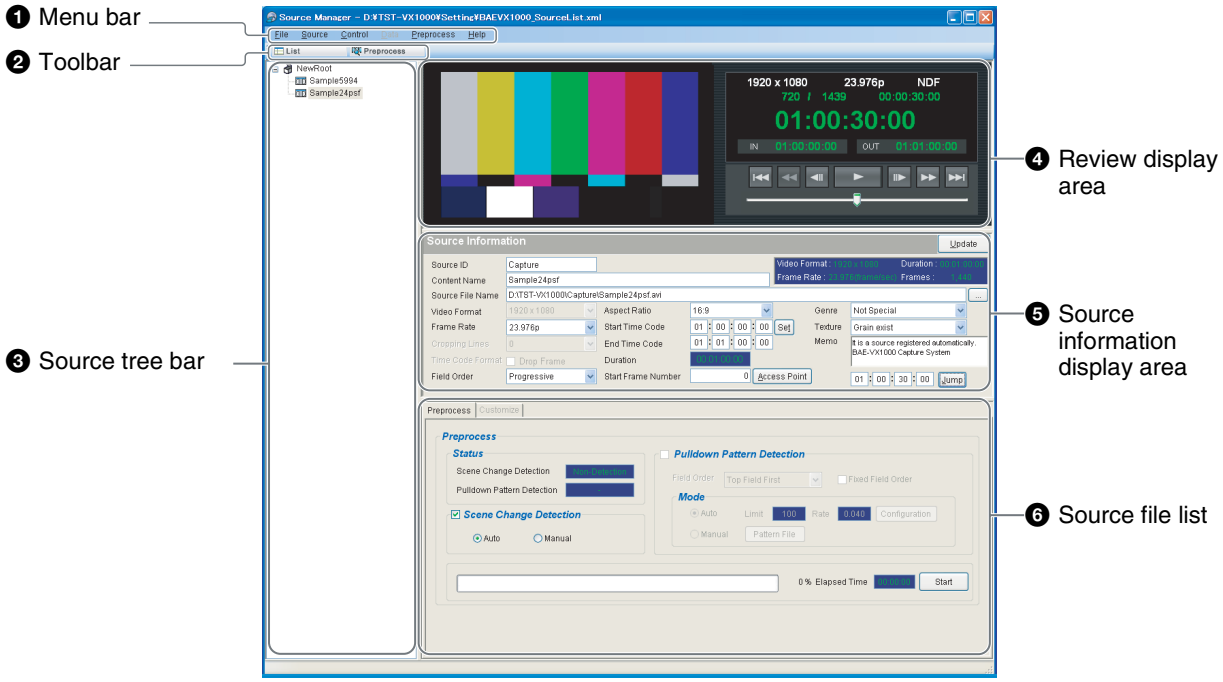
- Starting and exiting Source Manager
- Registering source file
- Running Preprocess
- Customizing detection result of Preprocess

4-2 Starting and Exiting Source Manager

4-2-1 Starting Source Manager

Click the Source Manager button of Launcher.
Source Manager starts.

4-2-2 Source Manager Screen



❶ Menu bar

Menu bar	Command	Description
File	Open	Open a source list file.
	Save	Overwrite and save the source list file being edited.
	Save As	Save the source list file being edited under a different name.
	Close	Exit Source Manager.
Source	Source List	**New:** Create a new source list. **Delete:** Delete the currently selected source list. **Modify:** Modify the name of the currently selected source list.
	Source File	**Add:** Create a new source file. **Delete:** Delete the currently selected source file.

Menu bar	Command	Description
Control	Play/Pause	Replay the currently selected source file or pause the operation.
	Fast Forward	Fast forward the currently selected source file.
	Rewind	Rewind the currently selected source file.
	Step Forward	Step a frame of the currently selected source file in the normal direction.
	Step Backward	Step a frame of the currently selected source file in the reverse direction.
	Jump to Start	Jump to the start point of the currently selected source file.
	Jump to End	Jump to the end of the currently selected source file.
	Renderer	Output review pictures to the monitor connected to the video output board of the control PC.

Menu bar	Command	Description
Data	Scene Change	**Import:** Import scene change's detection result file. **Export:** Export scene change's detection result to a file.
	Inverse 2-3 Pulldown	**Import:** Import pulldown pattern's detection result from a file. **Export:** Export pulldown pattern's detection result to a file.
Preprocess	Entry	Register a project to preprocess.
Help	Version	Display the version, copyright, and other information about this software.

❷ Toolbar

List

Display the source list display screen.

Preprocess

Display the Preprocess screen.

❸ Source tree view

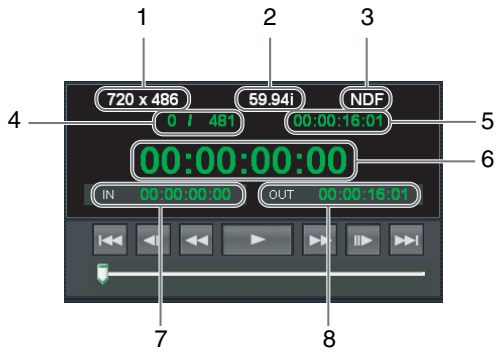
Display the source list and source file registered in the system, in a tree format.

❹ Review display area

Perform review display of the selected source file.

Source information display

Display the source file information. If you have clicked the Update button and completed registration of a source file, contents set in Source Information appear. During the temporary registration, information obtained from the source file appears.



1 Video format
2 Frame rate
3 Timecode format (DF, NDF)
4 Current frame/total frame
5 Remaining time
6 Current timecode
7 Start point timecode
8 End point timecode

Review control

Operate the source file during review display.

	Jump to the start point of the source file.
	Step a frame in the reverse direction.
	Rewind the source file.
	Replay or stop.
	Fast forward the source file.
	Step a frame in the normal direction.
	Jump to the end of the source file.

Track bar

Move timecode to the clicked position. Rotating the mouse wheel step the frames.

❺ Source information display area

Display the source file information selected in the source tree view.

For details, refer to "4-3-2 Setting Up Source File Information (Source Information Block)," page 32.

❻ Source file list

In source tree view, display all source files in the currently selected source list.

Clicking Preprocess on the toolbar displays the Preprocess screen.

4-2-3 Exiting Source Manager

Click the button on the window, or select Close from the File menu.

4-3 Registering Source File

4-3-1 Registering a New Source File

1 Use Explorer or a similar tool to select a source file you want to register, then drag and drop it to the desired source list in tree view.

Or, right click the source list and select Add Source File.
The icon of the source file is added to the bottom of the source list.

Hint

To register multiple source files or source lists
When you drag and drop a folder containing source files, all sources files in the folder as well as any lower folders are registered.

2 In the Source Information block, set up the source file information.

In the Source Information block, information loaded from the dragged and dropped source file appears automatically. Check the displayed content and make changes if necessary.

For details on the Source Information block, refer to "4-3-2 Setting Up Source File Information (Source Information Block)," page 32.

3 Click the Update button.

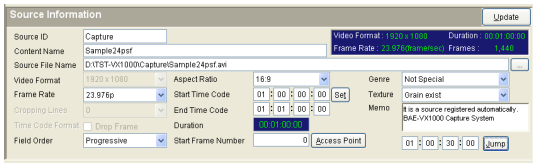
Source file information is registered in the source list

Note

Until you click the Update button, source file registration is not completed. Even when you are not editing the source file information, always be sure to click the Update button.

4-3-2 Setting Up Source File Information (Source Information Block)

When you drag and drag a source file, information obtained from the source file appears automatically. If the content has been edited, click the Update button.



Update button
Use content specified by the Source Information block to update the source list.

Source ID
Enter an ID number to identify the source file.

Content Name
Enter the content name of the source file.

Source information display
Display information obtained from the source file (video format, frame rate, length, frame number).

Source File Name
Enter the file name of the source file.

Video Format
Specify the resolution of the video.

Frame Rate
Specify the frame rate.

Cropping Lines
If the video format is 720 × 486, specify the number of lines to crop.

Time Code Format
Specify the timecode format.

Note

Drop Frame can be set only when frame rate is 59.94i or 59.94p.

Field Order
To set up Interlace, follow the specified AVI file and select Top Field First or Bottom Field First.
To set up Progressive, select Progressive.

Aspect Ratio
Specify the aspect ratio.

Start Time Code
Enter the start point timecode of the source file.

End Time Code
Enter the end point timecode of the source file.

Note

The last frame of the video to be encoded is the frame immediately previous the frame specified by the End Time Code setting.

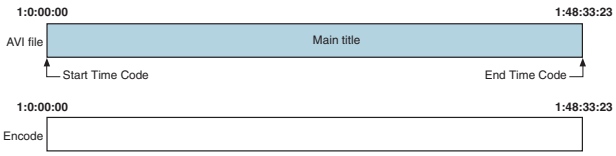
Set button
After entering Start Time Code, set the final timecode calculated from the length of the source file, in End Time Code.

Duration
Display the length of the source file.

Start Frame Number
To encode from the start point of an AVI file, enter 0 (see example 1).
If the start point of an AVI file contains unwanted video, enter the frame number of the unwanted portion (from start point to Start Time Code). By doing so, you can skip the unwanted portion when encoding the file (see example 2).

Example 1)
The AVI stream contains only main title and you want to encode from the start to the end.

Main title is 1:00:00:00 to 1:48:33:23
Frame rate is 24p

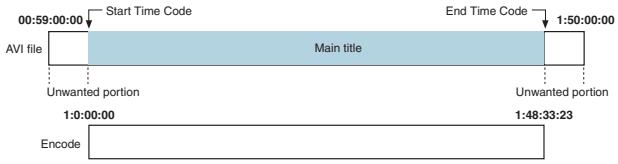


Setting value

Parameter	Value
Start Time Code	1:00:00:00
End Time Code	1:48:34:00
Start Frame Number	0

Example 2)
The AVI stream contains main title as well as other items, but you want to encode only the main title.

Main title is 1:00:00:00 to 1:48:33:23
Frame rate is 24p



Setting value

Parameter	Value
Start Time Code	1:00:00:00
End Time Code	1:48:34:00
Start Frame Number	1,440

Start Frame Number = 1440 = (24-60)

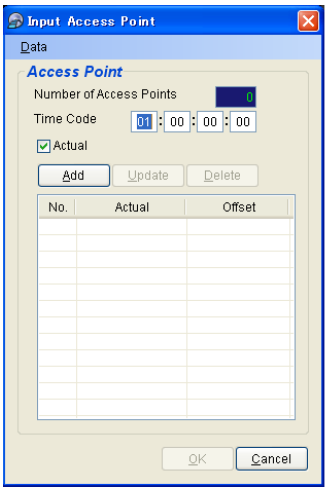
Access Point button
Display the Input Access Point window.

Genre
Specify the genre of the source. The setting specified here is also applied to the Recommended Parameter tab of the encoding parameters.
- Film: Film sources
- CG Anime: CG animation sources
- Sports: Sports sources
- MusicLive: Live music sources
- Landscape (River, Waterfall): Landscape sources
- Static Picture: Still pictures or sources with minimal movement
- Not Special: Miscellaneous sources

Jump button
Enter a timecode in the timecode editing area, and click the Jump button to jump to that point.

Texture
Specify the picture quality of the source. The setting specified here is also applied to the Recommended Parameter tab of the encoding parameters.
- Film Grain / Camera Noise non-exist: Source with no film grain or camera noise
- Film Grain / Camera Noise exist: Source with film grain or camera noise

Input Access Point window



Menu bar	Command	Description
Data	Import	**Time Code:** Import the timecode in plain text format. **Frame:** Import the frame number in plain text format. **XML:** Import the access point in XML format.
	Export	**Time Code:** Export the timecode in plain text format. **Frame:** Export the frame number in plain text format.

Number of Access Points
Display the total number of access points.

Time Code
Enter the timecode of the access point to add.
Enter the actual timecode if Actual is selected, or the timecode offset if Actual is not selected.

Actual
Specify whether to enter the timecode of the access point to add as actual timecode or timecode offset.
To enter actual timecode, select the check box. To enter timecode offset, clear the check box.

[Add] button
Add an access point.

[Update] button
Update access point information after information of an existing access point is edited.

[Delete] button
From the Access Point Information list, delete the selected access point.

Access Point Information list
Display access point information on the list.

4-3-3 Deleting a Source File

In source tree view, right-click the source file you want to delete, then select Delete.
Even when a source file is removed from Source Manager, the actual file is not deleted from the computer.

4-4 Running Preprocess

4-4-1 Performing the Preprocess Operation

1 After registering a source file, click Preprocess on the toolbar.

The source list display screen switches to the Preprocess screen.

2 On the Preprocess tab, select a process to run, then click the Start button.

The preprocess operation starts.

For details on the Preprocess tab, refer to "4-4-2 Setting Up the Preprocess Operation (Preprocess Tab)," page 36.
When the operation is finished, the Customize tab appears.

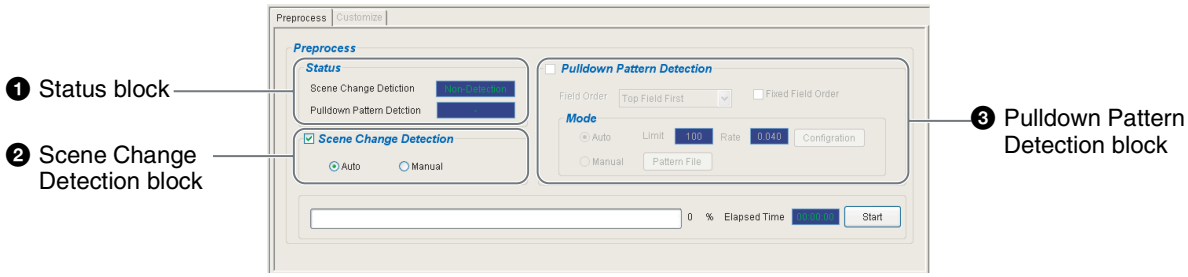
3 On the Customize tab, edit the detection results of pulldown pattern and scene change, then click the Update button.

For details on the Customize tab, refer to "4-4-3 Customizing the Detection Result (Customize Tab)," page 37.

Hint

You can also batch process a preprocess operation. To do this, select Entry from the PreProcess menu, and register the project as a batch process.

4-4-2 Setting Up the Preprocess Operation (Preprocess Tab)



❶ Status block

Scene Change Detection

Display the execution status of scene change detection.

Non-Detection : Not detected
Detected : Detected
In Progress : In progress

Pulldown Pattern Detection

Display the execution status of pulldown pattern detection.

Non-Detection : Not detected
Detected : Detected
In Progress : in progress

If a source file is not target of pulldown pattern detection, "-" appears.

❷ Scene Change Detection block

To perform scene change detection, select the check box to select a detection mode.

Auto : Automatic detection
Manual : Manual detection

❸ Pulldown Pattern Detection block

To perform pulldown pattern detection, select the check box.

Field Order

Select the field order of the source file.

Fixed Field Order

Use it if you want to perform source detection using a specified field order.

In the normal mode, if a pattern different from the one specified by Field Order is detected during pattern detection, an error occurs. This is because depending on the title incorrect detection may occur.

In this case, when you set Fixed Field Order to ON, you can enforce pattern detection based on the specified field order.

Mode

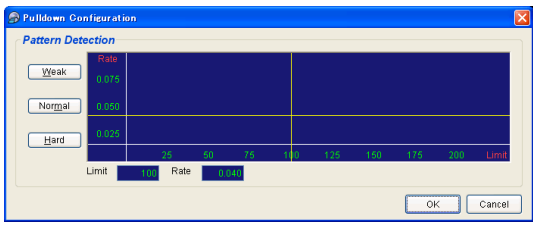
Auto

Select it if you want to perform automatic detection.

Limit, Rate: Display the threshold values used during detection.

Configuration button: Display the threshold value setting window.

Threshold value setting window



Hard / Normal / Weak buttons

Select threshold values for detection.

Threshold	Limit	Rate
Hard	25	0.025
Normal	100	0.040
Weak	200	0.075

To finely adjust the threshold value, drag the vertical line bar or horizontal line bar of the graph to a value you want to use.

About the detection threshold value

Adjust the detection precision of the repeat field.

Rate: When this value is increased, the number of repeat field detected increases.

Limit: When this value is increased, the number of repeat field detected decreases.

For a title with a lot of noise, when the values of both parameters are decreased, very few repeat fields are detected. On the contrary, for a title with not much noise,

when the values of both parameters are increased, a lot of repeat fields will be detected even if they are not (incorrect detection).

Hard: Suitable for title with a lot of noise
Normal: Suitable for normal title
Weak: Suitable for title with not much noise

Manual
Select it if you want to use a pattern file to import detection pattern.

Pattern File button
Display a screen to select pattern file.

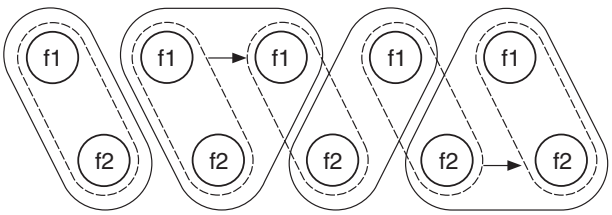
Start button
Start the preprocess operation.

4-4-3 Customizing the Detection Result (Customize Tab)

Use this function to customize a pulldown pattern.

Customizing a pulldown pattern

Pulldown usually repeats the AA, BB, BC, CD, and DD patterns.



Pulldown pattern
f1: field 1
f2: field 2
→: Repeat the field
Pulldown patterns 1 to 4 (solid line frame) indicates 24 Hz picture structure.
On the other hand, 30 Hz frame structure is indicated by the dashed line frame.

Pic_Mode block
Display each frame's pulldown pattern.

I
A AA
B BB
C BC
C CD (dummy frame)
D DD

This system enables editing of the following six patterns.
1. (AA,BB,BC,CD,DD)
2. (BB,BC,CD,DD,AA)
3. (BC,CD,DD,AA,BB)
4. (CD,DD,AA,BB,BC)
5. (DD,AA,BB,BC,CD)
6. AA (All AA)

Pattern editing procedure

1 Specify the range for performing customization.

2 Specify one of the six patterns listed above.

3 Click the Update button.

The customized content is updated.

4 Check to make sure that the specified pattern is customized.

5 When customization of all pulldown patterns is finished, select Close from the File menu.

Note

If the frame specified at the access point is a BC, CD, or DD frame, it is indicated by a red line. In this case, change the pulldown pattern or the location of the access point. If the frame at the access point is AA or BB, it is indicated by a yellow line. If the operation continues using the BC, CD, or DD frame, the access point will become invalid.

Import and export functions of pulldown file
You can import or export the pulldown pattern information file of each frame.

To import
From the Data menu, select Inverse 2-3 Pulldown. Click Import, then specify a file to import.

To export
From the Data menu, select 2-3 Pulldown. Click Export, then specify a file to save the information.

Editing the division candidate point

1 Double-click the division point (green, bold line) in the scene change display editing area.

A popup menu appears.

2 Remove the check mark from Select.

3 Double-click the new division candidate point.

A popup menu appears.

4 Add the check mark to Select.

5 Click the Update button.

The edited contents are updated.

6 Check to make sure the division point has been changed.

7 When all editing is finished, select Close from the File menu.

Specifying the division candidate point manually

1 On the Preprocess tab, select Manual for Scene Change Detection.

2 Click the Start button.

3 In Time Code of Division Point on the Customize tab, enter the timecode and click the Input button.

In the scene change display editing area, the division candidate point is indicated by a white line.

To specify a timecode from the scene change display editing area

1) In the scene change display editing area, double-click the division candidate point.
   A popup menu appears.
2) Select Set.
   In the scene change display editing area, the division candidate point is indicated by a white line.

Note

If inverse telecine has been performed, the frames of the following patterns cannot be set as division candidate points.

- BC
- CD
- DD

4 After specifying the settings, click the Update button.

The division candidate point is registered.

Hint

- After automatic detection is performed, you can add any point.
- If the division candidate point is set up manually, we recommend that you specify a scene that is not dependent on the previous screen such as scene change.

Notes

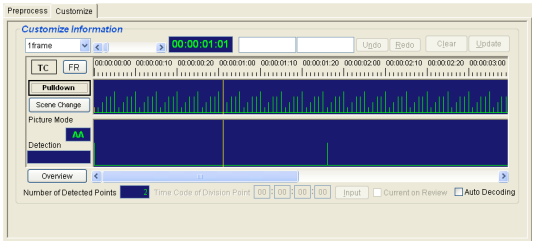
- When manual detection has been set up, if you perform automatic detection, the point set by manual detection becomes invalid.
- The division candidate point set up is not always split. According to the system environment (number of encoder PCs) and interval of the division candidate points, the most suitable division candidate point is calculated and distributed encoding is performed.

To clear the division point

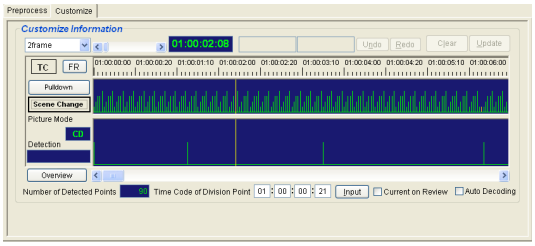
1) In the information display area, double-click the division point indicated by a white line.
   A popup menu appears.
2) Select Delete.
   The division point is cleared.

Customize tab screen

During pulldown pattern editing mode:



During scene change editing mode:



Timecode scale
Select a display unit for the graduations in the graph display area.

Graduation width
Adjust the display width of one graduation.
Moving it to the left reduces the width while moving it to the right increases the width.

Current timecode
Display the currently selected timecode.

Undo button/Redo button
Use these two buttons to cancel the previous operation, or cancel the previous Undo operation.
Up to 20 operations can be saved. If the 20 operations are exceeded, existing operations are deleted from the memory, starting from the oldest one.

Clear button
Cancel all customization changes made and return to the default state.

Update button
Confirm the customization changes made.

TC button/FR button (graduation display)
Specify whether to display using timecode or relative frame number.
Timecode or relative frame number is displayed in every 10 graduations.

Pulldown button/Scene Change button
Switch between the pulldown pattern editing mode and the scene change editing mode.

Picture Mode
If you are in the pulldown pattern editing mode, the pulldown pattern type of each frame is displayed.

Detection
If you are in the scene change editing mode, information of the detected division candidate is displayed.

Pulldown pattern display editing area
Display and edit the detected pulldown pattern.

Scene change display editing area
Display and edit the detected scene change.

Overview button
Display source entire file's pulldown pattern and scene change in the Source Information block.

Time Code of Division Point (during scene change editing mode)
For scene change editing, enter any timecode.

Input button
Set up timecode specified in Time Code of Division Point as scene change.

Current on Review
Display the timecode of the displayed review screen in Time Code of Division Point.

Auto Decoding
Select this check box to automatically display the image of the current position.

Chapter 5 Creating Projects

5-1 Chapter Outline

This chapter describes a series of operations, from how to click the Launcher button to start Project Manager, to how to create a target project for encoding.

This chapter contains the following main contents.

