



grass valley
A **BELDEN** BRAND

XRE Transcoder

Users Guide
version 9.0

www.grassvalley.com

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**Grass Valley
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**Manual
Explanation**

- If there are any variations between the explanation in this manual and the actual application method, priority is given to the actual application method.
- The screens used as examples in this manual are those of the development stage, so they may vary from those in the final product.
- This manual is written for people who have a basic knowledge of how to use a computer. If there are no special instructions, perform the same operation as a normal computer operation.
- In this manual, EDIUS Workgroup, EDIUS Pro, and EDIUS series are called “EDIUS”.
- In this manual, Microsoft® Windows® operating system products are called as follows.
 - Microsoft® Windows® 7 operating system: Windows 7 (collective term for Ultimate, Enterprise, Professional, Home Premium, and Home Basic)
 - Microsoft® Windows® 8 operating system: Windows 8 (collective term for Enterprise, Pro, and Core Edition)
 - Microsoft® Windows® 8.1 operating system: Windows 8.1 (collective term for Enterprise, Pro, and Core Edition)
 - Microsoft® Windows® 10 operating system: Windows 10 (collective term for Enterprise, Education, Pro, and Home)

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Before Using

Before Using

Section 1

System Requirements

❖ OS

- Windows 7 64-bit (Service Pack 1 or later)
- Windows 8/Windows 8.1/Windows 10 64-bit
- Windows Server 2008/Windows Server 2012

❖ CPU

- Intel Core 2, Intel Core iX CPU, or higher
- Intel or AMD single core CPU with a 3 GHz processor speed or faster (multiple CPUs or multicore CPUs are recommended)
- SSE3 (supplementary SSE3) compatibility

❖ Memory

- 16 GB RAM

❖ Hard Disk

- 6 GB or more hard disk space required for installation

❖ Network

- Internet connection required for activation

Package Contents

Please verify that the following items are included in XRE Transcoder.

- XRE Transcoder Installation DVD
- Serial number
- XRE Transcoder Users Guide (Download) (this book)

Note

- Activation cannot be performed without the serial number. Keep the serial number not to be lost. The serial number cannot be reissued for any reason.

About This Manual

This manual serves as Users Guide of “XRE Transcoder”, an optional product of EDIUS XRE.

In this manual, descriptions are given based on the premise that the system environment of EDIUS XRE Ver.9.0 or later has been constructed.

Grass Valley Product Support

For technical assistance, to check on the status of a question, or to report a new issue, contact Grass Valley Product Support via e-mail, the Web, or by phone or fax.

Web Technical Support

To access support information on the Web, visit the product support Web page on the Grass Valley Web site. You can download software or find solutions to problems by searching our Frequently Asked Questions (FAQ) database.

World Wide Web:

www.grassvalley.com/support/contact

Local Support Centers:

www.grassvalley.com/ad/contact_customer_support

Phone Support

Use the following information to contact product support by phone during business hours. After hours phone support is available for warranty and contract customers.

United States/Americas	+1 801 222 5204
Europe, United Kingdom, Africa and The Middle East	+44 (0)20 8867 6305
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Authorized Support Representative

To locate the support representative for your country, visit the Product Support Web page on the Grass Valley Web site:

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Grass Valley's innovation and excellence in product design also extends to the programs we've established to manage the recycling of our products. Grass Valley has developed a comprehensive end-of-life product take back program for recycle or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive, the United States Environmental Protection Agency, and U.S. state and local agencies.

Grass Valley's end-of-life product take back program assures proper disposal by use of Best Available Technology. This program accepts any Grass Valley branded equipment. Upon request, a Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent to the requester.

Grass Valley will be responsible for all costs associated with recycling and disposal, including freight. However, you are responsible for the removal of the equipment from your facility and packing the equipment to make it ready for pickup.



For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the U.S. and Americas please call 800-547-8949 or 530-478-4148, and ask to be connected to the EH&S Department. Additional information concerning the program can be found at: www.grassvalley.com/about/environmental-policy

Overview

Section 2

XRE Transcoder Overview

XRE Transcoder adds the following functions to the EDIUS XRE system.

- Format conversion process (transcoding job) of a desired file can be requested to EDIUS XRE without intermediate of EDIUS.
- You can configure the settings so that a file is requested to be automatically processed for format conversion (as a transcoding job) once it is added in the Watched folder. (Watch folder function)

The controller manages the jobs to distribute the jobs to the engines, in the same way as on EDIUS XRE. See the EDIUS XRE Users Guide for more details.