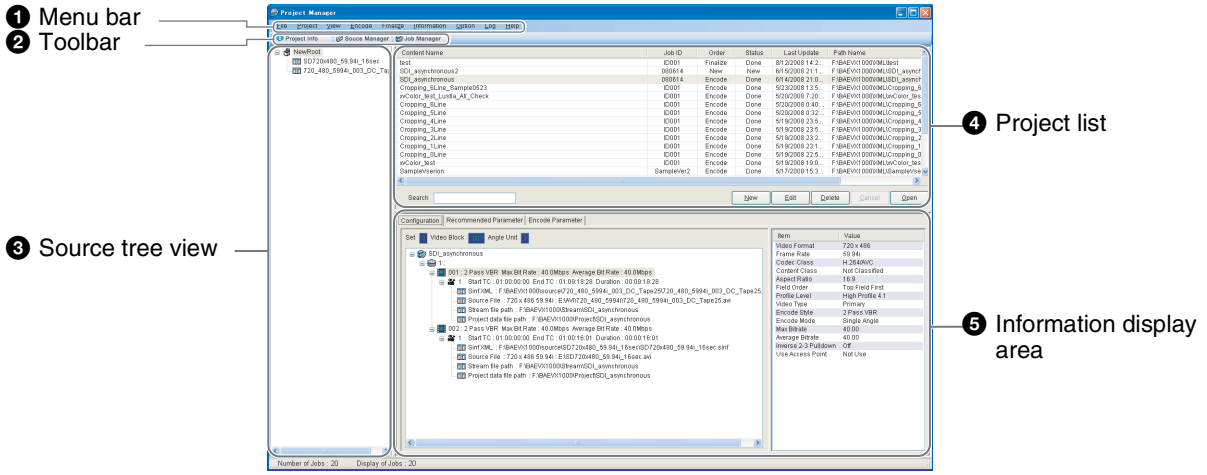
- Starting and exiting Project Manager
- Creating project: Create a new project.
  - Source project: Based on the registered title, set up encoding conditions and create a project.
  - Job project: Decide a title to create, register source file, set up encoding conditions, then create a project.

5-2 Starting and Exiting Project Manager

5-2-1 Starting Project Manager

From Launcher, click the Movie button.
Project Manager starts.

5-2-2 Project Manager Screen



❶ Menu bar

Menu bar	Command	Description
File	Close	Exit Project Manager.
Project	Select Path	Select a folder containing projects saved. All jobs stored in the selected folder are displayed in the project list.
	Select File	Select a job file and open it.
	New	Job: Create a new job. Source Project: Create a new source project.
	Edit	Edit a project selected from the project list.
	Delete	Delete a project selected from the project list.
	Save	Update the displayed settings and save the project.
View	Refresh	Update display of the screen to its latest status.
	Show Project Monitor	Display the project monitor.

Menu bar	Command	Description
Encode	Parameter File	Import: Import encoding parameters from a file that has been exported. Export: Export the displayed encoding parameters to a file.
	Entry	Register a project for encoding.
Finalize	Entry	Normal: Register a project for normal finalization (by set). Roll Encode: Register a project for Roll Encode (by video block). *For details on Roll Encode, refer to "5-4-2 Setting Up Source for Encoding (Source Tab)," page 45.*
Information	Project	Display the definition information of the currently selected project.
	Encode Parameter	Display the encoding parameters of the currently selected project.
Option	Edit User Define Scaling List	Display the User Define Scaling List window.
	Edit User Define QMatrix	Display the User Define QMatrix window.
	Export - Access Point Data	Export access point data to a file.
Log	Encode Log	Display the encoding log window.

Menu bar	Command	Description
Help	Version	Display information on the software such as the current version and copyright information.

❷ Toolbar

Project Info

Display the setting information of a project that has been set up. The information display area switches to the Configuration screen.

Souce Manager

Edit the setting information of a source project. The information display area switches to the source project creation screen.

Job Manager

Open the job project setting screen.

❸ Tree view

Display the registered source information in a tree format.

❹ Project list

Load a project file and display it in a list.

New button

Create a new project.

Edit button

Edit a currently selected project.
If the project type is job, display the Project Editor window.
If the project type is source project, display the source project creation screen in the information display area.

Delete button

Delete a project.

Cancel button

Cancel project editing.

Open button

Display the Customize Review window.

❺ Information display area

Display the project information when an existing project is selected.
Display the source project creation screen when creating a new source project.

5-2-3 Exiting Project Manager

Click the button on the window, or select Close from the File menu.
Project Manager exits and the Launcher screen returns.

5-3 Creating and Managing Project for Encoding

5-3-1 Creating a New Project

The following types of projects are available.

- Source project: Create a project by setting bit rate and other parameters based on a source file registered in Source Manager.
- Job project: Decide a title to create, register the source file that will be used, and set the bit rate and other parameters.

The following sections describe how to create a project.

Creating a source project

1 Click the New button in Project Manager.

Project Manager's information display area changes to the source project creation screen.

2 On the source project creation screen's Project tab, set up content name and other parameters, then click the Update button.

For details, refer to "5-4-1 Setting Up the Basic Information of a Project (Project Tab)," page 43.

3 Use the Source tab to set up the source file.

You can also use drag-and-drop to specify the source file.

For details, refer to "5-4-2 Setting Up Source for Encoding (Source Tab)," page 45.

4 Use the Configuration tab to set up video block and angle unit, then click the Update button.

For details, refer to "5-4-3 Setting Up Video Block and Angle Unit (Configuration Tab)," page 47.

5 Use the Size tab to set up size information, then click the OK button.

For details, refer to "5-4-4 Setting Up Size Information (Size Tab)," page 49.

6 When the Project Review window appears, click the Save button in the window.

Creating a job project

1 Click the New button in Project Manager.

The dialog box for selecting the job type appears.

2 Select Job, and click the OK button.

The Project Editor window appears.

3 Configure the project settings in each of the tabs of the Project Editor window.

For details, refer to "5-5 Setting Up a Job Project," page 50.

4 Click the Update button when configurations for each tab are finished.

5 Use the Size Information tab to set up size information, then click the OK button.

6 When the Project Review window appears, click the Save button in the window.

5-3-2 Editing an Existing Project

1 From the project list in Project Manager, select an existing project.

Project Manager's information display area switches to the Configuration screen.

2 Use the Configuration screen to edit the basic settings of job.

For details, refer to "6-2 Checking and Setting Up Encoding Parameters," page 53

3 To edit parameters for encoding, select the Encode Parameter tab and perform the settings.

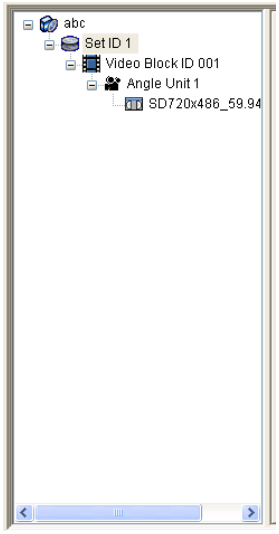
4 On the Encode Parameter tab, click the OK button.

5 Use the Size or Size Information tab to set up size information, then click the OK button.

6 When the Project Review window appears, click the Save button in the window.

5-4 Setting Up a Source Project

To set up a source project, use Project Manager's source project creation screen.

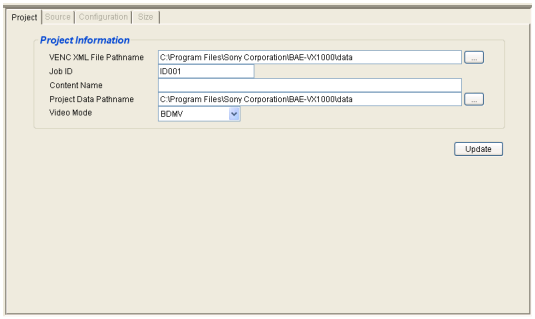


Tree view area

Tree view area

Contents (set, video block, angle unit) appear in the tree format. To edit a content, select it from the tree view area.

5-4-1 Setting Up the Basic Information of a Project (Project Tab)



VENC XML File Pathname

Specify the pathname of the destination for saving a project (VENC.XML file). Enter a pathname, or click the Browse button to select a destination. In the specified output destination folder, a folder with the content name entered in the Content Name text box is created automatically and the project (VENC.XML) file is saved in the created folder.

To specify the pathname, you can also use Explorer or a similar tool to drag and drop a folder.

Job ID

Enter the ID of a job to create (letter or number up to 6 characters).

Content Name

Enter the content name of a job to create (up to 255 characters).
A folder with the entered name is automatically created at the location specified by VENC XML File Pathname and Project Data Pathname.

Note

In this software, a folder with the name specified by Content Name is created underneath the folder specified by VENC XML File Pathname. For this reason, the name cannot exceed 255 characters in total.

Project Data Pathname

Enter a pathname to use for saving intermediate files created when a project is executed. Enter a pathname, or click the Browse button to select a destination. Inside the folder specified by the pathname, a folder with the content name entered in Content Name is created automatically and then intermediate files are stored in this folder.

Video Mode

Select a video format for encoding.
BDMV: Encode using a format for BD-ROM.
DVD: Encode using a format for DVD.
By default, BDMV is used.

Update button

Confirm the Project tab settings.
When you click the Update button, the Source tab can now be selected.

5-4-2 Setting Up Source for Encoding (Source Tab)

Adding source

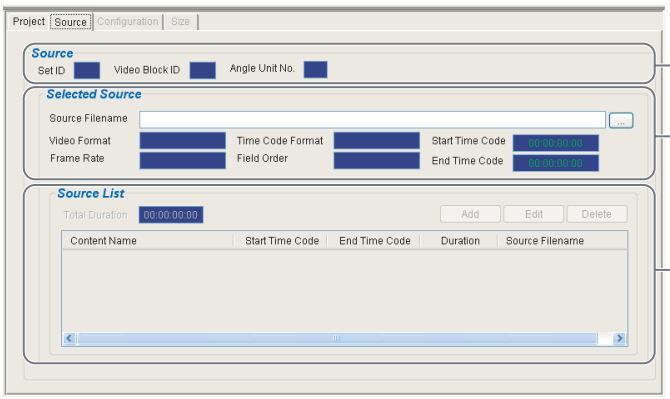
For the source, you can use Source tab's Source Filename to specify, or drag and drop a source file.
If you want to drag and drop a source file, use the source tree view and select a source file, then drag and drop it to the source project creation screen's tree area or Source File Name.
According to the status when you drag and drop the source file, a hierarchy is automatically created.

Hint

If you drag and drop the source file on the root (highest level) of the hierarchy, a new Set branch is created.
If you drag and drop the source file on a Set branch, a new Video Block branch is created.

Multi-source

Normally, one source is defined for one Angle Unit (single source). However, multiple sources for one Angle Unit are also possible (multi-source). In a multi-source project, use the Source tab to specify multiple sources.



❶ Source block

Set ID
Display the Set ID of the currently selected source in tree view.

Video Block ID
Display the Video Block ID of the currently selected source in tree view.

Angle Unit No.
Display the angle unit number of the currently selected source in tree view.

❷ Selected Source block

Source Filename
Use one of the following operations to specify the source file's pathname.

- Enter a pathname.
- Click the Browse button to display the source selection window and select a file.
- Drag and drop in the source tree view.

Video Format
Display the video format.

Frame Rate
Display the frame rate.

Time Code Format
Display the timecode format.

Field Order
Display the field order (only if source is interlace).

Start Time Code
Display the start point timecode.

End Time Code
Display the end point timecode.

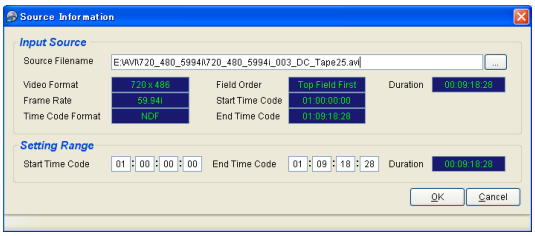
❸ Source List block

Total Duration
Display the total time.

Add button
Add a source file. Clicking this button displays the range dialog box.

In a multi-source project, click the Add button to add sources.

Range dialog box



Source Filename

Specify a source file name. Enter a file name, or click the Browse button to select a file.
When you enter a source file name, the source file information appears.
Video Format: Video format
Field Order: Field order
Duration: Length
Frame Rate: Frame rate
Time Code Format: Timecode format
Start Time Code: Start point timecode
End Time Code: End point timecode

Start Time Code

Specify the start point timecode of the scene to add to a project.

End Time Code

Specify the end point timecode of the scene to add to a project.

Duration

Display the length from the start point timecode to the end point timecode.

Edit button

Change the settings of the source file currently selected from the source list.

Delete button

Delete the currently selected source file from the source list.

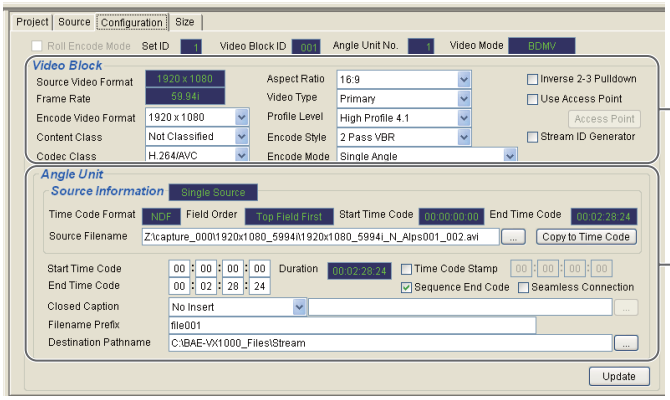
Note

The first source file cannot be deleted.

Source list

Displays source files in a list format.

5-4-3 Setting Up Video Block and Angle Unit (Configuration Tab)



Roll Encode Mode

When there are multiple video blocks in a set, the video blocks are combined into a single stream under normal finalization.

However, you can also configure and encode sources (rolls) block by block before combining them into a single stream.

Note

To use Roll Encode Mode, a set must contain multiple video blocks with each block having the same codec, format, and frame rate. In addition, this mode does not support multi-angle.

Set ID

Display the Set ID of the currently selected source file.

Video Block ID

Display the Video Block ID of the currently selected source file.

Angle Unit No.

Display Angle Unit No. of the currently selected source file.

Video Mode

Display the video mode of the currently selected source file.

❶ Video Block block

Set up video block information. If there are multiple video blocks, set up information for each video block, and then click the Update button.

Source Video Format

Display the resolution of the source file.

Frame Rate

Display the frame rate of the source file.

Encode Video Format

Specify the resolution to use after encoding.

Content Class

Specify the genre of the video for encoding.

While it does not affect encoding, it provides a handy description in stream management.

Codec Class

Specify the type of encoding (H.264/AVC, MPEG-2).

Aspect Ratio

Specify the aspect ratio.

Hint

You can select 16:9 (Pan/Scan) aspect ratio for DVD projects. To configure Pan/Scan settings during authoring, select 16:9 (Pan/Scan).

Video Type

Specify the type of ES file for encoding.

Primary: Primary video stream

Secondary: Secondary video stream

Profile level

Specify the profile's level.

Encode Style

Specify whether to encode using 2 passes (2 Pass VBR or Fast 2 Pass VBR) or 1 pass (1 Pass CBR or 1 Pass VBR (AVC encoding only)).

Encode Mode

Specify multi-angle information.

Inverse 2-3 Pulldown

If this check box is selected, pulldown pattern can be detected during preprocess.

For details on Inverse 2-3 Pulldown editing, refer to "Customizing a pulldown pattern," page 37.

Use Access Point
To use access point, select the check box.

Access Point button
Display the Input Access Point window and specify access point.

For details on the Input Access Point window, refer to "Input Access Point window," page 34.

Stream ID Generator
If this check box is selected, the bitmap file specified in System Setup is inserted.

❷ Angle Unit block

Source Information

Time Code Format
Display the source file's timecode format.

Field Order
Display the source file's field order.

Start Time Code
Display source file's start point timecode.

End Time Code
Display source file's end point timecode.

Source Filename
Specify the source file name.

Copy to Time Code button
Set the source file's Start Time Code and End Time Code to Start Time Code and End Time Code.

Start Time Code
Specify the start point timecode for encoding.

End Time Code
Specify the end point timecode for encoding.

Duration
Display the length of encoding.

Time Code Stamp
Enter the start point timecode to set up in bitstream.

Sequence End Code
Select it when to specify sequence encoding.

Seamless Connection
To set up seamless connection, select it.

Closed Caption
Specify whether to insert closed caption data in video stream.
If you do not want to insert closed caption data: Select "No Insert."
If you want to insert closed caption data: Select "Insert CC Data from File," then specify a *.cc file.
If you want to insert dummy data: Select "Insert Dummy CC Data." Insert the dummy data in the Muxer or other applications used after the encoder.

Filename Prefix
Enter a name prefix to use for saving video stream files. The prefix is automatically attached to the front of a video stream file name.

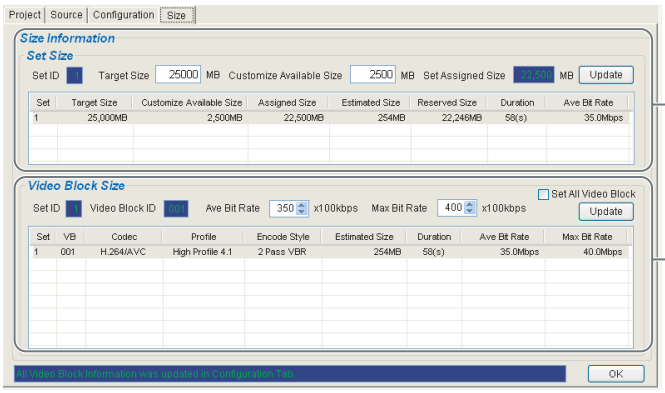
Destination Pathname
Specify a pathname to use for saving stream files created. Enter a pathname, or click the Browse button to select a pathname.

Update button
Confirm the Configuration tab's settings.
When you click the Update button, the Size tab can now be selected.

Note

The maximum length for encodings that can be registered to a single angle unit is about two hours (one tape).

5-4-4 Setting Up Size Information (Size Tab)



❶ Set Size block

❷ Video Block Size block

❶ Set Size block

Set ID
Display the currently selected set ID in tree view.

Target Size
Enter the target size of the currently selected set ID.

Customize Available Size
Enter the size of the data area for customization.

Set Assigned Size
Display the size assigned to the set ID.

Update button
Confirm the Set Size block's settings.

Set Size list
Information related to the size of the set ID appears in a list

❷ Video Block Size block

Set ID
Display the currently selected set ID in tree view.

Video Block ID
Display the currently selected video block ID in tree view.

Average Bit Rate
Specify the average bit rate for video encoding. (Maximum value is 400 × 100 kbps.)

Note

It cannot be set in 1 pass CBR. Specify only Maximum Bit Rate.

Maximum Bit Rate
Specify the maximum bit rate for video encoding. (Maximum value is 400 × 100 kbps.)

Set All Video Block
Select this to configure the same bit rate for all video blocks.

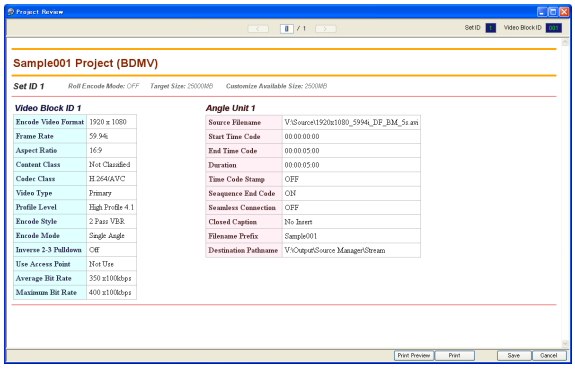
Update button
Confirm the Video Block Size block's settings.

Video Block Size list
Information related to the sizes of the video blocks appears in the list.

Update status display
Displays whether the video block information has been updated.
If the information has not been updated, return to the Configuration tab and click the Update button.

OK button
Confirm the project settings.
The Project Review window appears when you click the OK button.

5-4-5 Project Review Window



Print Preview button
Preview the displayed settings.

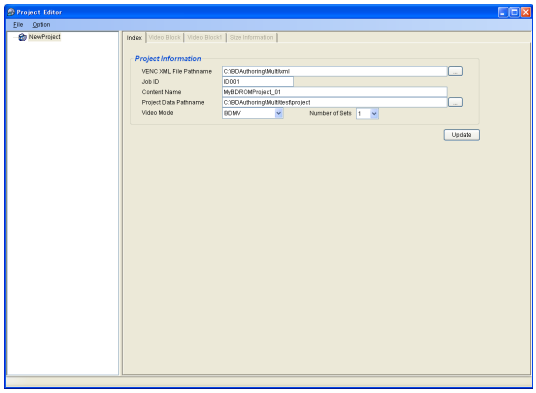
Print button
Print out the displayed settings.

Save button
Click the Save button if the displayed settings are correct. The project is saved and the content name is registered.

Cancel button
Click the Cancel button to return to the Size tab and edit the project settings.

5-5 Setting Up a Job Project

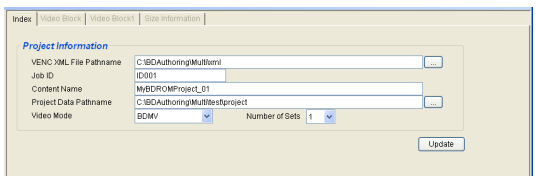
Use Project Editor to set up a job project.



Menu bar

Menu bar	Command	Description
File	Save	Save the settings.
	Save and Close	Save the settings and close the Project Editor window.
	Import	Import project information created with BAE-VA700.
	Close	Close the Project Editor window.
Option	Roll Encode Mode	Check the set ID for which to execute Roll Encode.

5-5-1 Setting Up the Basic Information of a Project (Index Tab)



VENC XML File Pathname
Specify the pathname of the destination for saving a project (VENC.XML file).

Job ID
Enter the ID of a job to create.

Content Name
Enter the content name of a job to create.

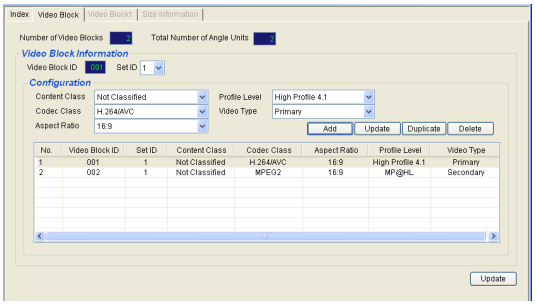
Project Data Pathname
Enter a pathname to use for saving intermediate files created when a project is executed.

For details, refer to "5-4-1 Setting Up the Basic Information of a Project (Project Tab)," page 43.

Number of Sets
Specify the number of sets to determine the target size for the completed project.

Update button
Confirm the Index tab settings.
When you click the Update button, the display switches to the Video Block tab.

5-5-2 Video Block tab

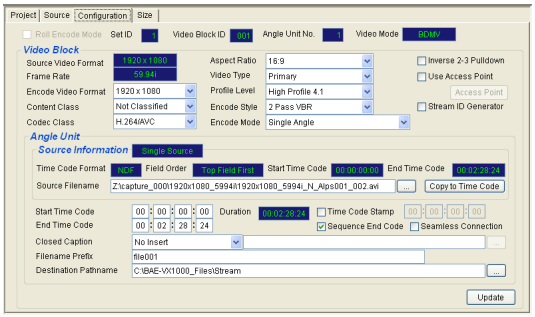


The settings in this tab are the same as those found under the Video Block block in the Configuration tab of Project Manager.

For details, refer to "5-4-3 Setting Up Video Block and Angle Unit (Configuration Tab)," page 47.

Update button
Confirm the Video Block tab settings.
When you click the Update button, the display switches to the Video Block1 tab.

5-5-3 Video Block1 tab



Video Block Information block

Video Block ID
Display the Video Block ID selected in the tree view.

Codec Class
Display the type of encoding.

Video Format
Specify the video format of the sources.

Frame Rate
Specify the frame rate of the sources.

Encode Style
Select whether to use two-pass (2 Pass VBR or Fast 2 Pass VBR) or one-pass (1 Pass CBR or 1 Pass VBR (AVC only)) encoding.

Encode Mode
Specify multi-angle information.

Inverse 2-3 Pulldown
Select this check box to encode using the pulldown pattern detected during preprocessing.

For details on Inverse 2-3 Pulldown editing, refer to "Customizing a pulldown pattern," page 37.

Use Access Point
Select this check box to use access points.

Access Point button
Display the Input Access Point window, and configure access points.

For details on the Input Access Point window, refer to "Input Access Point window," page 34.

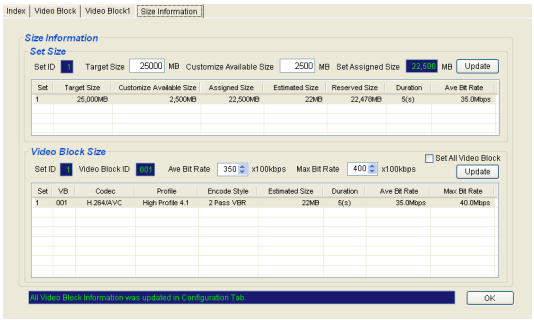
Stream ID Generator
If this check box is selected, the bitmap file specified in System Setup is inserted.

Angle Unit block
The settings in this tab are the same as those found under the Angle Unit block in the Configuration tab of Project Manager.

For details, refer to "5-4-3 Setting Up Video Block and Angle Unit (Configuration Tab)," page 47.

Update button
Confirm the Video Block1 tab settings.
When you click the Update button, the Size Information tab becomes selectable.

5-5-4 Size Information tab



The settings in this tab are the same as those found in the Size tab of Project Manager.

For details, refer to "5-4-4 Setting Up Size Information (Size Tab)," page 49.

OK button

Confirm the Project Editor settings.
The Project Review window appears when you click the OK button.

For details on its contents, refer to "5-4-5 Project Review Window," page 49.

Chapter 6 Encoding

6-1 Chapter Outline

This chapter describes a series of operations, from how to perform the encoding process, to how to customize after encoding.

This chapter contains the following main contents.

- Checking and setting up encoding parameters
- Selecting and running job for encoding
- Checking encoding result
- Performing customization after encoding

6-2 Checking and Setting Up Encoding Parameters

1 On Project Manager's toolbar, click Project Info and display the Configuration screen.

2 From the Project list, select a project for setting up parameters.

3 Selected the Recommended Parameter tab and set up the characteristics of the source file.

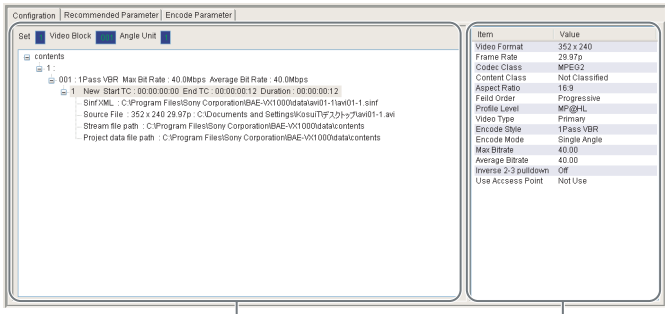
According to the characteristics of the source file, the recommended parameters are automatically set up.

For details, refer to "6-2-2 Setting Up Recommended Parameters (Recommended Parameter Tab)," page 55.

4 Use the Encode Parameter tab to check and set up detailed parameters.

For details, refer to "6-2-3 Performing Detailed Settings of Encoding (Encode Parameter Tab in the Case of H.264/AVC)," page 56 or "6-2-4 Performing Detailed Settings of Encoding (Encode Parameter Tab in the Case of MPEG-2)," page 60.

6-2-1 Displaying the Basic Conditions of Encoding (Configration Tab)



The Configuration tab displays information on the currently selected project.

❶ Tree display area

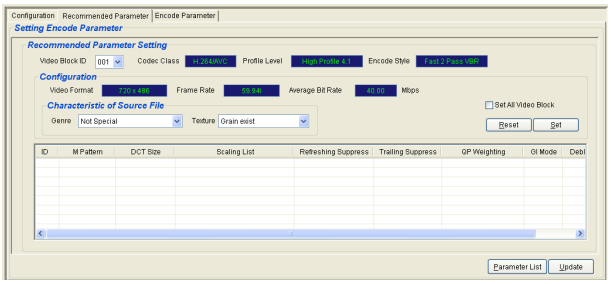
Display information on the currently selected project in the tree format.

❷ Detailed information area

Display detailed information on the currently selected parameter in the tree view.

6-2-2 Setting Up Recommended Parameters (Recommended Parameter Tab)

Use Characteristic of source file on the Recommended Parameter tab to specify the source file's properties (genre, picture quality).
When you click the Set button, parameters most suitable for the source file's properties appear.
If there are multiple video blocks, specify parameters for each video block.
When settings of all video blocks are completed, click the Update button.
Parameters displayed in the parameter list are saved, and the Encode Parameter tab appears.



Video Block ID
Select a video block ID for setting up the parameters.

Codec Class
Display the type of encoding.

Profile Level
Display the profile's level.

Encode Style
Display the encoding style.

Configuration block

Video Format
Display the video's resolution.

Frame Rate
Display the frame rate.

Average Bit Rate
Display the average bit rate of encoding.

Genre
Specify the genre of the source.
- Film: Film sources
- CG Anime: CG animation sources
- Sports: Sports sources
- MusicLive: Live music sources
- Landscape (River, Waterfall): Landscape sources
- Static Picture: Still pictures or sources with minimal movement
- Not Special: Miscellaneous sources
- Black Belt: Sources with black bars at the top and bottom (letterboxing)

Hint
The options that are available vary depending on the video format and rate settings.
For example, Black Belt does not appear when MPEG2 is selected.

Texture
Specify the picture quality of the title.
- Grain non-exist:
  Source with no film grain or camera noise
  (Quality/Speed are reflected in the Encode Quality setting)
- Grain exist:
  Source with film grain or camera noise
  (Quality/Speed are reflected in the Encode Quality setting)

Set All Video Block
Apply parameters to all rolls.

Reset button
Return the settings to their defaults.

Set button
Set up the parameters using the specified contents.
Recommended parameters appear in the parameter list.

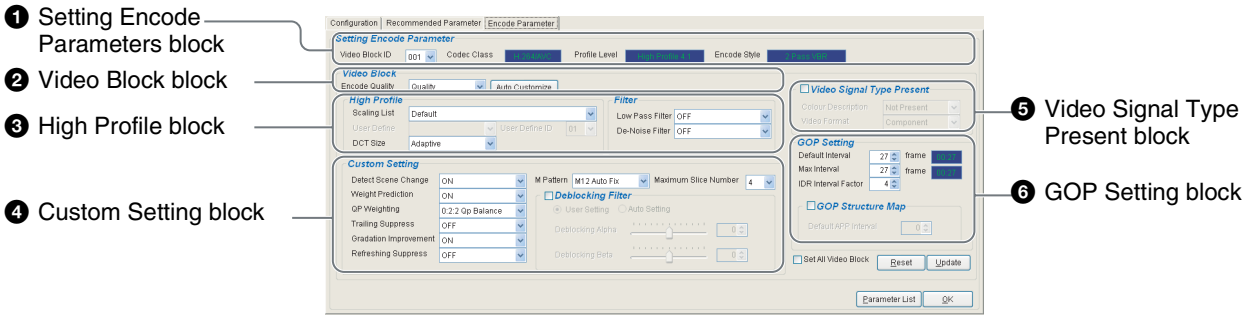
Parameter list
Display parameters set up in each video block in a list format.

Parameter List button
Display the parameter list window.

Update button
Update the parameter setting file after all settings of the video block are performed.

6-2-3 Performing Detailed Settings of Encoding (Encode Parameter Tab in the Case of H.264/AVC)

Check and set up parameters for encoding in H.264/AVC.
Set up parameters for each video block, then click the Update button.
After settings of all video blocks are completed, click the OK button.



❶ Setting Encode Parameters block

Video Block ID
Select a video block ID for setting up parameters.

Codec Class
Display the type of encoding.

Profile Level
Display the profile's level.

Encode Style
Display the encoding style.

❷ Video Block block

Encode Quality
Perform settings related to the encoding quality.
Quality: The best picture quality can be obtained but encoding takes time.
Speed: The picture quality and encoding time both fall between Quality and Express.
Express: The picture quality is not as good as the other two modes, but we recommend this mode when prioritizing speed.
The default mode is Quality.

Hint

If your focus is image quality, we recommend that you use the Quality mode to perform encoding.

Auto Customize button
Open the automatic customization setting window.

Note

The Auto Customize function can be used only for 2 pass VBR.

Low Pass Filter
Configure the low pass filter setting. The default setting is OFF.
Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
OFF: Do not apply the filter.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

De-Noise Filter
Configure the de-noise filter setting. The default setting is OFF.
Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
OFF: Do not apply the filter.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

Hint

The CG Mode filter is effective for CG animation sources.

Automatic customization setting window

Num of Candidate

Specify the number of candidates for automatic customization (2 to 5). The default is 5.

Weight Interval

Specify the width of weight (1 to 10). The default is 1 (1=10%, 10=100%).

(Example)

If the number of candidates is set to 5 and the width of weight to 2(=20%), using 100 as the base, five candidates (120, 140, 160, 180, 200) are encoded at 20% interval.

Threshold

Specify the degree of detection.

Weak: Detection cannot be made.

Hard: Detection range is widened.

The default is Normal.

❸ High Profile block

Perform detailed settings if encoding is done using High Profile.

Scaling List

Set up Scaling List.

When High Profile is selected, the method to perform encoding by adding weight to each frequency component contained in the image can be used.

Hint

- Scaling list refers to “weight of each frequency component.”
  In this software, you can select from the preset scaling list.
- For general movie titles, if you want to improve the reproducibility of grain (particle shape) noise, we recommend that you use the following options according to the format of the title.
  Grain Preserved (Progressive)
  Grain Preserved (Interlace)
  For other titles, we recommend that you use Default.
- When titles such as CG are encoded, in rare cases unnatural noise of grid shape may occur. In this case, we recommend that you use Dither Noise Reduction.
- If you set the average bit rate to 8 Mbps or below when encoding HD sources that include high-range components such as noise, the picture quality may deteriorate. In this case, we recommend that you use Low Rate.
- To improve reproduction when encoding animated sources (Progressive) at an average bit rate of 30 Mbps with grain noise present, we recommend that you use Grain Anime.
- When encoding sources that include camera noise, noise reproducibility may decrease. In this case, we recommend that you use High Feq. Preserved (Interlace).
- When encoding sources that include grain noise that is similar to white noise, GOP unit flicker may become noticeable. In this case, we recommend that you use Heavy Noise.

For details, refer to “To change the scaling list (Scaling List),” page 72.

DCT Size

Specify the DCT size selection method.

User Define

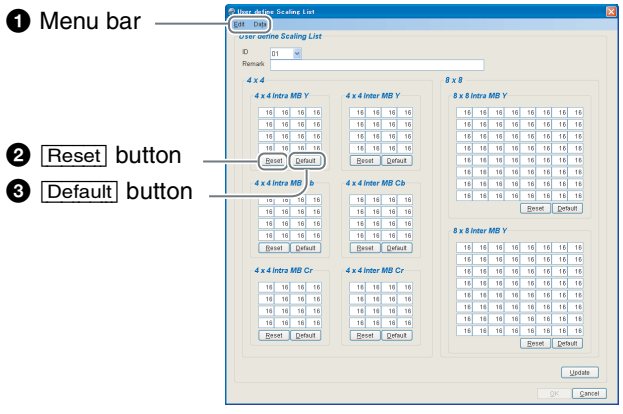
Select a user-defined scaling list.

User Define ID

Select a User Define ID. It is valid only when User Define is selected from Scaling List and then Others is selected from User Define.

To define a user-defined scaling list, select Edit User Define Scaling List from the Option menu to display the User Define Scaling List window.

User Define Scaling List window



❶ Menu bar

Menu bar	Command	Description
Edit	Reset All	Return to the values before the change (when the window starts).
	Default All	Return to the default value (16).
	Scaling List Copy	Open the Scaling List Copy window.
Data	Import	Load the Scaling List file.
	Export	Save the Scaling List file using a file name specified by the user.

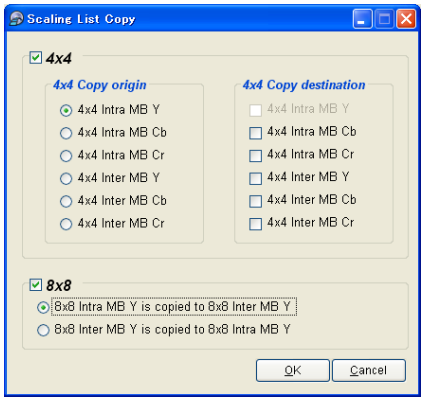
ID
Select a Scaling List ID.

Remark
Enter remarks.

❷ Reset button
Return to the values before the change (when the window starts).

❸ Default button
Return to the default value (16).

Scaling List Copy window



4 × 4
Copy scaling list parameters selected in 4 × 4 Copy origin to the macro block selected in 4 × 4 Copy destination.

8 × 8
Select to copy the 8 × 8 Intra MB Y parameters to 8 × 8 Inter MB Y, or copy the 8 × 8 Inter MB Y parameters to 8 × 8 Intra MB Y.

❹ Custom Setting block

Detect Scene Change
Specify a scene change detection mode.

Weight Prediction
This is a technique to efficiently encode fade-in or fade-out. The default is ON.

QP Weighting
Specify the bit rate assignment for each picture type.
- 0:0:2 Qp Balance: Increase the assignment of B Picture only.
- 0:2:4 Qp Balance: Increase the assignment of P, B Picture. (B Picture focused)
- 0:2:2 Qp Balance: Increase the assignment of P, B Picture. (P, B Picture same)
- Dynamic auto: Evaluate the title automatically and change the assignment appropriately.

Hint
For titles with film grain feel or normal titles with motion, we recommend that you specify 0:2:2 Qp Balance.
For still images or titles with almost no motion, we recommend that you specify Dynamic auto.

Trailing Suppress
Specify to whether use an algorithm which reduces the Trailing phenomenon.
(Trailing phenomenon: This is a phenomenon that occurs during low bit rate encoding for screen containing scenes with little change. When the edge (border) moves horizontally, it becomes an unnatural image that looks like it has been dragged.)
- Animation: This algorithm is suitable for animation and CG titles.
- Normal: This algorithm is suitable for normal titles.

Hint
Limit it to scene where the Trailing phenomenon occurs. In other cases, we recommend that you set it to OFF.

Gradation Improvement
Specify whether to use the algorithm which improves the picture quality of flat areas such as gradation.

Hint
We recommend disabling this function for sources with sharp changes in brightness.

Refresh Suppress
Specify whether to use the algorithm which reduces the Refreshing phenomenon.

(Refreshing phenomenon: This is a phenomenon in scenes with little motion where images appear to be moving between the I and IDR interval.)

Hint

If sufficient amount cannot be assigned to title (when bit rate is low), to reduce the Refresh phenomenon, we recommend that you set it to ON. In other cases, set it to OFF.

M Pattern
Specify an M pattern.

Maximum Slice Number
Specify the number of slices (4 or 1)*.

* If AVC's LEVEL is set to 4.1, the number of slices is fixed at 4. If AVC's LEVEL is not set to 4.1, the number of slices can be set to 4 or 1. (The default is 4.)

Hint

Set the AVC LEVEL in the Configuration tab of Project Manager.

Deblocking Filter
Select it if you want to enable the deblocking filter.

User Setting
Select it if you want to directly specify the values of the deblocking filter coefficients α and ß.

Auto Setting
Select it if you want to automatically adjust the values of the deblocking filter coefficients α and ß according to the degree of occurrence of block noise.

Deblocking Alpha / Deblocking Beta
Specify the offset values of coefficients α and ß when User Setting is selected.

Hint

When the deblocking filter is enabled, while block noise is reduced, the opposite is that comparing with the original title the feel of quality may be damaged.

❺ Video Signal Type Present block

Color Description
Specify whether to include color information in stream.

Not Present: Include in the stream.

Present: Include VUI information below Color Primaries in the stream.

Video Format
Specify the video format.

❻ GOP Setting block
Perform settings related to GOP.

Default Interval
Specify the default I picture interval (unit: frame).

Max Interval
Specify the maximum I picture interval (unit: frame).

IDR Interval Factor
IDR (Instantaneous Decoder Refresh: Instantaneous refresh of decoder recovery operation) Specify the picture interval.

GOP Structure Map
Specify the ON/OFF of GOP Structure Map as well as the standard interval.
Specify whether to insert APP in a fraction of the default I picture interval.
This setting is available when the GOP Structure Map check box is selected.

Set All Video Block
If the check box is selected, you can update all video blocks with the encoding parameter settings.

[Reset] button
Return to the default settings.

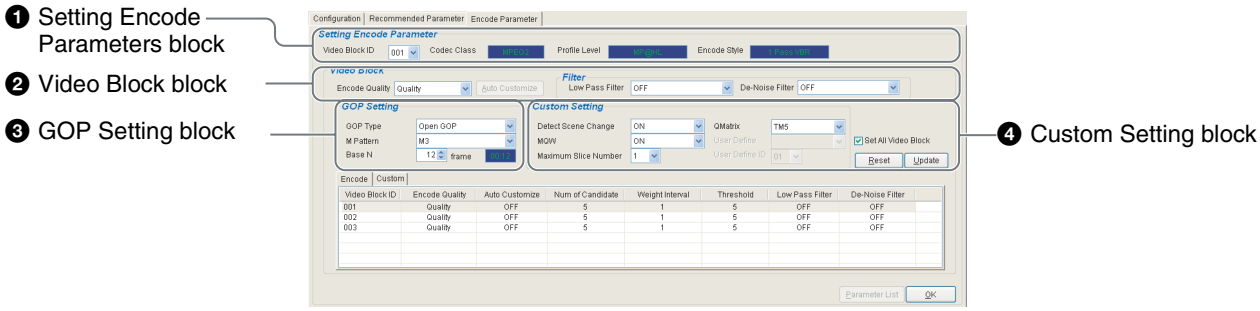
[Update] button
Update video blocks with the encoding parameter settings.

[Parameter List] button
Display the parameter list window. You can check the parameters set up for each video block ID.

[OK] button
Confirm all settings.

6-2-4 Performing Detailed Settings of Encoding (Encode Parameter Tab in the Case of MPEG-2)

Check and set up parameters for MPEG-2 encoding.
Set up parameters for each video block, then click the Update button.
After settings of all video blocks are completed, click the OK button.



❶ Setting Encode Parameters block

Video Block ID
Select a video block ID for setting up parameters.

Codec Class
Display the type of encoding.

Profile Level
Display the profile's level.

Encode Style
Display the encoding style.

❷ Video Block block

Encode Quality
Perform settings related to the encoding quality.
Quality: The best picture quality can be obtained but encoding takes time.
Speed: The picture quality is lower than Quality, but shorter time is required to complete encoding.
The default mode is Quality.

Note

Depending on your operating environment, the difference in processing speed between Quality and Speed encoding may be less noticeable.

Hint

If your focus is image quality, we recommend that you use the Quality mode to perform encoding.

Auto Customize button
Open the automatic customization setting window.

Note

The Auto Customize function can be used only for 2 pass VBR.

Low Pass Filter
Configure the low pass filter setting. The default setting is OFF.
Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
OFF: Do not apply the filter.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

De-Noise Filter
Configure the de-noise filter setting. The default setting is OFF.
Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
OFF: Do not apply the filter.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

Hint

The CG Mode filter is effective for CG animation sources.

Automatic customization setting window

Num of Candidate
Specify the number of candidates for automatic customization (2 to 5). The default is 5.

Weight Interval
Specify the width of weight (1 to 10). The default is 1 (1=10%, 10=100%).
(Example)
If the number of candidates is set to 5 and the width of weight to 2 (=20%), using 100 as the base, five candidates (120, 140, 160, 180, 200) are encoded at 20% interval.

Threshold
Specify the degree of detection.

Weak: Detection cannot be made.

Hard: Detection range is widened.

The default is Normal.

❸ GOP Setting block

GOP Type
Specify Closed GOP or Open GOP.

M Pattern
Specify M pattern.

Max Interval Sec
Specify the maximum I picture interval (unit: frame).

Base N
Specify the I picture interval (unit: frame) to be used as the standard.

❹ Custom Setting block

Detect Scene Change
Specify a scene change detection mode.

MQW
Select ON/OFF of MQW.

Slice Num
Specify the number of slices (1 to 16).

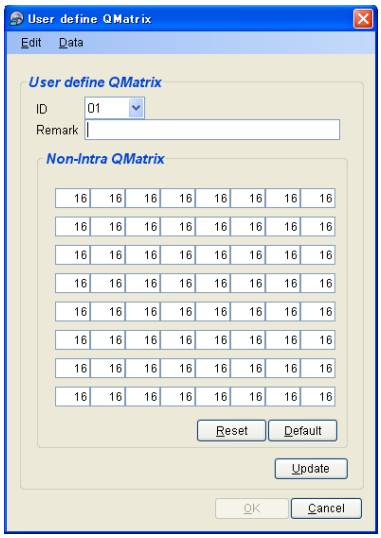
QMatrix
Set up QMatrix.

User Define
Select a user-defined QMatrix.

User Define ID
Select a User Define ID. It is valid only when User Define is selected from QMatrix and then Others is selected from User Define.

To define a user-defined scaling list, select Edit User Define QMatrix from the Option menu to display the User Define QMatrix window.

User Define QMatrix window



ID
Select a QMatrix ID.

Remark
Enter remarks.

[Reset] button
Return to the values before the change (when the window starts).

[Default] button
Return to the default value (16).

Set All Video Block
If the check box is selected, you can update all video blocks with the encoding parameter settings.

[Reset] button
Return to the default settings.

[Update] button
Update video blocks with the encoding parameter settings.

Encoding parameter list
You can check the parameter list set up for each video block ID.

[Parameter List] button
Display the parameter list window. You can check all the parameters set up.

[OK] button
Confirm all settings.

6-2-5 Registering and Performing the Encoding Operation

1 From the Project Manager, select a project from the list for encoding.

2 Select Entry from the Encode menu.

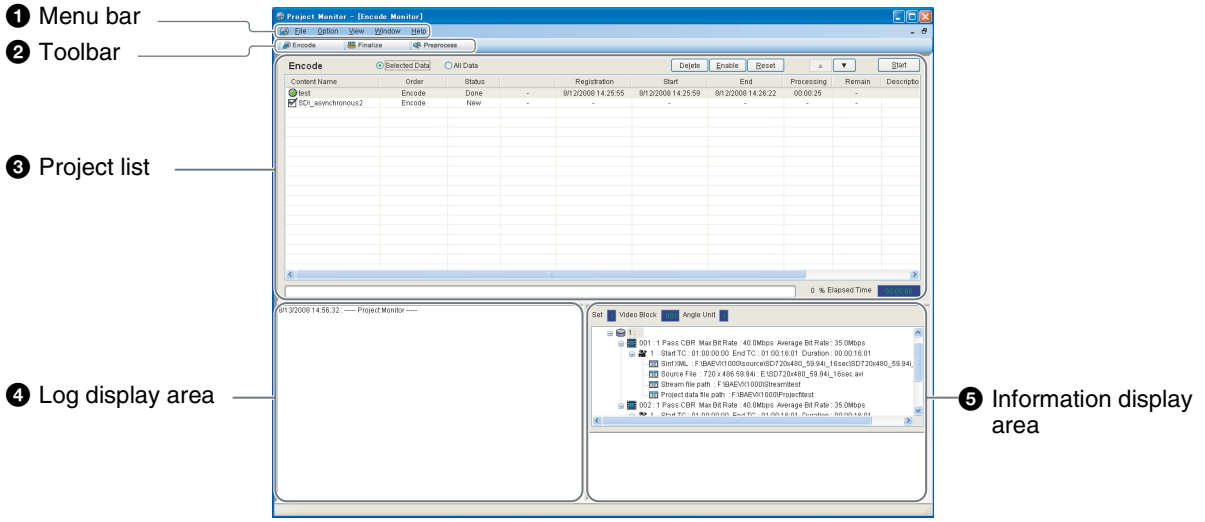
The Project Monitor screen appears.

3 Click the Start button.

The Project Monitor screen displays the encoding progress status.

6-2-6 Monitoring Encoding (Project Monitor Screen)

The Project Monitor screen appears when you select Entry from the Encode menu, or when you click the Project Monitor button in the Tool block of the Launcher screen.
The encoding progress status appears on the Project Monitor screen.



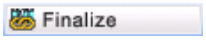
❶ Menu bar

Menu bar	Command	Description
File	Close	Exit Project Monitor.
Option	Auto start	Select whether to start encoding automatically when a project is registered.
View	Toolbar	Select to display or hide the toolbar.
	Statusbar	Select to display or hide the status bar.
Window	Cascade	Cascade windows for display.
	Tile Vertical	Tile windows vertically for display.
	Tile Horizontal	Tile windows horizontally for display.
Help	Version	Display the version, copyright, and other information about this software.

❷ Toolbar

Encode

Display the encoding window.



Display the Finalize window.

Display the Preprocess window.

❸ Project list

Registered projects appear in the list.
The project status is indicated by the following icons.

: Target of execution
: Not target of execution
: Execution in progress
: Normal termination
: Abnormal termination or cancellation

Selected Data / All Data

Select whether to start processing the selected project only, or all projects.

[Delete] button

Delete the selected project.

[Disable] / [Enable] button

Disable or enable the selected project as target for execution.

[Reset] button

Reset the status of a project and specify it as target of execution.

▲ / ▼ button

Move the project up or down.

[Start] button

Start the process.

Project list

Display registered projects in a list.
Contents Name: Content name
Order: Registered content of process
Status: Project status
Registration: Registration date and time
Start: Process start date and time
End: Process end date and time
Processing: Time elapsed in process
Remain: Estimated remaining time of process
Description: Details of process content

❹ Log display area

Display the execution log of process.

❺ Information display area

Display information on the selected project.

6-3 Customization Review

You can decode video that has been encoded before, and review it.
Also, you can use the customization function to improve the picture quality of the necessary segments. Then, you can reencode a minimum interval containing the segments specified for customization.

1 From the Project list of Project Manager, select a project you want to review, then click the [Open] button.

The Customize Review window appears.

2 Use the control buttons in the review display area to replay the encoded project.

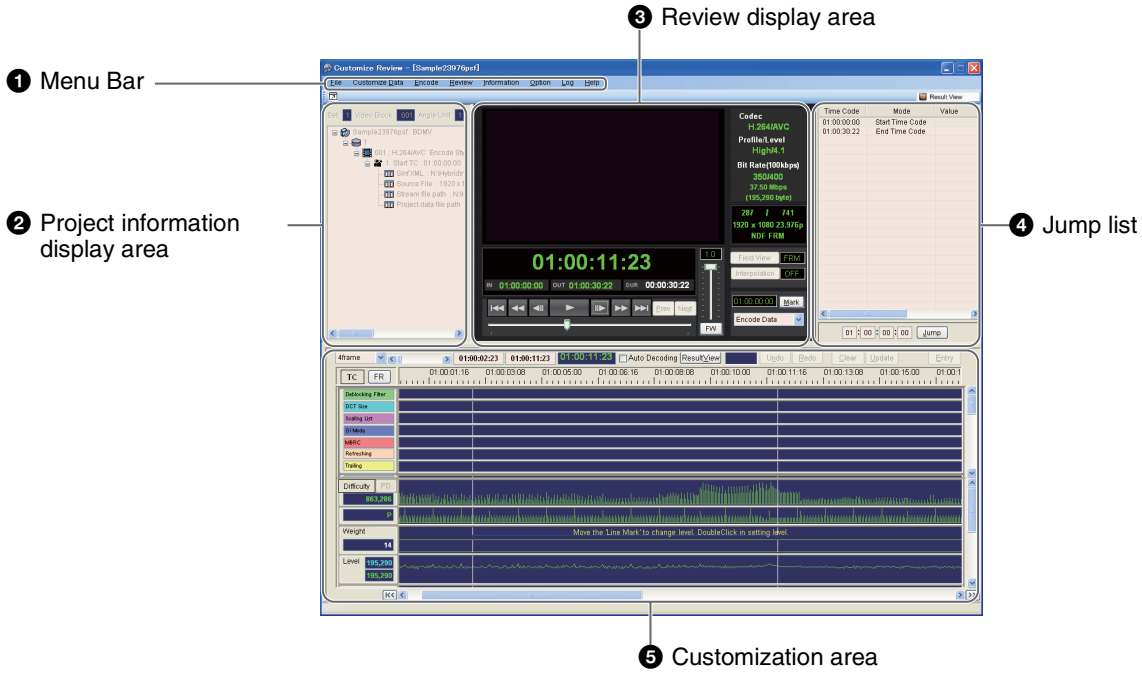
For details, refer to "6-3-2 Reviewing a Project," page 65.

3 To perform customization, operate the customization area.

For details, refer to "6-3-3 Customization Function," page 66.

When you select a set in the project information display area for projects that are encoded in Roll Encode Mode, you can review a stream file that combines all the video blocks within the set into one block.
In this case, only the review function is enabled during review, and you cannot display or configure customization information. Select any item other than a set, to return to normal mode.

6-3-1 Customize Review Window



❶ Menu bar

Menu bar	Command	Description
File	Close	Close the Customize Review window.
Customize Data	Latest File	Replace with the latest customization information file.
	Original File	Replace with the default customization information file.
	Import File	Import a customization information file that has been exported.
	Export File	Export the current customization information to a file.
Encode	Entry	Register reencoding for the currently opened project.
Encode	Retake Setting	After encoding, replace a section of the source in the project currently opened and reencode. *For details, refer to "6-3-7 Reencoding," page 83.*
Review	Force SDI Field Mode	Specify the Force SDI Field Mode.SD source is output with the top field first, and HD source is output with the bottom field first.
	Force Secondary Video Mode	Secondary video of SD 720 × 480 is forced to output at 29.97P.
	Renderer	Output review pictures to the monitor connected to the video output board of the control PC. Setting: Specify the Renderer combination. Reset: Reset the setting.
Information	Auto Customize	Open the Auto Customize window.
	Check Point	Open the Check Point window.
Option	Jump List Setting	Display the Jump List Setting screen and specify parameters for display in Jump List.
	Auto Range Adjust	If the specified customization range is larger than the display range, the display range is changed automatically.
	Move to Current Time Line	During review, the time line of the customization area is moved automatically according to the display.
Log	Encode Log	Display the encoding results.

Menu bar	Command	Description
Help	Version	Display the version, copyright, and other information about this software.

button

Maximize the Customize Review window.
To undo, press the Alt + F4 keys or Alt + Esc keys.

Result View **button**

Display the Result View window.

❷ Project information display area

Display project information.

❸ Review display area

Decode project, then display the review picture.

For details, refer to "6-3-2 Reviewing a Project," page 65.

❹ Jump list

Display Jump List of the project.
Select a jump destination from the list. When you double-click it, it moves to the selected timecode.

For details, refer to "6-3-7 Reencoding," page 83.

❺ Customization area

Perform customization of the project.

For details, refer to "6-3-4 Customization Screen," page 68.

6-3-2 Reviewing a Project

Review display area

❶ Review area

Display the decoded image.

Notes

- The picture quality of the decoded image displayed on the PC depends on the graphics board.
- When displaying SD data, one extra frame may be displayed.

❷ Review information display area

Track bar

Indicate the position displayed on the current screen.
When you rotate the mouse wheel on the track bar, you can step a frame forward or backward.

Selecting file type

Select file type for review display. You can display encoded bitstream file or source file.

Note

When using a Blackmagic Design Intensity card, the source file may not display depending on the format.

Operation buttons

⏮	Move to the beginning of the source.
◀◀	Rewind at 2× speed.
◀II	Step a frame at the reverse direction.
▶	Replay or pause.
II▶	Step a frame in the normal direction.
▶▶	Fast forward at 2× speed.
▶▶⏭	Move to the end of the source.
Prev	Move to the previous access point.
Next	Move to the next access point.

Speed adjustment slide bar

Adjust the playback speed (0.1× speed to same speed).
Sliding the switch down decreases the playback speed.

FW / BW **button**

Switch the playback direction. The playback direction appears on the button.
FW: Replay in the normal direction.
BW: Replay in the reverse direction.

Field View **button**

Switch the field display mode.

The field display mode is a mode that enables you to replay frame in units of field during frame playback or pause of interlace source.
If normal playback is performed, the field display mode becomes OFF (frame display).
FRM: Frame display (field display mode OFF)
TOP: Top field first
BTM: Bottom field first

Interpolation button
Enable or disable interpolation. Interpolation is valid only when converting from 1440 × 1080 to 1920 × 1080.

Mark button
Register the currently displayed timecode to the jump list.

❸ Bit occurrence rate display area
Display the bit rate and bit occurrence rate.

Note
Frame data rates in bit/s are displayed for the bit rate.

6-3-3 Customization Function

Common functions

Specifying picture type (Picture Type)
You can specify I picture and IDR picture (H.264/AVC only) as the picture type. Using this function also enables chapter specification.

Specifying the rate reassignment calculation range (CS Disable)
You can specify ranges in advance for which automatic rate adjustment will be disabled. If you perform rate adjustment (Weight Info) while the size for Reserve Space is set to 0, the rate is automatically adjusted to keep the entire target size at a certain level. If there is an area for which you do not want to change the rate, specify CS Disable in advance to exclude this area from the range of automatic rate adjustment.
As the CS Disable setting takes highest priority, other customizations will be disabled in ranges for which CS Disable is configured.

Specifying the progressive mode (Progressive)
When encoding interlace sources, you can specify still images and scenes with no motion to be encoded in progressive mode.

Setting scene change detection (Scene Change)
When there is a high amount of change in brightness in a scene from an animated source, for example, a large number of I pictures or IDR pictures (H.264/AVC only) may be inserted due to the frequent scene changes detected. This may result in a decrease in picture quality. To improve the picture quality in this case, specify the range that contains excessive amounts of scene change and disable scene change detection for it.

Setting the low pass filter (Low Pass Filter)
Block noise may occur when you encode sources that include grain noise or high-frequency components at bit rates of 10 Mbps or below. In this case, you can encode while removing these high-frequency components by applying this filter, and thereby reduce block noise.

Setting the noise removal filter (De-Noise Filter)
Apply this filter to remove noise while encoding sources that include camera noise.

Setting the banding removal filter (De-Band Filter)
Apply this filter to reduce banding while encoding sources in which banding occurs.

For H.264/AVC

Changing deblocking filter (Deblocking Filter)
The deblocking filter is used to reduce the block distortion that occurs when pictures are encoded.
You can change the value of the deblocking filter for each picture.

Changing the DCT size selection method (DCT size)
You can change the DCT size selection method for each picture (only when encoding has been done using High Profile).

Changing the scaling list (Scaling List)
You can change the scaling list for each picture.
Select one from the several scaling lists that have been registered as preset values.
Also, you can use user data that has been edited.

Changing the GI mode (Gradation Improvement Mode)
You can change the ON/OFF of Gradation Improvement for each picture.

Changing MBRC (Macro Block Rate Control)
You can change the ON/OFF of MBRC for each picture.

Changing Refreshing Suppress

You can change the ON/OFF of Refreshing Suppress for each picture.

Changing Trailing Suppress

You can change the ON/OFF of Trailing Suppress for each picture.

Specifying the weight control (Weight Adjust)

You can add weight to a specified range for bit rate assignment, then reencode. This enables you to change or adjust the bit rate assignment.

Notes

- For 1 PASS CBR Angle Unit, the customization functions cannot be used.
- For 1 PASS VBR Angle Unit, all customization functions except Weight adjustment can be used.
- For Multi Angle Angle Unit, the function to specify picture type cannot be used.

For MPEG-2

Adjusting the bit rate assignment weight (Weight Adjust)

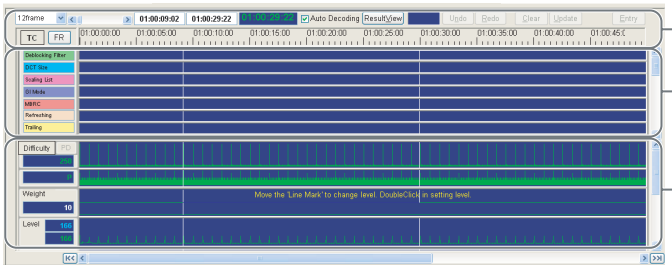
When performing bit rate reassignment, you can add weight to a particular range, and adjust the bit rate for each frame of that range. With 1 being the base level of weight coefficient (Rate Adjust: 0.1 to 10), more bit rate is assigned if the value is larger than the base level, or less bit rate is assigned if the value is smaller than the base level. Even if you try to increase the bit rate, if there are restrictions on VBV buffer or maximum bit rate, the bit rate may not be raised beyond a certain value. Also, because the number of bits assigned to the entire video is a constant value, note that raising the bit rate of a certain range means dropping the bit rate of other areas.

If you select Keep Rate Mode, encoding will be performed at fixed rate.

Adjusting QMatrix (QMatrix)

By increasing QMatrix, you can drop the high range component of images with high level of encoding difficulty where bit rate control is difficult, so that bit rate control becomes easy.

6-3-4 Customization Screen



❶ Customization control area

Timecode scale

Select a display unit for graduations in the graph display area.

Graduation width

Adjust the display width of one graduation.
Moving it to the left reduces the width while moving it to the right increases the width.

Start

Text box for input or display of the start position

End

Text box for input or display of the end position

Auto Decoding

When this check box is selected, the image at the current position appears automatically.

Result View button

Register the selected range as a clip for Result View.
When registration is finished, the clip is added to the clip list in the Result View window. Registration may take time to finish.

Undo button/ Redo button

Use these two buttons to cancel the previous operation, or cancel the previous Undo operation.
Up to 30 customization changes can be saved, and the operation can be canceled before Update is performed.

Clear button

Cancel all customization changes and return to the state when the data is loaded.

Update button

Confirm the customization changes made.

TC button/ FR button (graduation display)

Specify whether to display using timecode or relative frame number.

Timecode or relative frame number is displayed in every 10 graduations.
Clicking the graduation displays the Mark setup/delete menu.

Add Mark: Set up a Mark (Customize) point.

Delete Mark: Delete all Mark (Customize) points that have been set up.

Shortcut keys

Shortcut key	Description
Home	Jump to Start
F3	Rewind
F1	Step Backward
Space or Ctrl + P	Play / Pause
F2	Step Forward
F4	Fast Forward
End	Jump to End
+	Increase the playback speed.
–	Decrease the playback speed.
Esc	Cancel the customization range.
Ctrl + D	Switch between Direction FW and BW.
Ctrl + Space	Set a mark.
Ctrl + T	Display the timecode.
Ctrl + F	Display the relative frame number.
Ctrl + C	Toggle the review display (Encode/Source).
Ctrl + L	Shift focus to the track bar in review display.
Ctrl + S	Shift focus to toggling the review display.
Alt + J	Jump
Alt + N	Undo
Alt + R	Redo
Alt + C	Clear
Alt + U	Update
Alt + E	Entry
Alt + P	Prev (Move to the previous access point.)
Alt + X	Next (Move to the next access point.)
Ctrl + →	Move to the next frame.

Shortcut key	Description
Shift + →	Move forward 1 sec.
Alt + →	Move forward 10 sec.
Ctrl + Shift + →	Move forward 1 min.
Ctrl + ←	Move to the previous frame.
Shift + ←	Move back 1 sec.
Alt + ←	Move back 10 sec.
Ctrl + Shift + ←	Move back 1 min.
Ctrl + I	Set the start point as the timecode for the line cursor.
Ctrl + O	Set the end point as the timecode for the line cursor.

❷ Customization setting area

Display or specify information for encoding parameters.

Information display

Display the customization range applied to the encoding parameters. Also, pointing the mouse to a parameter's customization range displays the value of the setting.

- For H.264/AVC
  Deblocking Filter: Green
  DCT Size: Aqua
  Scaling List: Pink
  GI Mode (Gradation Improvement Mode): Purple
  MBRC (Macro Brock Rate Control): Red
  Refreshing: Orange
  Trailing: Yellow
  Low Pass Filter: Gray (light)
  De-Noise Filter: Gray (medium)
  De-Band Filter: Gray (dark)
- For MPEG-2
  QMatrix: Green
  Low Pass Filter: Gray (light)
  De-Noise Filter: Gray (medium)
  De-Band Filter: Gray (dark)

Access point

Display frame specified in access point in a yellow line.

CS Disable (customization prohibited)

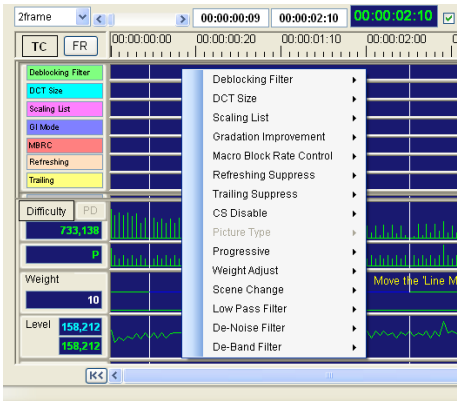
Display range of prohibited customization in red line, on the green line of Encode area.

Picture Type

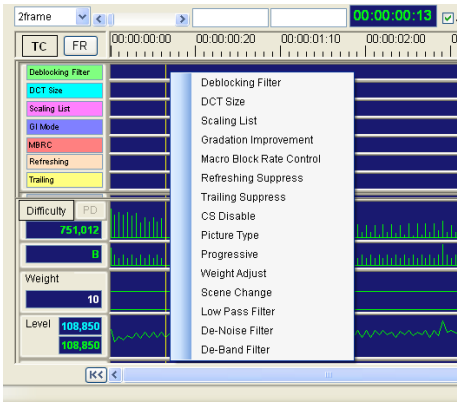
Display the following line on the scene with picture type changed.
If IDR picture is changed: Orange line
If I picture is changed: Blue line

New setting

After a range is specified, clicking the specified range displays a menu. Select a parameter you want to set up, then perform the setting operation.



If a range is not specified, right-clicking it displays a menu.



From the menu, select a parameter and the customization setting window appears.

Change or delete

If you click the specified range, the customization setting window appears so that you can change or delete parameters.

❸ Customization information area

Difficulty/PD

The graph indicates the encoding difficulty of pictures in the entire title.
During PD selection, a graph appears to show the Inverse 2-3 Pull Down pattern.

How to read the graph during Pulldown Pattern display

Yellow line: Means Interlace (pattern could not be detected).

Green line: Has the following meanings depending on the length of the line.

AA short
BB ↕
BC
DD long
CD (dummy frame)

White line: The type of the pattern is shown in the left column of the graph.

Weight Adjust

This is a display box for changing or adjusting the bit rate assignment. A green graph appears and you can change the range from 1 to 20.
The default weight is 10 indicating 100%. If you use a value larger than 10, you can assign more bit rate to the specified range. If you use a value smaller than 10, the bit rate assigned becomes smaller.

If you select Auto Customize, the Auto Customize function is executed when reencoding is performed. The range appears in blue.
If you select Upper Limit, the specified range is encoded with an upper limit. The range appears in purple.
If you select Fade In or Fade Out, the weight is gradually assigned according to the fade in or fade out. The Fade In range appears in orange, and the Fade Out range appears in pink.

Hint

Because the minimum unit for reencoding is RAP-IDR interval, it is more effective to set the adjustment range to RAP-IDR interval and then adjust the weight.

Note

It can be selected only when encoding is done using 2 Pass VBR.

Level (data size display area)

Data Size (result) and Initial Data Size (initial assignment) (conversion to bytes) appear as line graphs.
Data Size: Green
Initial Data Size: Aqua

Auto Adjust QP

QP (Quantize Parameter) displays the picture that has been adjusted automatically.

Hint

While there are cases where the picture is adjusted using special conditions, it does not appear in normal encoding.

High Distortion

Display picture with high distortion rate in the encoding result.

Low Occupancy

Display picture where there is no leeway in the occupancy of the buffer.

DBF Alpha

Display the value of the α coefficient of the deblocking filter for each picture.

DBF Beta

Display the value of the ß coefficient of the deblocking filter for each picture.

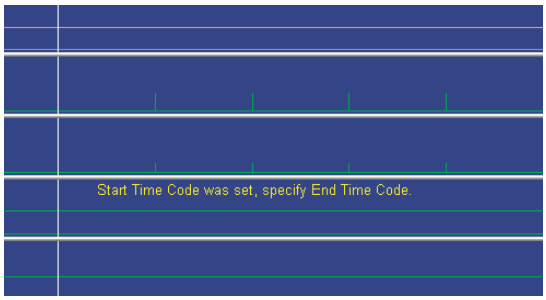
6-3-5 Performing Customization (for H.264/AVC)

To specify a range for customization

Using the mouse

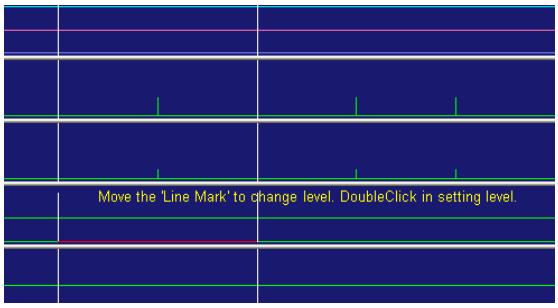
1 Click the position that you want to set as the start point.

The line cursor appears at the start point.



2 Click the position that you want to set as the end point.

The line cursor appears at the end point.



To cancel the specified point

Right-click or press the Escape key.

Notes

- The following restrictions apply when you specify a customization range.
  - For the following settings, the range start point and end point must be RAP-IDR picture.
    - Refreshing Suppress
    - Trailing Suppress
    - CS Disable
    - Upper Limit
    - Retake
    - User Define of Scaling List
    - Scene Change OFF
  - For 2-3 pulldown titles, the range start point and end point of dummy frame cannot be specified.
- To specify the last frame displayed as the end point, perform the procedure described in the following section “Using keyboard.”
- If RAP-IDR exists in the ranges specified by Refreshing Suppress and Trailing Suppress, customization items (deblocking filter, DCT Size, etc.) that cross over to RAP-IDR cannot be set up.

Using the keyboard

1 Click the Start text box

The Time Code window appears.

2 Enter the start point’s timecode using the keyboard, or change the value using the ↑ and ↓ keys or the wheel of a wheel mouse, then click the OK button.

The Time Code window appears.

3 Enter the end point’s timecode using the keyboard, or change the value using the ↑ and ↓ keys or the wheel of a wheel mouse, then click the OK button.

To change the deblocking filter (Deblocking Filter)

1 Specify a range to use for changing the deblocking filter.

2 In the Setting area, click within the specified range.

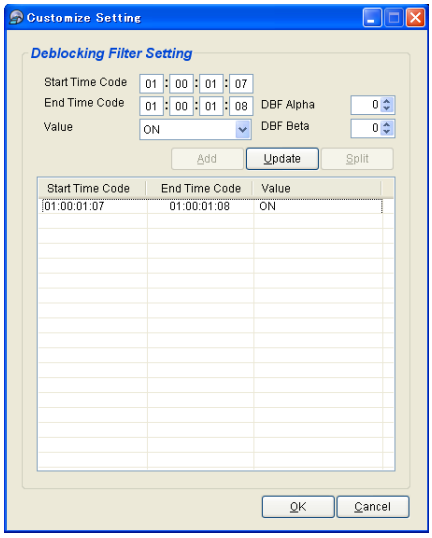
A menu appears.

3 From the menu, select Deblocking Filter.

ON: Use the deblocking filter. When you click the Setting area, the Deblocking Filter Setting window appears so that you can specify Deblocking Alpha and Deblocking Beta.
OFF: Do not use the deblocking filter.

The changed range appears in the green color.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Deblocking Filter, the customization setting window appears.



Start Time Code

Specify a start point to use for customization.

End Time Code

Specify an end point to use for customization.

Value
Specify whether to use the deblocking filter. You can select ON (use) or OFF (not to use).

DBF Alpha
You can specify the alpha coefficient offset of a deblocking filter, within a range from –6 to +6.

DBF Beta
You can specify the beta coefficient offset of a deblocking filter, within a range from –6 to +6.

Add button
Apply the deblocking filter to the specified range.

Update button
Update the deblocking filter information if you have edited the existing deblocking filter information.

Split button
Split the existing range using the specified timecode.

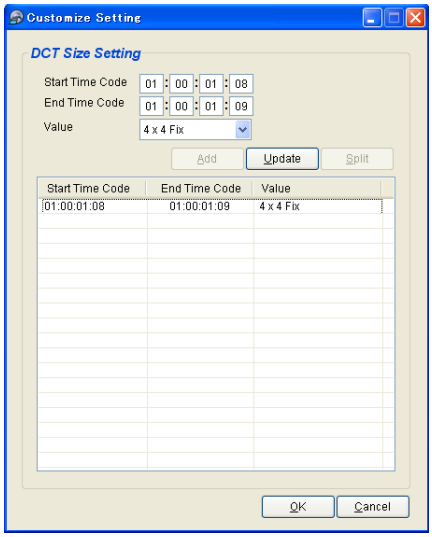
To change the DCT size selection method (DCT size)

1. Specify a range to use for changing the DCT size selection method.
2. In the Setting area, click within the specified range.

   A menu appears.
3. From the menu, select DCT Size.
4. Select a DCT size.

   The changed range appears in the aqua color.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select DCT size, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Select a DCT size.

Add button
Apply the DCT size to the specified range.

Update button
Update the DCT size information if you have edited the existing DCT size information.

Split button
Split the existing range using the specified timecode.

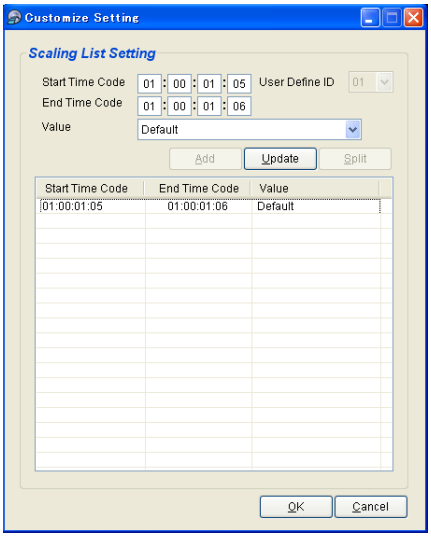
To change the scaling list (Scaling List)

1. Specify a range to use for changing the scaling list.
2. In the Setting area, click within the specified range.

   A menu appears.
3. From the menu, select Scaling List.
4. Select a scaling list.

   The changed range appears in the pink color.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Scaling List, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Select a scaling list.

Scaling List ID
Select Scaling List ID when User Define is selected in Value.

Add button
Apply the scaling list to the specified range.

Update button
Update the scaling list information if you have edited the existing scaling list information.

Split button
Split the existing range using the specified timecode.

To change the GI mode (Gradation Improvement Mode)

1 Specify a range to use for changing the G1 mode.

2 In the Setting area, click within the specified range.

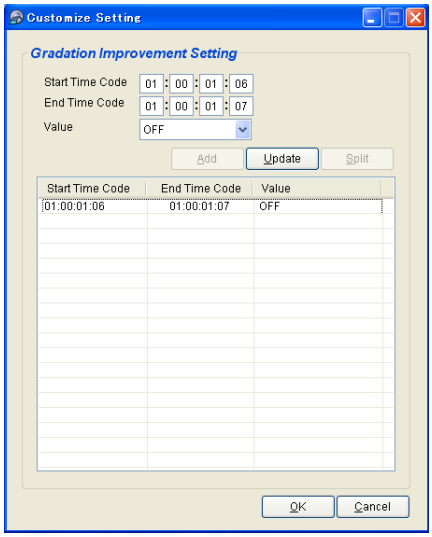
A menu appears.

3 From the menu, select Gradation Improvement.

ON: Use GI mode.
OFF: Do not use GI mode.

The changed range appears in the purple color.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Gradation Improvement, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Specify whether to use the GI mode. You can select ON (use) or OFF (not to use).

Add button
Apply the GI mode to the specified range.

Update button
Update the GI mode information if you have edited the existing GI mode information.

Split button
Split the existing range using the specified timecode.

Changing Macro Block Rate Control

1 Specify a range to change Macro Block Rate Control.

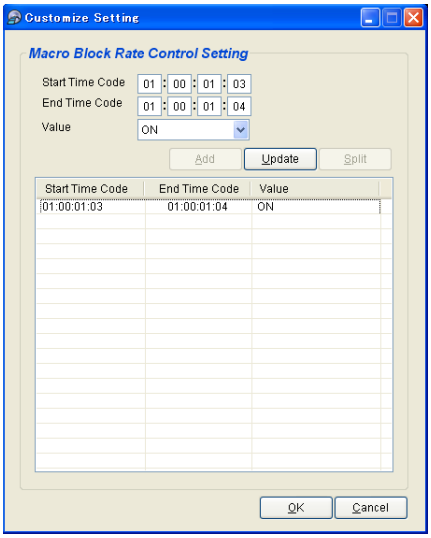
2 In the Setting area, click within the specified range.

A menu appears.

3 From the menu, select Macro Block Rate Control.

ON: Use Macro Block Rate Control.
OFF: Do not use Macro Block Rate Control.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Macro Block Rate Control, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Select whether to use Macro Block Rate Control (ON) or not (OFF).

Add button
Apply Macro Block Rate Control to the specified range.

Update button
Update the Macro Block Rate Control information when an existing Macro Block Rate Control is edited.

Split button
Split the existing range using the specified timecode.

Changing Refresh Suppress

1 Specify a range to change Refresh Suppress.

Only RAP-IDR picture can be specified in the start point and end point.

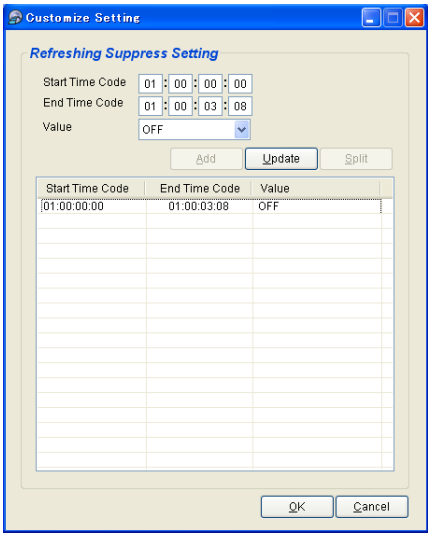
2 In the Setting area, click within the specified range.

A menu appears.

3 From the menu, select Refresh Suppress.

ON: Use Refresh Suppress.
OFF: Do not use Refresh Suppress.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Refresh Suppress, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.
Only RAP-IDR picture can be specified.

End Time Code
Specify an end point to use for customization.
Only RAP-IDR picture can be specified.

Value
Select whether to use Refresh Suppress (ON) or not (OFF).

Add button
Apply Refresh Suppress to the specified range.

Update button
Update the Refresh Suppress information when an existing Refresh Suppress is edited.

Split button
Split the existing range using the specified timecode.
Only RAP-IDR picture can be specified.

Changing Trailing Suppress

1 Specify a range to change Trailing Suppress.

Only RAP-IDR picture can be specified in the start point and end point.

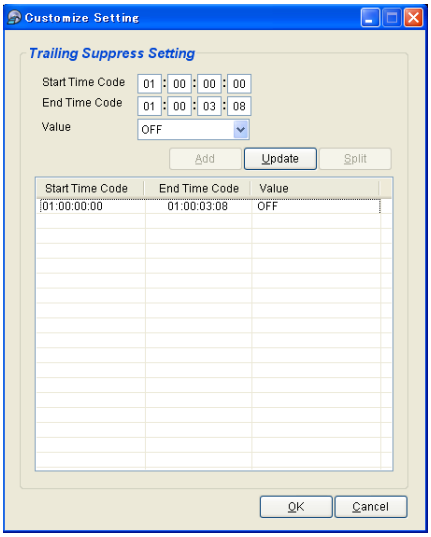
2 In the Setting area, click within the specified range.

A menu appears.

3 From the menu, select Trailing Suppress.

Animation: Use the algorithm optimized for animation.
Normal: Use the algorithm optimized for general titles.
OFF: Do not use Trailing Suppress.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Trailing Suppress, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.
Only RAP-IDR picture can be specified.

End Time Code
Specify an end point to use for customization.
Only RAP-IDR picture can be specified.

Value
Select to use the animation algorithm of Trailing Suppress (Animation), the algorithm for general titles (Normal), or do not use it (OFF).

Add button
Apply Trailing Suppress to the specified range.

Update button
Update the Trailing Suppress information when an existing Trailing Suppress is edited.

Split button
Split the existing range using the specified timecode.
Only RAP-IDR picture can be specified.

To specify the bit rate reassignment calculation range (CS Disable)

1 Specify the range that you do not want to use the AutoCustomize function to perform automatic bit rate adjustment.

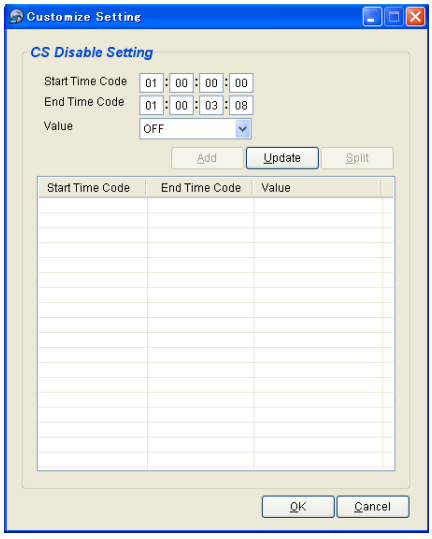
2 In the Setting area, click within the specified range.

A menu appears.

3 From the menu, select CS Disable, then click ON.

A red line appears in the Weight area and the selected range is excluded from rate adjustment.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select CS Disable, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Specify whether to use CS Disable. You can select ON (use) or OFF (not to use).

Add button
Apply CS Disable to the specified range.

Update button
Update the CS Disable information if you have edited the existing CS Disable information.

Split button
Split the existing range using the specified timecode.

To specify a picture type (Picture Type)

1 Specify a timecode for changing the picture type.

Hint

Specify the same timecode for both the start point and end point.

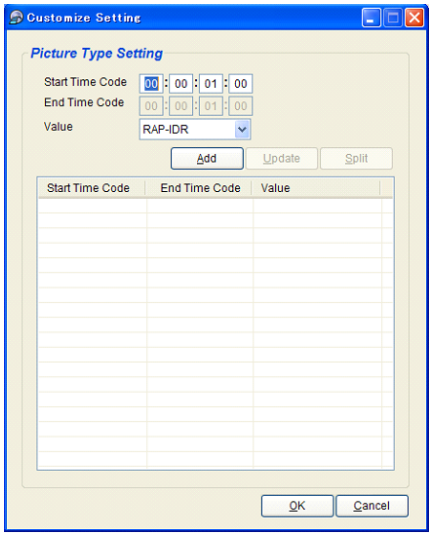
2 Click the Setting area.

A menu appears.

3 From the menu, select IDR or I.

An orange (IDR) or blue (I) line appears in the Setting area.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Picture Type, the customization setting window appears.



Start Time Code
Specify the timecode of the point where you want to change the picture type.

Value
Select a picture type.

Add button
Apply the picture type to the specified range.

Update button
Update the picture type information if you have edited the existing picture type information.

Specifying the progressive mode (Progressive)

1 Specify a range for the progressive mode.

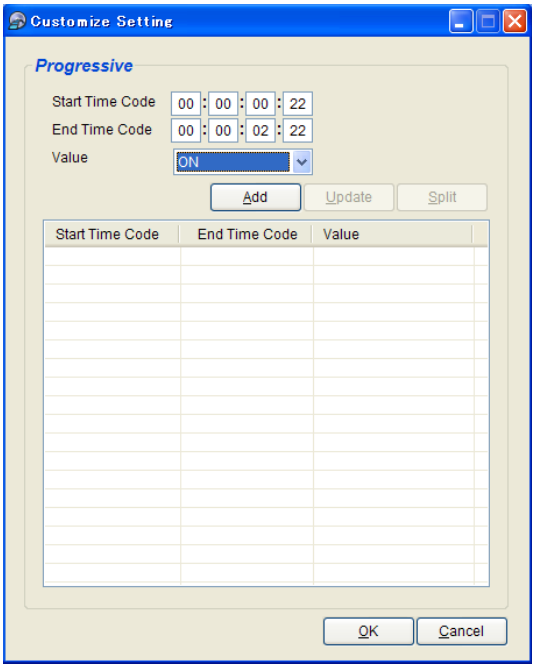
2 In the Setting area, click within the specified range.

A menu appears.

3 From the menu, select Progressive.

ON: Use the progressive mode.
OFF: Do not use the progressive mode.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Progressive, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.
Only RAP-IDR picture can be specified.

End Time Code
Specify an end point to use for customization.
Only RAP-IDR picture can be specified.

Value
Select whether to use progressive mode (ON/OFF).

Add button
Apply progressive mode to the specified range.

Update button
Updates progressive mode information when existing information is edited.

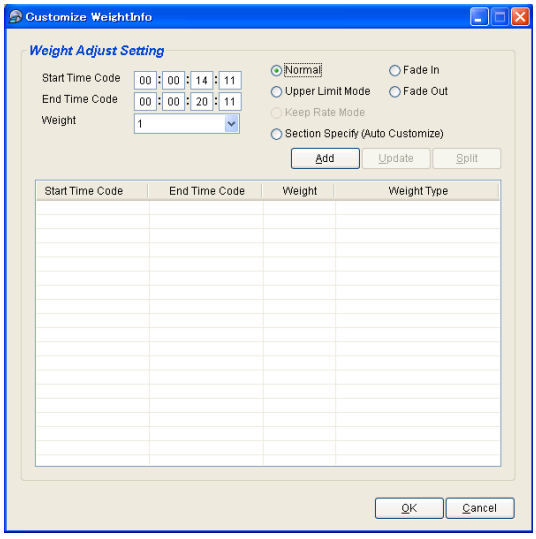
To apply weight control (Weight Adjust)

1 Specify a range for adjusting the weight.

2 In the Weight area, use the mouse to drag the red line in the specified range up or down to change its value.

3 Double-click to accept the value.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Weight Adjust, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Weight
Select a weight. (Available during Normal)

Normal
Apply the selected weight.

Upper Limit Mode
Perform encoding on the specified range, using the 1 PASS CBR mode (fixed bit rate).
The bit rate is the Max Bit Rate set in the Size tab of Project Manager.
The range customized in Upper Limit Mode cannot be customized further.

Section Specify (Auto Customize)
Perform automatic customization on the specified range.

Fade In
Gradually assign weight according to the fade in of the specified range. In addition, the first frame of the specified range becomes an IDR picture.

Fade Out
Gradually assign weight according to the fade out of the specified range.

Add button
Apply the weight to the specified range.

Update button
Update the weight information if you have edited the existing weight information.

Split button
Split the existing range using the specified timecode.

Changing Scene Change Detection Settings

1 Specify the range for which you want to disable scene change detection.

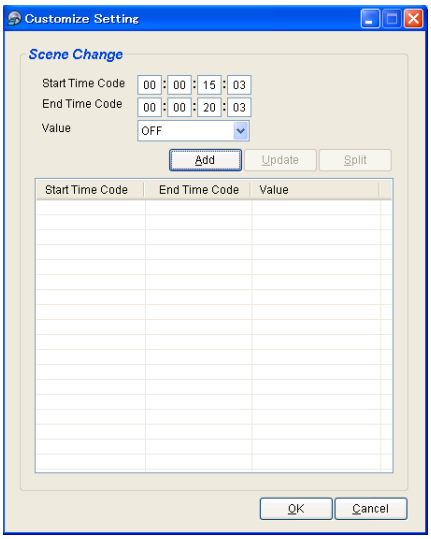
2 In the Setting area, click within the specified range.

A menu appears.

3 From the menu, select Scene Change > OFF.

The selected range appears in gray in the Weight area.

If you right-click the Setting area without specifying a range, a menu appears.
If you select Scene Change > OFF from the menu, the Customize Setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Set scene change detection to OFF.

Note

This setting can only be configured if encoding was performed after setting scene change detection ON in the encoding parameters. Once you select OFF for this setting, you cannot set it to ON again.

Add button
Disable scene change detection for the specified range.

To apply the low pass filter (Low Pass Filter)

1 Specify the range to which you want to apply the low pass filter.

2 On the Filter line in the Setting area, click within the specified range.

A menu appears.

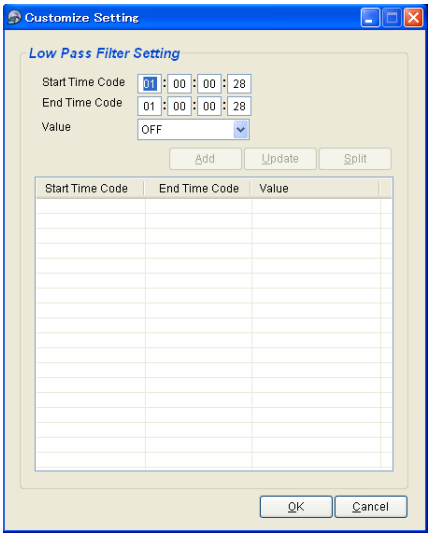
3 From the menu, select the filter strength.

Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

Hint

The CG Mode filter is effective for CG animation sources.

If you right-click the Filter line in the Setting area without specifying a range, a menu appears. If you select Low Pass Filter from the menu, the Customize Setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Select a strength for the low pass filter.

Add button
Apply the low pass filter to the specified range.

Update button
Update low pass filter information when existing information is edited.

Split button
Split the existing range using the specified timecode.

To apply the noise removal filter (De-Noise Filter)

1 Specify the range to which you want to apply the de-noise filter.

2 On the Filter line in the Setting area, click within the specified range.

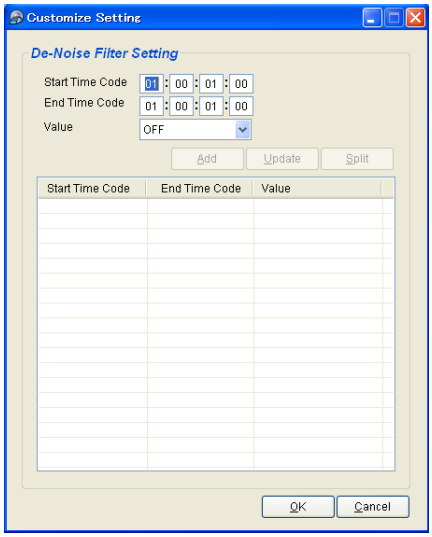
A menu appears.

3 From the menu, select the filter strength.

Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

Hint
The CG Mode filter is effective for CG animation sources.

If you right-click the Filter line in the Setting area without specifying a range, a menu appears. If you select De-Noise Filter from the menu, the Customize Setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Select a strength for the de-noise filter.

Add button
Apply the de-noise filter to the specified range.

Update button
Update de-noise filter information when existing information is edited.

Split button
Split the existing range using the specified timecode.

To apply the banding removal filter (De-Band Filter)

1 Specify the range to which you want to apply the de-band filter.

2 On the Filter line in the Setting area, click within the specified range.

A menu appears.

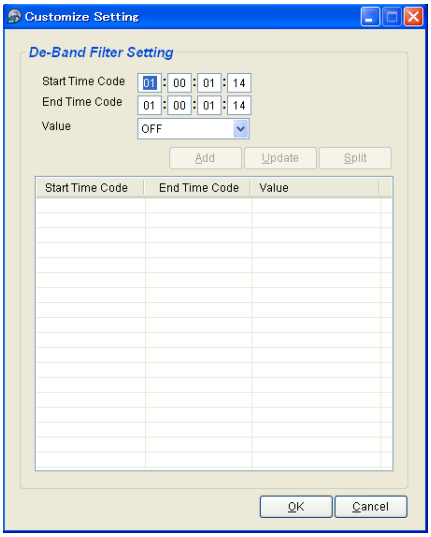
3 From the menu, select the filter strength.

Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
Weak: Apply a filter for sources with small amounts of banding.
Strong: Apply a filter for sources with large amounts of banding.

Hint

The CG Mode filter is effective for CG animation sources.

If you right-click the Filter line in the Setting area without specifying a range, a menu appears. If you select De-Band Filter from the menu, the Customize Setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Select a strength for the de-band filter.

Add button
Apply the de-band filter to the specified range.

Update button
Update de-band filter information when existing information is edited.

Split button
Split the existing range using the specified timecode.

6-3-6 Performing Customization (for MPEG-2)

The following is an example using Customize Type to make change.

If block noise or noise close to it occurs

Increase the value of Rate Adjust. The standard value is 10.

If picture quality in some areas deteriorates significantly during scene change

At S-Change, specify the picture at scene change and change it to I picture.

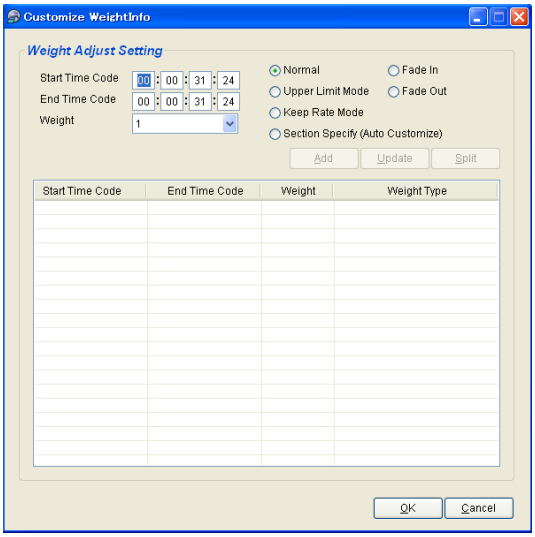
To apply weight control (Weight Adjust)

1 Specify a range for adjusting the weight.

2 In the Weight area, use the mouse to drag the red line in the specified range up or down to change its value.

3 Double-click to accept the value.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Weight Adjust, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Weight
Select a weight. (Available during Normal)

Normal
Apply the selected weight.

Upper Limit Mode
Perform encoding on the specified range, using 1 PASS CBR mode (fixed bit rate).
The bit rate is the Max Bit Rate set in the Size tab of Project Manager.
The range customized in Upper Limit Mode cannot be customized further.

Keep Rate Mode
Perform encoding on the specified range while maintaining a rate that is close to the Max Bit Rate set in the Size tab of Project manager.

Section Specify (Auto Customize)
Perform automatic customization on the specified range.

Fade In
Gradually assign weight according to the fade in of the specified range. In addition, the first frame of the specified range becomes an IDR picture.

Fade Out
Gradually assign weight according to the fade out of the specified range.

Add button
Apply the weight to the specified range.

Update button
Update the weight information if you have edited the existing weight information.

Split button
Split the existing range using the specified timecode.

To specify the bit rate reassignment calculation range (CS Disable)

1 Specify the range that you do not want to use the AutoCustomize function to perform automatic bit rate adjustment.

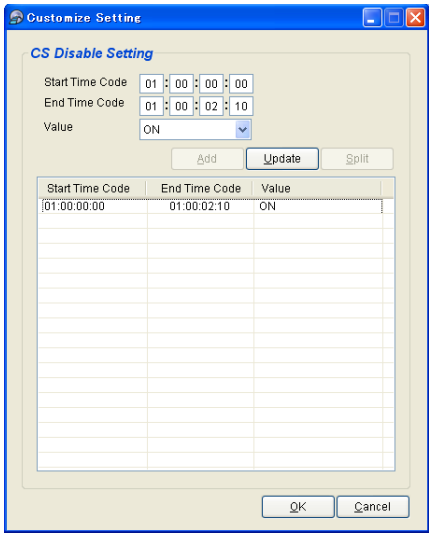
2 In the Setting area, click within the specified range.

A menu appears.

3 From the menu, select CS Disable, then click ON.

A red line appears in the Weight area and the selected range is excluded from rate adjustment.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select CS Disable, the customization setting window appears.



Start Time Code
Specify a start point to use for customization.

End Time Code
Specify an end point to use for customization.

Value
Specify whether to use CS Disable. You can select ON (use) or OFF (not to use).

Add button
Apply CS Disable to the specified range.

Update button
Update the CS Disable information if you have edited the existing CS Disable information.

Split button
Split the existing range using the specified timecode.

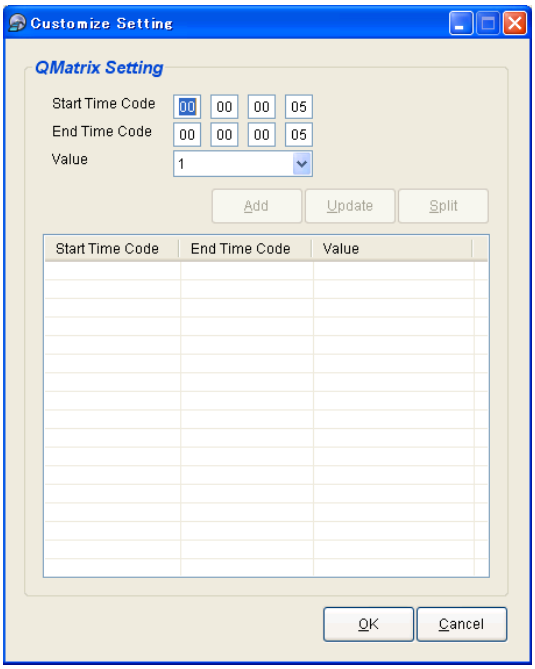
Adjusting QMatrix

1. Specify a range for adjusting QMatrix.
2. In the Setting area, click within the specified range.

   A menu appears.
3. From the menu, select QMatrix.
4. Select a value or defined name of QMatrix.

   The adjusted range appears in green.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select QMatrix, the customization setting window appears.



Start Time Code
Specify the start point of customization.

End Time Code
Specify the end point of customization.

Value
Select a value or defined name of QMatrix.

Add button
Apply QMatrix to the specified range.

Update button
When existing QMatrix information is modified, update the QMatrix information.

Split button
Split the existing range using the specified timecode.

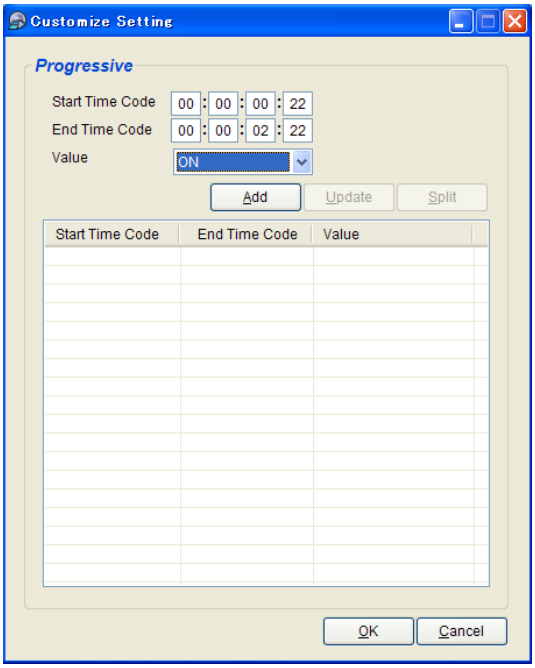
Specifying the progressive mode (Progressive)

1. Specify a range for the progressive mode.
2. In the Setting area, click within the specified range.

   A menu appears.
3. From the menu, select Progressive.

   ON: Use the progressive mode.
   OFF: Do not use the progressive mode.

If you right-click the Setting area without specifying a range, a menu appears.
From the menu, if you select Progressive, the customization setting window appears.



Start Time Code

Specify a start point to use for customization.
Only RAP-IDR picture can be specified.

End Time Code

Specify an end point to use for customization.
Only RAP-IDR picture can be specified.

Value

Select whether to use progressive mode (ON/OFF).

Add button

Apply progressive mode to the specified range.

Update button

Updates progressive mode information when existing information is edited.

Changing Scene Change Detection Settings

1 Specify the range for which you want to disable scene change detection.

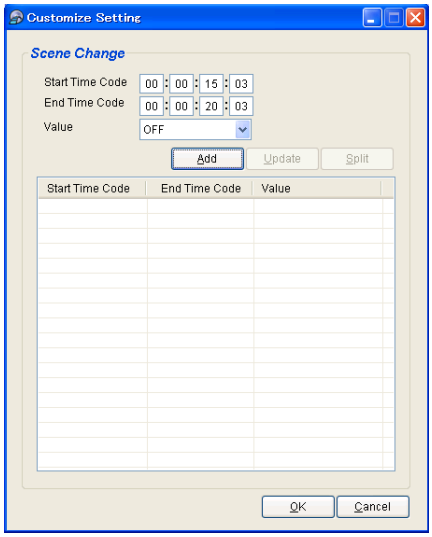
2 In the Setting area, click within the specified range.

A menu appears.

3 From the menu, select Scene Change > OFF.

The selected range appears in gray in the Weight area.

If you right-click the Setting area without specifying a range, a menu appears.
If you select Scene Change > OFF from the menu, the Customize Setting window appears.



Start Time Code

Specify a start point to use for customization.

End Time Code

Specify an end point to use for customization.

Value

Set scene change detection to OFF.

Note

This setting can only be configured if encoding was performed after setting scene change detection ON in the encoding parameters. Once you select OFF for this setting, you cannot set it to ON again.

Add button

Disable scene change detection for the specified range.

6-3-7 Reencoding

1 After customization is completed, click the Update button.

2 Click the Entry button.

The Project Monitor screen appears.

For details on the Project Monitor screen, refer to "6-2-6 Monitoring Encoding (Project Monitor Screen)," page 62.

3 Click the Start button.

Repeat this procedure until a satisfactory picture quality is obtained.

To abort encoding

From the Encode window, click the Abort button.

To undo the previous operation

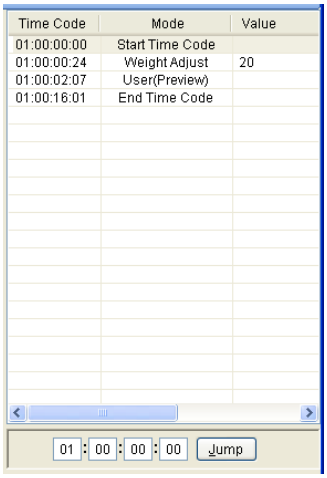
Click the Undo button.

To return the customized value back to its default

Click the Clear button.

To jump to the display position

You can use the following procedure to jump to the position of an encode unit displayed in the display box.



Double-click the position to jump to from the Jump List. The specified position appears in the display box.

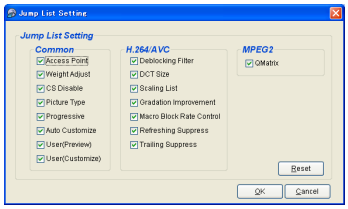
Note

In the Jump List window, you can delete only points registered using the Mark button during review or points registered using the Mark operation during customization.

To select items for displaying in the Jump List

1 In the Encode Manager window, select Jump List Setting from the Option menu.

The Jump List Setting window appears.



2 Select the check boxes of items you want to display in the Jump List.

3 Click the OK button.

The Jump List Setting window closes, and the Encode Manager window returns.

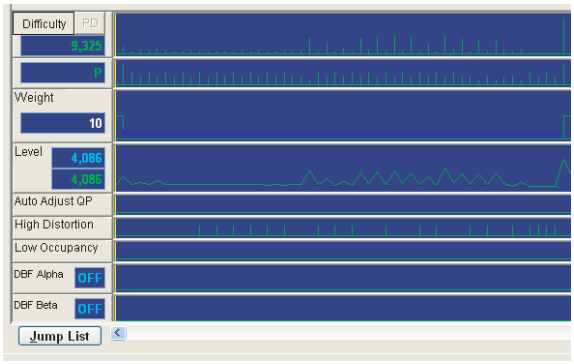
Data displayed in the Jump List

When Jump List is called, the following data appears.

Display of Jump List Setting	Mode display of Jump List	Display of Jump List Time
Access Point	Access Point	Access point specified in the Input Access Point window
Weight	Weight	StartTC customized at Weight on the Customize tab
CS Disable	CS Disable	StartTC customized at CS Disable on the Customize tab
Deblocking Filter	Deblocking Filter	StartTC customized at Deblocking Filter on the Customize tab
Scaling List	Scaling List	StartTC customized at Scaling List on the Customize tab
Gradation Improvement	Gradation Improvement	StartTC customized at Gradation Improvement on the Customize tab
Macro Block Rate Control	Macro Block Rate Control	StartTC customized using MBRC on the Customize tab
Refreshing Suppress	Refreshing Suppress	StartTC customized using Refreshing on the Customize tab
Trailing Suppress	Trailing Suppress	StartTC customized using Trailing on the Customize tab
Picture Type	Picture Type	StartTC customized at Picture Type on the Customize tab.
Auto Customize	Auto Customize	StartTC customized at Auto Customize on the Customize tab.
User (Preview)	User (Customize)	Timecodes for points where the Mark button is clicked during the review process.
User (Customize)	User (Customize)	Timecodes for points where the Mark button is clicked during the customization process.

6-3-8 About Auto Customize

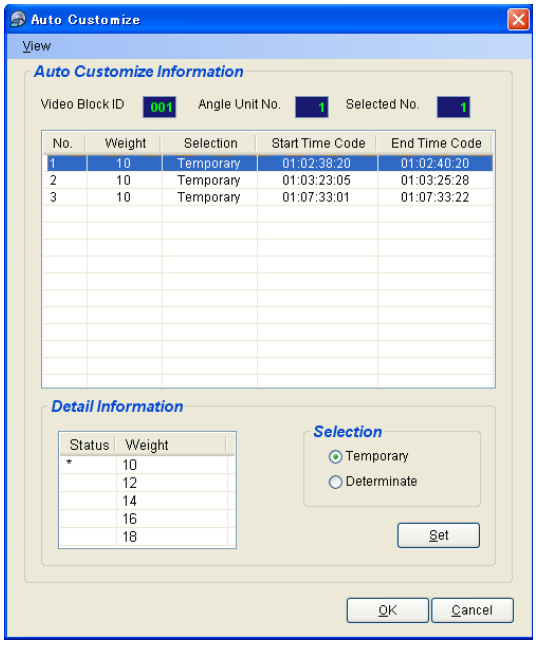
If you select the Auto Customize check box on the Encode tab, encoding is performed on the candidate with its weight changed according to the setting.
The range (where auto customization is determined to be necessary according to the setting and then executed) appears as a blue line in the Weight area.



Selecting a customization candidate

1 While in the Encode Manager window, select Auto Customize from the Information menu.

The Auto Customize window appears.



In the list of the Detail Information block, the weight candidates encoded using Auto Customize appear.

2 Select a customization candidate from the list of the Detail Information block.

3 In the Selection block, select Temporary or Determinate.

Temporary: Select it if you want to check the picture quality using the Review tab.
Determinate: Select it if you want to finalize the candidates.

4 Click the Set button.

5 Click the OK button.

Note

When you select Determinate in the Selection block and then close the Auto Customize window, the operation cannot be cancelled. Also, the finalized range is handled in the same way as normal weight adjustment.

6-3-9 Saving Check Point

You can save the customization state of a point in time as a check point. Furthermore, after adding customization, you can restore it back to the state of the saved check point.

Saving a check point

1 On the Customize Review window, select Check Point from the Information menu.

The Check Point dialog box appears.

2 In Mode, select Add and then click the Add button.

The customization state at the current time is saved as a check point.

In Mode, if you select Edit, you can edit the memo of the check point. After editing is finished, click the Update button.

Restoring check point state

1 In the Check Point dialog box, select Set from Mode.

2 From the check point list, select a check point to return to, and then click the Set button.

6-3-10 Performing Retake

When you edit a section of the source after encoding, you can perform encoding for just that edited range. The encoded stream will replace the previous stream and be combined after finalization.

Notes

- The range that can be replaced is RAP IDR interval.
- This function cannot be used for projects in which pulldown detection was performed.
- Simultaneous encoding for customize and retake is not supported.
- If customization settings have been configured for an interval specified for retake, the customization settings will be cleared.
- If you want to retake an interval for which progressive mode has been enabled, be sure to set progressive mode to OFF before configuring retake.

Determining the range to be replaced

1 Open the Customize Review window.

2 Find the RAP IDR picture immediately preceding the beginning of the edit point, and write down the timecode, as it will be used as the start point for replacement.

3 Find the RAP IDR picture immediately proceeding the end of the edit point, and write down the timecode, as it will be used as the end point for replacement.

4 Close the Customize Review window.

Capturing the source for the replacement range

1 Open the Capture Control window.

2 Capture the interval that contains the range to be replaced.

3 Close the Capture Control window after capture is finished.

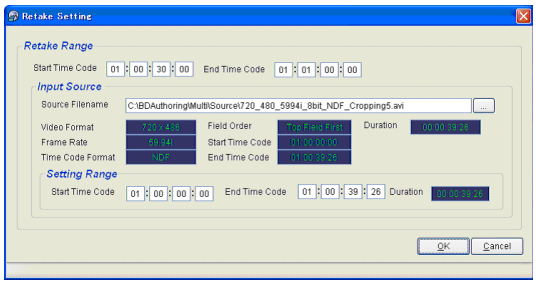
Note

Be sure to specify a capture interval that is longer than the range to be replaced.

Performing retake

1 Open the Customize Review window.

2 Select Retake Setting from the Encode menu to display the Retake Setting window.



3 In the Retake Range block, specify the start point for replacement in Start Time Code, and specify the end point for replacement in End Time Code.

4 Specify the newly captured source file in Source Filename.

5 In the Setting Range block, specify the start point for the source file in Start Time Code, and specify the end point for the source file in End Time Code.

6 Click the OK button to close the window.

Hint

Be sure that the lengths specified for Retake Range and Setting Range are the same.

Reencoding

1 Click the Update button.

2 Click the Entry button.

The Project Monitor screen opens.

For details on the Project Monitor screen, refer to "6-2-6 Monitoring Encoding (Project Monitor Screen)," page 62.

Hint

To perform retake after finalizing is finished, undo the finalize procedure.

Notes

- If the source file has been significantly modified, optimal picture quality may not be obtained.
- This feature is not compatible with fast two-pass encoding.

6-3-11 Finalizing a Project

Use the following procedure to finalize a project where encoding has been completed.

1 From the Project Manager, select a project where encoding has been completed.

2 From the Finalize menu, select Entry.

The Project Monitor screen appears.

For details on the Project Monitor screen, refer to "6-2-6 Monitoring Encoding (Project Monitor Screen)," page 62.

3 Click the Start button.

The Finalize operation starts.
The progress status of Finalize appears on the Project Monitor screen.

Undoing a finalize procedure

You can return projects that have been finalized to their original states.

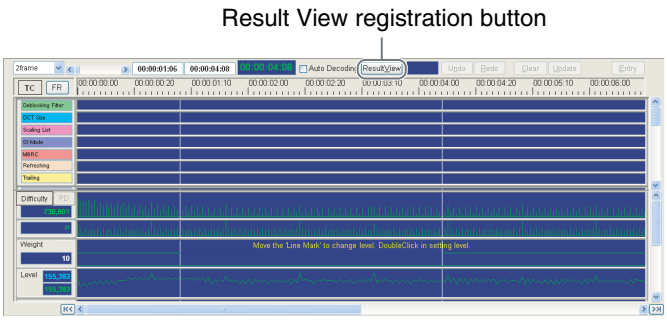
1 Select a project that has been finalized in Project Manager.

2 Right-click the mouse, and select Undo from the menu that appears.

6-4 Result View Registration

You can view and compare the source image and encode image in a split screen display.
You can view the comparison in the Result View window, but range specification for the compared clips is performed in the Customize screen.

6-4-1 Customize Screen



To specify a range for Result View registration

Using the mouse

For details, refer to "6-3-5 Performing Customization (for H.264/AVC)," page 70.

1 Click the position you want to set as the start point.

2 Click the position you want to set as the end point.

3 Click the Result View registration button.

To cancel the specified point

Right-click or press the Escape key.

Using the keyboard

1 Click the Start text box.

2 The Time Code window appears.

Enter the start point's timecode using the keyboard, or change the value using the ↑ and ↓ keys or the wheel of a wheel mouse, then click the OK button.

3 Click the Result View registration button.

Creation of the comparison file begins when you click the Result View registration button.

Notes

- Due to the time it takes to create a comparison file, it may take time for the file to be registered to the clip list in the Result View window after clicking the Result View registration button.
- A comparison file requires approximately 1.5 TB (when the video format is 1920 × 1080/59.94i) of capacity for a 1-hour clip file.

Chapter 7 Slideshow

7-1 Chapter Outline

This chapter describes still image encoding for slideshow as well as slideshow review.

7-2 Starting and Quitting Slide Show Encoder

7-2-1 Starting Slide Show Encoder

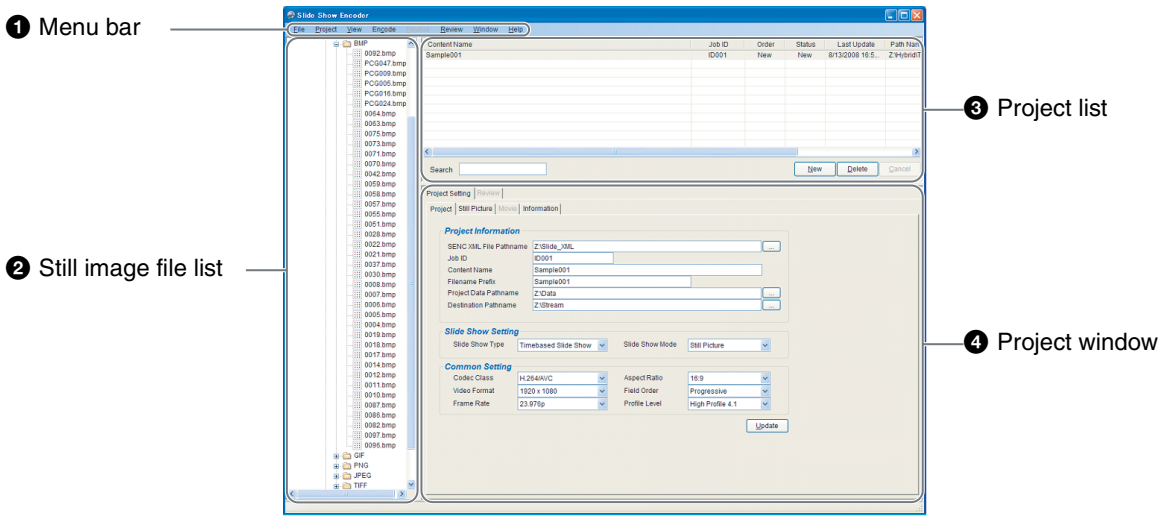
Click the Slide Show button in Launcher.

Slide Show Encoder starts.

7-2-2 Quitting Slide Show Encoder

Click the  button on the window, or select Close from the File menu.

7-2-3 Slide Show Encoder Screen



❶ Menu bar

Menu bar	Command	Description
File	Close	Exit Slide Show Encoder.
Project	Select Path	Select a folder containing projects saved. All jobs stored in the selected folder are displayed in the project list.
	Select File	Select a project file and open it.
	New	Create a new project.
	Edit	Edit a project selected from the project list.
	Delete	Delete a project selected from the project list.
	Save	Update the displayed settings and save the project.
View	Refresh	Update display of the screen to its latest status.
Encode	Entry	Register a project for encoding.
Finalize	Browsing Unit Single BS	Start finalization for a project encoded using the Single BS settings of the browsing unit.
Review	Force SDI Field Mode	Specify the Force SDI Field Mode. SD source is output with the top field first, and HD source is output with the bottom field first.
	Renderer	Output review pictures to the monitor connected to the video output board of the control PC. Setup: Specify the Renderer combination. Reset: Reset the setting.
Window	Project	Display the project setting screen in the project window.
	Monitor	Display the encoding monitor in the project window.
Help	Version	Display the version, copyright, and other information about this software.

❷ Still image file list

From the System Setup window, use Input Folder > Still Image File to display a list of still image files in the specified folder.
The following types of files are displayed.
TIFF, PNG, JPEG, BMP, GIF

❸ Project list

From the System Setup window, use Input Folder > XML file (Slide Show) to display a list of specified project file for still image encoding.

New button

Create a new project.

Edit button

Edit an existing project.

Delete button

Delete a project.

Cancel button

Cancel project editing.

❹ Project window

Display the project setting screen, encoding monitor, or review screen.

7-3 Creating and Encoding a Project (Project Setting Tab)

7-3-1 Creating a Project

1 Click the New button on the project list, or select New from the Project menu.

The Project tab appears.

2 Use the Project tab to specify the project information.

Specify the basic information of the slideshow, such as content name, slideshow type, and codec format.

3 Click the Update button.

The project information is updated.

4 Use the Still Picture tab or Movie tab to specify the encoding parameters.

Depending on the settings in the Slide Show Setting block of the Project tab, the tab for performing the settings will be different.
Also, depending on the encoding type specified on the Project tab, the settings on each tab will be different.

5 Use the Information tab to specify the source for display in the slideshow.

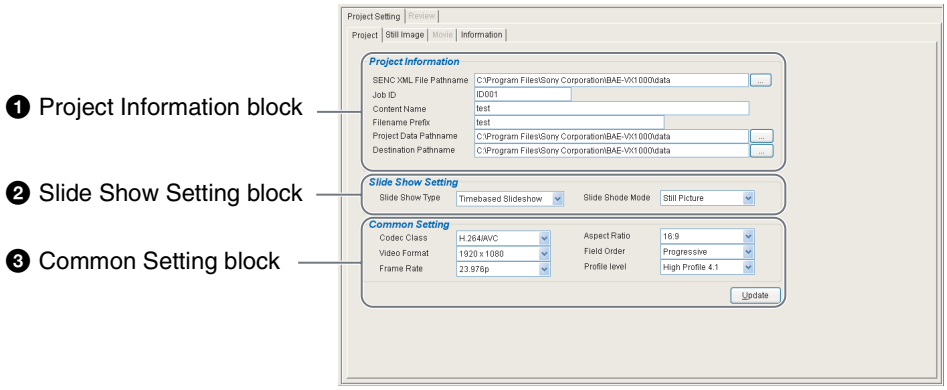
Drag and drop the source, specify the duration, and then click the Add button.
You can specify different encoding parameters for each source.

6 Repeat step 5 according to the number of sources to display.

7 Click the Update button at the bottom of the screen to update the project information.

8 Select Save from the Project menu to save the project.

7-3-2 Setting up Basic Information of a Project (Project Tab)



❶ Project Information block

SENC XML File Pathname

Specify a pathname to use for saving a project (SENC.XML file). Enter a pathname directly, or click the Browse button to select a pathname.
In the folder specified as the destination to save, a folder with the content name entered in Content Name is created automatically and the project file (SEN.XML file) is stored in that folder.

Job ID

Enter the job ID of a job to create.

Content Name

Enter the content name of a project to create (within 255 characters).
A folder with the entered name is automatically created respectively at the location indicated by Project Data Pathname as well as Destination Pathname.

Filename Prefix

Enter the file name of a stream to save. The entered name is automatically added to the beginning of video stream file name.

Project Data Pathname

Specify a pathname for saving project data of a project to create. Enter a pathname directly, or click the Browse button to select a pathname.
In the folder specified as the destination to save, a folder with the content name entered in Content Name is created automatically and the project data is stored in that folder.

Destination Pathname

Specify a pathname for saving stream of a project to create. Enter a pathname directly, or click the Browse button to select a pathname.
In the folder specified as the destination to save, a folder with the content name entered in Content Name is created automatically and the stream file is stored in that folder.

❷ Slide Show Setting block

Slide Show Type

Specify the type of slideshow.

Slide Show Mode

Specify the slideshow mode.

❸ Common Setting block

Codec Class

Specify the encoding type (H.264/AVC, MPEG-2).

Aspect Ratio

Specify the aspect ratio.

Video Format

Specify the video format.

Field Order

Specify the field order.

Frame Rate

Specify the frame rate.

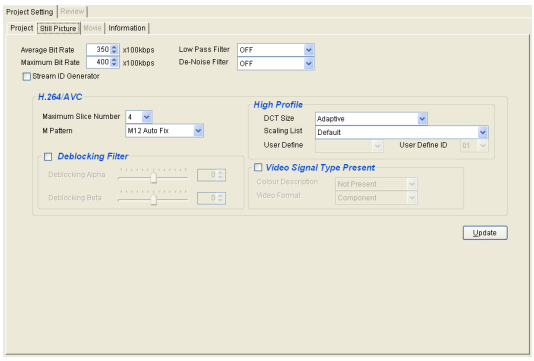
Profile Level

Specify the profile level.

Update button

Update the settings of the Project tab.

7-3-3 Setting up Detailed Settings of Still Image Encoding (Still Picture Tab)



Average Bit Rate
Specify the average bit rate for still image encoding. (Maximum value is 40 Mbps.)

Maximum Bit Rate
Specify the maximum bit rate of still image encoding (maximum 40 Mbps).

Low Pass Filter
Configure the low pass filter setting. The default setting is OFF.
Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
OFF: Do not apply the filter.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

De-Noise Filter
Configure the de-noise filter setting. The default setting is OFF.
Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
OFF: Do not apply the filter.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

Hint
The CG Mode filter is effective for CG animation sources.

Stream ID Generator
If this check box is selected, the bitmap file specified in System Setup is inserted.

H.264/AVC block
If H.264/AVC is selected in Codec Class, specify the encoding parameters.

Max Slice Num
Specify the number of slice.

M Pattern
Specify the M pattern.

DCT Size
Specify the DCT size selection method.

Scaling List
Specify the Scaling List.
When High Profile is selected, you can use a method where weight is added to each frequency component included in the image for encoding.

User Define
If User Define is selected in Scaling List, select the preset scaling list.

User Define ID
Select a User Define ID.

Deblocking Filter
Select it to enable the deblocking filter.

Deblocking Alpha / Deblocking Beta
Specify the coefficients α and β offset values of the deblocking filter.

Video Signal Type Present
Select it to include video signal information in the stream.

Colour Description
Specify whether to include color information in the stream.

Video Format
Specify the video format.

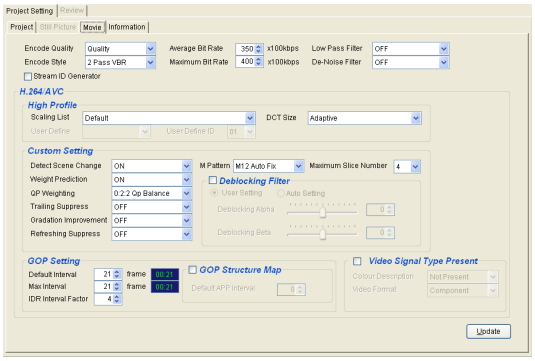
MPEG2 block
If MPEG2 is selected in Codec Class, specify the encoding parameters.

QMatrix
Specify QMatrix.

User Define
If User Define is selected in QMatrix, select the preset scaling list.

User Define ID
Select a User Define ID.

7-3-4 Setting up Detailed Settings of Video Encoding (Movie Tab)



Encode Quality

Specify the quality of encoding.
Quality: The best picture quality can be obtained but encoding takes time.
Speed: The picture quality and encoding time both fall between Quality and Express.
Express: The picture quality is not as good as the other two modes, but we recommend this mode when prioritizing speed.
The default is Quality.

Hint

If your focus is image quality, we recommend that you use the Quality mode to perform encoding.

Encode Style

Specify whether to encode using 2 passes (2 Pass VBR or Fast 2 Pass VBR) or 1 pass (1 Pass CBR or 1 Pass VBR (AVC encoding only)).

Low Pass Filter

Configure the low pass filter setting. The default setting is OFF.
Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
OFF: Do not apply the filter.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

De-Noise Filter

Configure the de-noise filter setting. The default setting is OFF.
Depending on the video format, the filter mode will be Grain Mode, CG Mode, HD Mode, or SD Mode. Select from the following strengths for each mode.
OFF: Do not apply the filter.
Weak: Apply the filter at low strength.
Middle: Apply the filter at medium strength.
Strong: Apply the filter at high strength.

Hint

The CG Mode filter is effective for CG animation sources.

Average Bit Rate

Specify the average bit rate for video encoding. (The maximum value is 400 × 100 kbps.)

Note

It cannot be set in 1 Pass CBR. When 1 Pass CBR is used, specify only Maximum Bit Rate.

Maximum Bit Rate

Specify the maximum bit rate for video encoding. (The maximum value is 400 × 100 kbps.)

Stream ID Generator

If this check box is selected, the bitmap file specified in System Setup is inserted.

H.264/AVC block

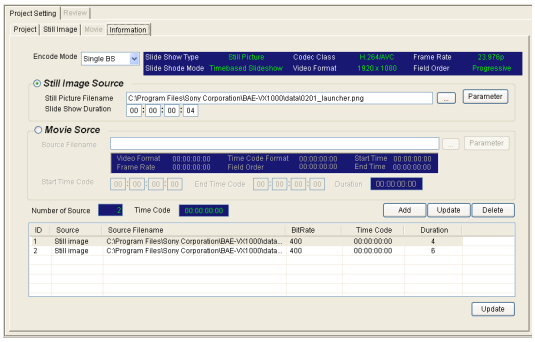
If H.264/AVC is selected in Codec Class, specify the encoding parameters.
For details on the parameters, refer to "6-2-3 Performing Detailed Settings of Encoding (Encode Parameter Tab in the Case of H.264/AVC)," page 56.

MPEG2 block

If MPEG2 is selected in Codec Class, specify the encoding parameters.
For details on the parameters, refer to "6-2-4 Performing Detailed Settings of Encoding (Encode Parameter Tab in the Case of MPEG-2)," page 60.

7-3-5 Setting up Slide Information (Information Tab)

Add source (slide) for display in slideshow.
To add source, drag and drop the source to Still Picture Filename or Source Filename.
You can specify encoding parameters for each added source.



Encode Mode
Specify the encoding mode.
Single BS: Generate joined streams.
Multi BS: Generate individual stream.

Still Image Source block
Select when adding still image as source of slideshow.

Still Picture Filename
Use one of the following methods to specify the file name of a still image file.
- Drag and drop from the tree area.
- Click the Browse button to select the file name.

Parameter button
Click this button when you want to specify encoding parameters for each source.
The Slide Show Encode Parameter dialog box appears.
For details on parameters that can be specified, refer to "7-3-2 Setting up Basic Information of a Project (Project Tab)," page 92.

Slide Show Duration
Specify the slideshow duration of the source to add.

Movie Source block
Select when adding video as source of slideshow.

Source Filename
Use one of the following methods to specify the file name of a video.
- Drag and drop from the tree area.
- Click the Browse button to select the file name.

Parameter button
Click this button when you want to specify encoding parameters of the source to add.
The Movie Encode Parameter dialog box appears.
For details on parameters that can be specified, refer to "6-2-3 Performing Detailed Settings of Encoding (Encode Parameter Tab in the Case of H.264/AVC)," page 56 or "6-2-4 Performing Detailed Settings of Encoding (Encode Parameter Tab in the Case of MPEG-2)," page 60.

Start Time Code / End Time Code
Specify the start timecode and end timecode of the source to add.

Duration
Display the duration calculated from values specified by Start Time Code and End Time Code.

Number of Source
Display the number of sources included in the slideshow.

Time Code
Display the timecode.

Add button
Add the settings to the source list.

Update button
Update the source currently selected from the source list with settings on the tab.

Delete button
Delete the source currently selected from the source list.

Source list
Display a list of sources added to the slideshow.

Update button
Update the project with the settings.

7-4 Encoding Slideshow

1 From the Project list, select a project to encode.

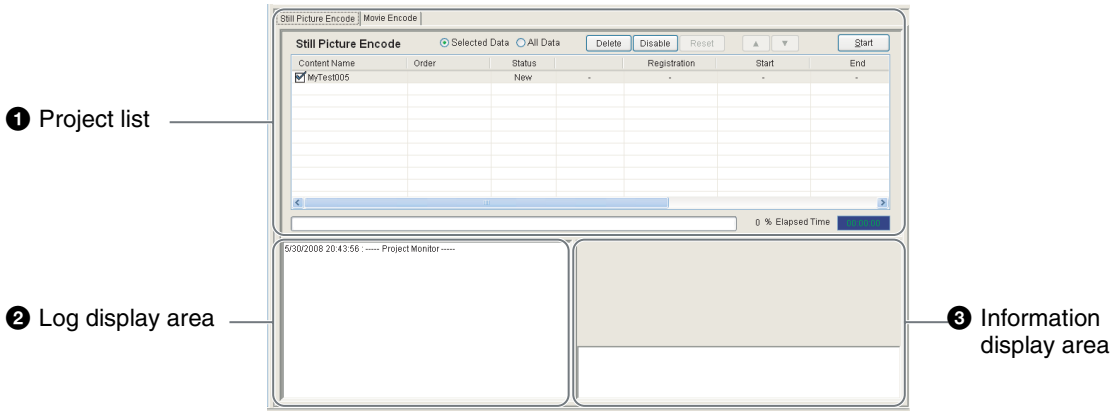
2 Select Entry from the Encode menu.

The encoding monitor screen appears automatically.

3 Click the Start button.

Encoding starts. The encoding progress status appears on the encoding monitor screen.

Project monitor screen



Still Picture Encode tab
Register Still Picture projects for Timebased Slide Show and Browsable Slide Show.

Movie Encode tab
Register Still Movie for Browsable Slide Show or register Browsing Unit projects.

❶ Project list
Registered projects appear in the list.
The project status is indicated by the following icons.
☑ : Target of execution
☐ : Not target of execution
→ : Execution in progress
● : Normal termination
● : Abnormal termination or cancellation

Selected Data / All Data
Select whether to start processing the selected project only, or all projects.

Delete button
Delete the selected project.

Disable / Enable button
Disable or enable the selected project as target for execution.

Reset button
Reset the status of a project and specify it as target of execution.

▲ / ▼ button
Move the project up or down.

Start button
Start the process.

Project list
Display registered projects in a list.
Contents Name: Content name
Order: Registered content of process
Status: Project status
Registration: Registration date and time
Start: Process start date and time
End: Process end date and time
Processing: Time elapsed in process
Remain: Estimated remaining time of process
Description: Details of process content

❷ Log display area

Display process execution log.

❸ Information display area

7-5 Reviewing Slideshow

Review the slideshow after encoding is finished.

1 From the Project list, select a project with encoding finished.

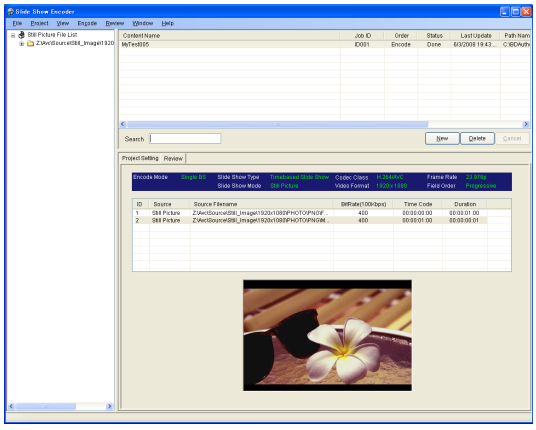
2 From the Window menu, select Project.

The project setting screen appears.

3 Select the Review tab.

4 From the source list, select a source you want to review.

The selected image appears.



You can control Browsing Unit (Movie) by pressing Ctl+S (stop) or Ctl+P (play).

Chapter 8 Creating Disc Images

8-1 Chapter Outline

This chapter describes how to create BD-ROM disc images using encoded video streams.

8-2 Starting and Quitting Disc Image Creator

8-2-1 Starting Disc Image Creator

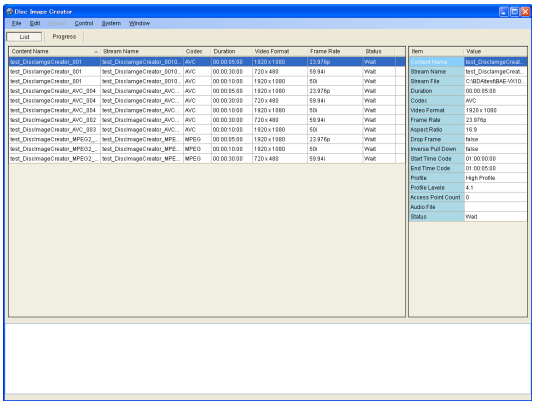
Click the Disc Image Creator button in Launcher.

Disc Image Creator starts.

8-2-2 Quitting Disc Image Creator

Click the  button on the window, or select Exit from the File menu.

8-2-3 Disc Image Creator Screen (List Display Mode)



Menu bar

Menu bar	Command	Description
File	Close	Exit Disc Image Creator.
Edit	Entry	Add a project to the Progress screen, and begin creating disc images.
	Audio Setting	Specify the audio file to be multiplexed with the video.
Project	Delete	Delete the selected project from the Progress screen.
	All Delete	Delete all projects from the Progress screen.
Control	Start	Start disc image creation.
	Stop	Stop disc image creation.
System	Option	Display the option settings screen.
	Default Setting	Return settings to default configurations.
Window	Detail	Display/hide the Detail area.
	Log	Display/hide the Log area.

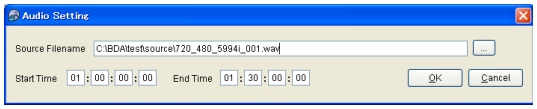
8-3 Creating the Disc Images

8-3-1 Assigning Audio Files

1 Switch to list display mode.

2 Select the video stream to which the audio file will be assigned, and run Audio Setting from the Edit menu.

The Audio Setting screen appears.



3 Select the audio file.

4 Click the OK button.

Hint

You can only assign WAV-format audio files. To use audio data captured during video capture, convert the data to WAV files using AVI to WAV Converter.

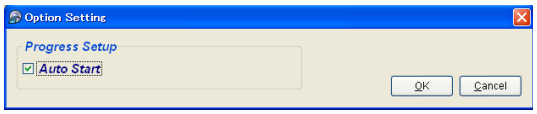
For details, refer to "2-2-4 AVI to WAV Converter," page 15.

8-3-2 Option Setting

When Auto Start is selected, disc image creation starts automatically when the video stream is registered to the Progress list.

1 Run the Option command from the System menu.

The Option Setting screen appears.



2 Select the Auto Start check box.

3 Click the OK button to close the screen.

8-3-3 Registering Video Streams and Disc Image Creation

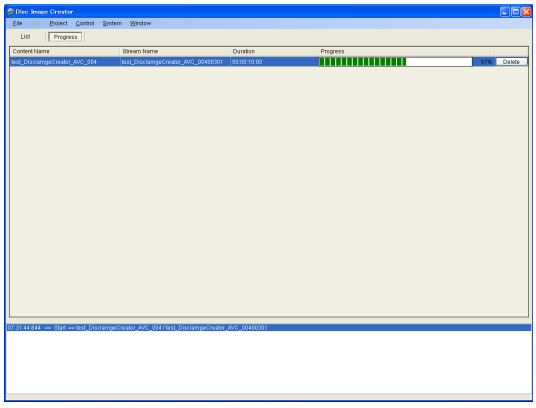
Select the video stream with which to create the disc image, and run Entry from the Edit menu.
You can also select the video stream, and run Entry from the right-click menu.

The selected video stream is registered to the Progress list, and disc image creation starts.
If Auto Start is not selected, start disc image creation by selecting Start from the Control menu.
The following folders are created when disc image creation starts, and disc images are stored as "IMAGE.img" under these folders.

- For H.264/AVC codec
  Stream - <project file name>.bsf_imag - image
- For MPEG-2 codec
  Stream - <project file name>.m2v_imag - image

Hint

You can also select multiple video streams for registration.



Note

If an "UNDER FLOW" error occurs, reduce the bit rate and encode.

Chapter 9 Result View

9-1 Chapter Outline

This chapter describes comparison viewing of source and encoded images.

For details on how to register clips for display in the Result View, refer to “6-4 Result View Registration,” page 88.

9-2 Starting and Quitting Result View

9-2-1 Starting Result View

Click the Result View button in the Launcher.

Result View starts.

9-2-2 Quitting Result View

Click the window’s  button.

9-2-3 Result View Screen

❶ Prev/Next selectors

Button	Description	Shortcut key
	Prev button Displays the previously viewed clip.	Ctrl + P
	Next button Displays the next clip after viewing a previous clip with the Prev button.	Ctrl + N

❷ Result View display area

Source and encoded images can be viewed split screen either vertically or horizontally, or by toggling full-screen views.
When viewed split screen vertically or horizontally, the images can be separated by a horizontal or vertical line, respectively.
When viewed full screen, source and encoded images are alternatively displayed.
Result View displays can be output as SDI/HDMI.

❸ Result View controls

Button	Description	Shortcut key
	Horizontal button Source and encoded images swap left and right positions with each press. The blue part of the button indicates the current position of the encoded image.	F5
	Vertical button Source and encoded images swap top and bottom positions with each press. The blue part of the button indicates the current position of the encoded image.	F6
	Full-screen button Source and encoded images are swapped with each press. The button is blue when the encoded image is displayed.	F7
	Displays the Dynamic Splitter.	F8
	Moves to the start of a clip.	Home
	Displays the previous frame.	F1
	Play or stop.	Space
	Displays the next frame.	F2
	Moves to the end of a clip.	End
TC	Displays the timecode.	Ctrl + T
	Displays Time Code Search. Specify and jump to a timecode.	Ctrl + J

Other shortcut keys

Shortcut key	Description
Ctrl + L	Toggle the scene change line display ON/OFF.
Ctrl + ←	Move the scene change line left (fast).
Ctrl + →	Move the scene change line right (fast).
Ctrl + ↑	Move the scene change line up (fast).
Ctrl + ↓	Move the scene change line down (fast).
Ctrl + Shift + ←	Move the scene change line left (one line).
Ctrl + Shift + →	Move the scene change line right (one line).
Ctrl + Shift + ↑	Move the scene change line up (one line).
Ctrl + Shift + ↓	Move the scene change line down (one line).

❹ Clip list show/hide button

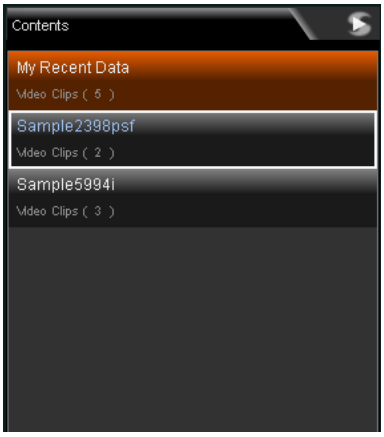
Displays or hides the clip list.

Shortcut keys

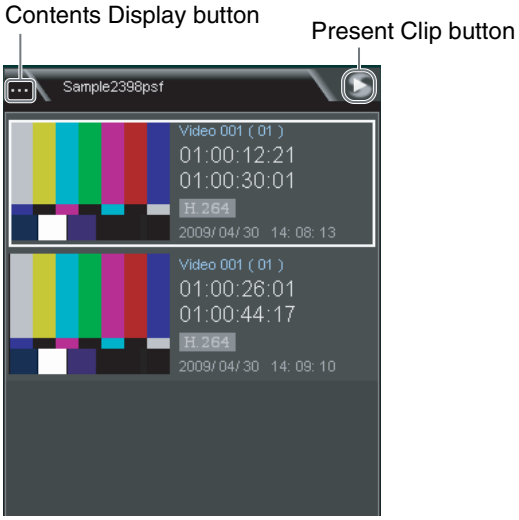
Shortcut key	Description
Esc	Hide the clip list.

❺ Clip list

Displays registered content names and clips.



Select the clip to display in the viewing area according to content name, or from “My Recent Data.”
Press Enter or double click to display the selected clip to the clip display window.



Double click a clip in the clip display window to display it in the Result View area.
Click the Contents Display button or press Backspace to switch to the Contents Display.

Deleting clips: Select one or more clips, and press the Del key or select [Delete Clip] from the right-click menu.
Deleting contents: Select one or more contents, and press the Del key or select [Delete Content] from the right-click menu. When you delete contents, all clips that are included in the contents are deleted.
Sorting clips: By right-clicking during clip display, you can select [CreateTime (Ascending)] or [CreateTime (Descending)] in the menu to sort clips by creation date, or select [TimeCode (Ascending)] or [TimeCode (Descending)] to sort clips by timecode each angle unit.
Sorting contents: By right-clicking during content display, you can select [CreateTime (Ascending)] or [CreateTime (Descending)] in the menu to sort contents by creation date, or select [Name (Ascending)] or [Name (Descending)] to sort contents by name.

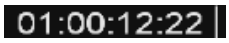
Click the Present Clip button to move the focus to the clip current displayed in the Result View area.

Hint

My Recent Data is a folder that displays recently created clips.

❻ Time Code display

Click the Time Code button (Result View Control) to display the current timecode.



When source and encoded images are displayed split-screen horizontally, a vertical bar at the left or right of the timecode indicates the position of the encoded image.

When source and encoded images are displayed split-screen vertically, a bar above or below the timecode indicates the position of the encoded image.

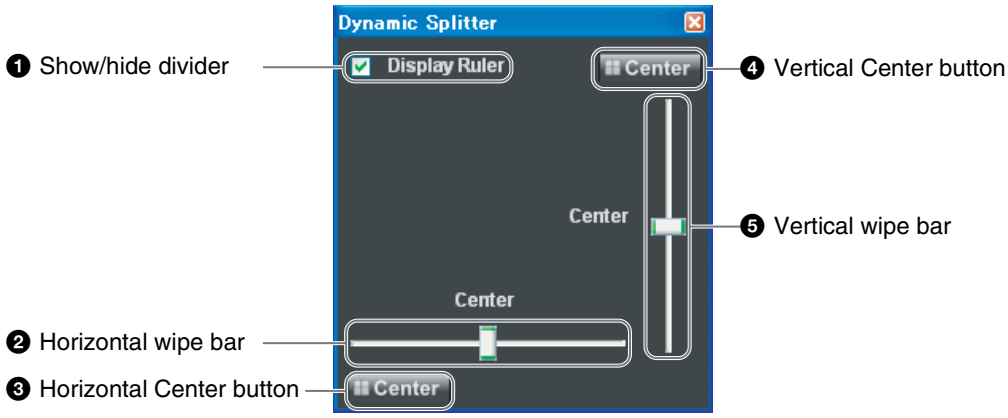
With full-screen display, an underbar appears below the timecode when the encoded image is displayed.

❼ Track bar

Indicates the relative position of the displayed frame within the clip.
Point the mouse at the track bar and turn the mouse wheel to move forward and backward within the clip.

9-2-4 Dynamic Splitter Screen

Click the Dynamic Splitter button (Result View Control) to display.



❶ Show/hide divider

When viewing images split-screen horizontally or vertically, select or deselect this to show or hide the divider between images, respectively.

❷ Horizontal wipe bar

Move the slider to reposition the horizontal divider.
If horizontal split-screen is not currently active, moving the slider makes it active.

❸ Horizontal Center button

Centers the divider in the horizontal split-screen display.

❹ Vertical Center button

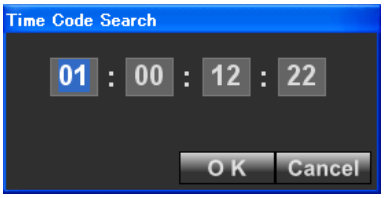
Centers the divider in the vertical split-screen display.

❺ Vertical wipe bar

Move the slider to reposition the vertical divider.
If vertical split-screen is not currently active, moving the slider makes it active.

9-2-5 Time Code Search Screen

Click the Time Code Search button (Result View Control) to display.



Enter a timecode and click the OK button to move to the specified frame.

Chapter 10 Other Information

10-1 Scaling List

When the High Profile H.264/AVC codec is selected, encoding can be performed by specifying either a default or user-defined scaling list.
The H.264/AVC codec standard defines the following default scaling lists.

Default Scaling Lists

Y Intra 4 × 4, Cb Intra 4 × 4, Cr Intra 4 × 4:
6, 13, 20, 28,
13, 20, 28, 32,
20, 28, 32, 37,
28, 32, 37, 42

Y Inter 4 × 4, Cb Inter 4 × 4, Cr Inter 4 × 4:
10, 14, 20, 24,
14, 20, 24, 27,
20, 24, 27, 30,
24, 27, 30, 34

Y Intra 8 × 8:
6, 10, 13, 16, 18, 23, 25, 27,
10, 11, 16, 18, 23, 25, 27, 29,
13, 16, 18, 23, 25, 27, 29, 31,
16, 18, 23, 25, 27, 29, 31, 33,
18, 23, 25, 27, 29, 31, 33, 36,
23, 25, 27, 29, 31, 33, 36, 38,
25, 27, 29, 31, 33, 36, 38, 40,
27, 29, 31, 33, 36, 38, 40, 42

Y Inter 8 × 8
9, 13, 15, 17, 19, 21, 22, 24,
13, 13, 17, 19, 21, 22, 24, 25,
15, 17, 19, 21, 22, 24, 25, 27,
17, 19, 21, 22, 24, 25, 27, 28,
19, 21, 22, 24, 25, 27, 28, 30,
21, 22, 24, 25, 27, 28, 30, 32,
22, 24, 25, 27, 28, 30, 32, 33,
24, 25, 27, 28, 30, 32, 33, 35

There are four types of luminance components: 4 × 4, 8 × 8, Intra, and Inter. There are also four types of color difference components: Cb, Cr, Intra, and Inter (as color difference components are only 4 × 4, no 8 × 8 component exists).

Values in the Scaling List can range from 1 to 255, with smaller values emphasizing the frequency component, and larger values suppressing the frequency component.

Fig. 10.1 shows the frequency components after 8 × 8 DCT. The top left element is the DC component, and others are AC components. Those elements toward the upper left are lower-frequency components, and those toward the bottom right are higher-frequency components, with the bottom right element being the highest-frequency component.

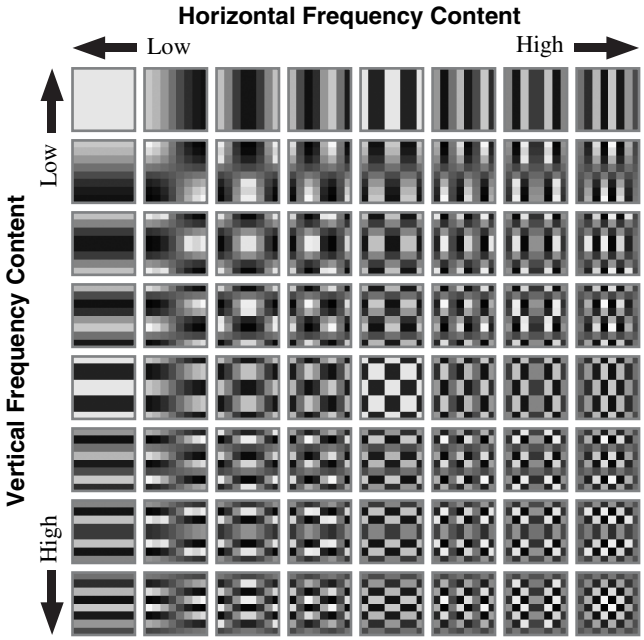


Figure 10.1 Frequency components after 8 × 8 DCT

Looking at the Default Scaling List, one can see that smaller values are specified for lower-frequency components, and larger values for higher-frequency components, corresponding to human visual characteristic that distinguishes differences in low-frequency components better than in high-frequency components.
As the above tendency is applicable to typical images, good image quality can be obtained by applying the Default Scaling List. However, some image content may have more low-frequency components, and other content may have more high-frequency components. For such content, better image quality may be obtained by favoring low- or high-frequency components instead of using a Default Scaling List.
In addition, although the luminance and color difference values in the Scaling List are generally the same, you can

emphasize color difference image quality over luminance by providing smaller Scaling List values for color difference, resulting in more bandwidth being allocated to color difference information than to luminance (and vice-versa).

Similarly, the bilateral symmetry of the values in the Default Scaling List does not have to be maintained. Depending on the pattern of the content, there are cases where either horizontal or vertical components can be emphasized. In such cases, image quality may be improved by using values that favor treatment of particular components.
Because of the wide variations of content, there is no specific method to determine the optimum values for emphasizing or suppressing particular frequencies. The optimum values depend on the content to be processed.
However, low-frequency components tend to concentrate after DCT values. So attention should be paid where low-frequency values change significantly, because generated values may be larger than expected.
Furthermore, because image quality can be strongly affected, we recommend setting values experimentally with close observation of results.

10-2 Error Messages

10-2-1 Chapter

Code	Message	Solution
ER_1001	File Path Check error.	Check the output destination.
ER_1002	VTR Status error.Initialization Fail.	Check the connection to the VTR.
ER_1003	System Loading error.	Check the system file.
ER_1004	Initialization error.	Check the connections to the VTR and Capture Board.
ER_1005	Drop Frame Format Check error.	Check the capture format.
ER_1006	Drop Frame Time Code Check error.	Check the capture format.
ER_1007	FrameRate Check error.	Check the capture format.
ER_1008	MaxFrame Check error.	Check the capture format.
ER_1009	Capture file Path Check error.	Check the capture file.
ER_1010	Audio file Path Check error.	Check the audio file.
ER_1011	VTR Operate Status error.	Check the connection to the VTR.
ER_1012	VTR Play error.	Check the connection to the VTR.
ER_1013	VTR Pause error.	Check the connection to the VTR.
ER_1014	VTR StanbyOff error.	Check the connection to the VTR.
ER_1015	VTR StanbyOn error.	Check the connection to the VTR.
ER_1016	Time Code Format Change error.	Check the connection to the VTR.
ER_1017	VTR Jump error.	Check the connection to the VTR.
ER_1018	VTR Jump Start error.	Check the connection to the VTR.
ER_1019	VTR Eject error.	Check the connection to the VTR.
ER_1020	VTR Rewind error.	Check the connection to the VTR.
ER_1021	VTR StepBackward error.	Check the connection to the VTR.
ER_1022	VTR StepForward error.	Check the connection to the VTR.
ER_1023	VTR PlaySpeed Change error.	Check the connection to the VTR.
ER_1024	Auto Eject error.	Check the connection to the VTR.
ER_1025	Disk Space Check error.	Check the capacity of the storage location.
ER_1026	Capture error.	Start the application again.
ER_1027	Capture Stop error.	Start the application again.
ER_1028	VTR Stop error.	Check the connection to the VTR.
ER_1029	Batch Capture error Detect.	Start the application again.
ER_1030	Batch Capture Prepare error.	Start the application again.
ER_1031	Batch Capture Start error.	Start the application again.
ER_1032	TimeCode Check Timer error.	Check the capture format.
ER_1033	VTR DropFrame Check error.	Check the connection to the VTR.
ER_1034	Get VTR Status Code Get error.	Check the connection to the VTR.
ER_1035	VTR Cassette Status error.	Check the connection to the VTR.
ER_1036	VTR Standby Status error.	Check the connection to the VTR.
ER_1037	Set PrerollTime error.	Check the connection to the VTR.
ER_1038	Device Close error.	Check the connections to the VTR and Capture Board.
ER_1039	System Closing error.	Start the application again.

10-2-2 Preprocess

Code	Message	Solution
ER_2001	PPM SceneChangeFilter Filter error.	Check the source file, and start the application again.
ER_2002	PPM InvsersePulldown Filter error.	Check the source file, and start the application again.
ER_2003	Direct Show Filter error.	Check the source file, and start the application again.

10-2-3 Encode

Code (hex)	Message	Solution
0xF3310001	Encode batch process error	Check the source file, and start the application again.
0xF3110001	Encode batch process error	Check the source file, and start the application again.
0xF3110002	Encode batch process error	Check the source file, and start the application again.
0xF3110003	Encode batch process error	Check the source file, and start the application again.
0x73010002	Encode batch process error	Check the source file, and start the application again.
0x73010005	Encode batch process error	Check the source file, and start the application again.
0xF3320001	Encode PC error.	Check the source file, and start the application again.
0xF3120001	Encode PC error.	Check the source file, and start the application again.
0xF3320003	Encode PC error.	Check the source file, and start the application again.
0x73020001	Encode PC error.	Check the source file, and start the application again.
0xF3350006	Encode process error.	Check the source file, and start the application again.
0xF3350003	Encode process error.	Check the source file, and start the application again.
0xF3350007	Encode process error.	Check the source file, and start the application again.
0xF3050003	Encode process error.	Check the source file, and start the application again.
0xF3360001	Encode process error.	Check the source file, and start the application again.
0xF3360003	Encode process error.	Check the source file, and start the application again.
0xF4313009	file not found : Venc.xml	Check the source file, and start the application again.
0xF4111001	file access error : Venv.cml	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4212003	file access error : Venv.cml	Check the file format and version, and then try again.
0xF4313001	System error	Check the source file, and start the application again.
0xF4333001	System error	Check the source file, and start the application again.
0xF4131001	file access error : Sinf.xml	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4343001	System error	Check the source file, and start the application again.
0xF4141001	file access error : Pulldown pattern file.	Check the source file, and start the application again.
0xF4141002	file access error : Pulldown pattern file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4141003	file access error : Pulldown pattern file.	The file may be corrupted, or the file format specified is not correct.
0xF4242001	file access error : Pulldown pattern file.	Check the source file, and start the application again.
0xF4242002	file access error : Pulldown pattern file.	Check the file format and version, and then try again.
0xF4343003	file access error : Pulldown pattern file.	The file does not contain pattern data. Please try again.
0xF4343002	file access error : Pulldown pattern file.	The file does not contain pattern data. Please try again.
0xF4348001	file access error : Pulldown pattern file.	The file does not contain pattern data. Please try again.
0xF4348002	file access error : Pulldown pattern file.	The file does not contain pattern data. Please try again.
0xF4348003	System error	Check the source file, and start the application again.

Code (hex)	Message	Solution
0xF4348004	System error	Check the source file, and start the application again.
0xF4353001	System error	Check the source file, and start the application again.
0xF4151001	file access error : Scene Change file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4151002	file access error : Scene Change file.	The file may be corrupted, or the file format specified is not correct.
0xF4151003	file access error : Scene Change file.	The file may be corrupted, or the file format specified is not correct.
0xF4252001	file access error : Scene Change file.	Check the file format and version, and then try again.
0xF4252002	file access error : Scene Change file.	The file does not contain pattern data. Please try again.
0xF4353003	System error	Check the source file, and start the application again.
0xF4353002	System error	Check the source file, and start the application again.
0xF4363001	System error	Check the source file, and start the application again.
0xF4161001	file access error : EncInfo.bin	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4161002	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF4161003	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF4262001	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF4363002	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF4363003	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF436C001	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF4365001	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF4365002	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF4365003	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF4264001	file access error : Picture report file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4264002	file access error : Picture report file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4264003	file access error : Picture report file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4264004	file access error : Picture report file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4264005	file access error : Picture report file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4363009	file access error : Picture report file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4161004	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF43E3002	file access error : EncInfo.bin	The file may be corrupted, or the file format specified is not correct.
0xF41E1001	file access error : Picture report file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41E1002	file access error : Picture report file.	The file may be corrupted, or the file format specified is not correct.
0xF42E2001	file access error : Picture report file.	The file may be corrupted, or the file format specified is not correct.
0x74060001	file access error : EncInfo.bin	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4373001	System error	Check the source file, and start the application again.
0xF4171001	file access error : SegmentInfo file	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4171002	file access error : SegmentInfo file	The file may be corrupted, or the file format specified is not correct.

Code (hex)	Message	Solution
0xF4171003	file access error : SegmentInfo file	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4272001	file access error : SegmentInfo file	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4373002	System error	Check the source file, and start the application again.
0xF4373003	System error	Check the source file, and start the application again.
0xF4272002	System error	Check the source file, and start the application again.
0xF4373009	System error	Check the source file, and start the application again.
0x74070001	System error	Check the source file, and start the application again.
0x74070002	System error	Check the source file, and start the application again.
0x74070003	System error	Check the source file, and start the application again.
0xF4393001	System error	Check the source file, and start the application again.
0xF4191001	file access error :CsInfo file	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF4191002	file access error :CsInfo file	The file may be corrupted, or the file format specified is not correct.
0xF4191003	file access error :CsInfo file	The file may be corrupted, or the file format specified is not correct.
0xF4292001	System error	Check the source file, and start the application again.
0xF4393002	System error	Check the source file, and start the application again.
0xF4393003	System error	Check the source file, and start the application again.
0xF4393009	System error	Check the source file, and start the application again.
0x74090001	System error	Check the source file, and start the application again.
0xF43A3001	System error	Check the source file, and start the application again.
0xF41A1001	file access error : User Scaling List file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41A1002	file access error : User Scaling List file.	The file may be corrupted, or the file format specified is not correct.
0xF41A1003	file access error : User Scaling List file.	The file may be corrupted, or the file format specified is not correct.
0xF42A2001	file access error : User Scaling List file.	The file may be corrupted, or the file format specified is not correct.
0xF43A3003	System error	Check the source file, and start the application again.
0xF41A1005	file access error : User Scaling List file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41A1006	file access error : User Scaling List file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41A1007	file access error : User Scaling List file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41A1008	file access error : User Scaling List file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41A1009	file access error : User Scaling List file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41A1004	file access error : User Scaling List file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF42A2002	System error	Check the source file, and start the application again.
0x740A0001	System error	Check the source file, and start the application again.
0xF43B3001	System error	Check the source file, and start the application again.
0xF41B1001	file access error : User QMatrix file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41B1002	file access error : User QMatrix file.	The file may be corrupted, or the file format specified is not correct.

Code (hex)	Message	Solution
0xF41B1003	file access error : User QMatrix file.	The file may be corrupted, or the file format specified is not correct.
0xF42B2001	file access error : User QMatrix file.	The file may be corrupted, or the file format specified is not correct.
0xF43B3003	System error	Check the source file, and start the application again.
0xF41B1005	file access error : User QMatrix file.	The file may be corrupted, or the file format specified is not correct.
0xF41B1006	file access error : User QMatrix file.	The file may be corrupted, or the file format specified is not correct.
0xF41B1007	file access error : User QMatrix file.	The file may be corrupted, or the file format specified is not correct.
0xF41B1008	file access error : User QMatrix file.	The file may be corrupted, or the file format specified is not correct.
0xF41B1009	System error	Check the source file, and start the application again.
0xF41B1004	file access error : User QMatrix file.	The file may be corrupted, or the file format specified is not correct.
0xF42B2002	System error	Check the source file, and start the application again.
0x740B0002	System error	Check the source file, and start the application again.
0xF41C1001	file access error : Stp file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41C1002	file access error : Stp file.	The file may be corrupted, or the file format specified is not correct.
0xF41C1003	file access error : Stp file.	The file may be corrupted, or the file format specified is not correct.
0xF43C3009	file access error : Stp file.	The file may be corrupted, or the file format specified is not correct.
0xF43C3003	file access error : Stp file.	The file may be corrupted, or the file format specified is not correct.
0xF41C1004	file access error : Stp file.	The file may be corrupted, or the file format specified is not correct.
0xF43D3001	System error	Check the source file, and start the application again.
0xF41D1001	file access error : Hinstory Info file.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF41D1002	file access error : Hinstory Info file.	The file may be corrupted, or the file format specified is not correct.
0xF41D1003	file access error : Hinstory Info file.	The file may be corrupted, or the file format specified is not correct.
0xF42D2001	file access error : Hinstory Info file.	The file may be corrupted, or the file format specified is not correct.
0xF43D3003	System error	Check the source file, and start the application again.
0xF41D1004	file access error : Hinstory Info file.	The file may be corrupted, or the file format specified is not correct.
0xF42D2002	System error	Check the source file, and start the application again.
0xF41D100A	System error	Check the source file, and start the application again.

10-2-4 Finalize

Code (hex)	Message	Solution
0xF3370001	Finalize process error.	Check the stream file, and start the application again.
0xF3170006	Finalize process file access error.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF3370003	Finalize process error.	Check the stream file, and start the application again.
0xF3170014	Finalize process error.	Check the stream file, and start the application again.
0xF3370002	Finalize process error.	Check the stream file, and start the application again.
0xF3170009	Finalize process file access error.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF3170007	Finalize process file access error.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF3170008	Finalize process file access error.	Check properties such as the connection to storage, exclusive controls, and access permissions.
0xF3180001	Finalize process error.	Check the stream file, and start the application again.
0xF3180006	Finalize process error.	Check the stream file, and start the application again.
0xF3280004	Finalize process error.	Check the stream file, and start the application again.
0xF3280005	Finalize process error.	Check the stream file, and start the application again.
0xF3280006	Finalize process error.	Check the stream file, and start the application again.

Chapter 10 Other Information

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