The progress status of the transcoding jobs can be checked in the job list of XRE Transcoder. The job list shows jobs requested by XRE Transcoder, and also jobs from EDIUS clients. XRE Transcoder installed on the controller turns to XRE Transcoder (management mode), which is allowed to reorder the jobs to be executed.

Setup

Section 3

Installing XRE Transcoder

Install XRE Transcoder to a PC that is within the EDIUS XRE system network.

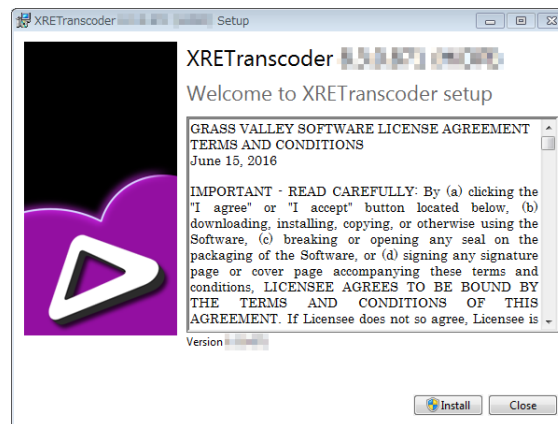
It can be installed on either of the PC for controller, engine, or client.

Note

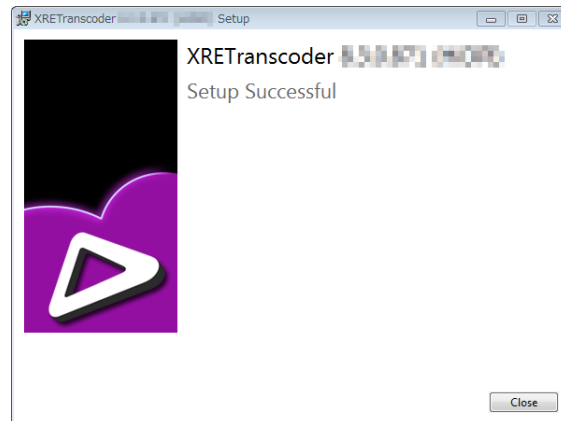
- You need to set up EDIUS XRE controller and engine in advance.
- Close all other application software including resident software before installation.
- Before installing the software on your PC, be sure to login with a user ID (such as Administrator) authorized to change system settings.

1 Set your XRE Transcoder Installation DVD into the DVD drive. Double-click “XreTranscoder_Setup-9.xxxxx.exe”.

2 Click [Install].



The installation of XRE Transcoder begins.

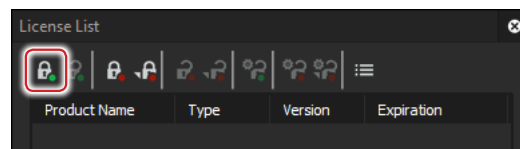
3 Click [Close].

Activation of Serial (Online)

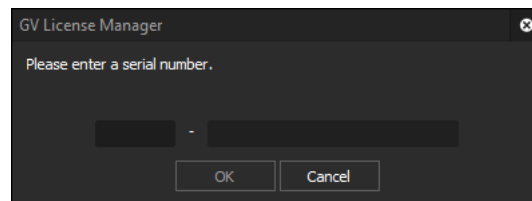
Activation is performed after the complete of installation. Activation requires internet connectivity environment. The function installed when activation was not performed cannot be used.

1 Click the [start] menu, and then click [All Programs] > [Grass Valley] > [GV LicenseManager].

2 Click [Online Activation] in the [License List] dialog box



3 Enter a serial number, and click [OK].



Activation is complete.

POINT

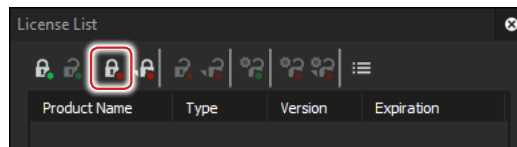
- Activation in the offline environment is also possible.

Activation of Serial (Offline) ► P13

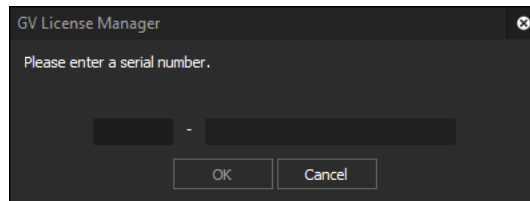
Activation of Serial (Offline)

If the install destination PC is not connected to the Internet, complete activation by using another PC with Internet connection to perform offline authentication for activation.

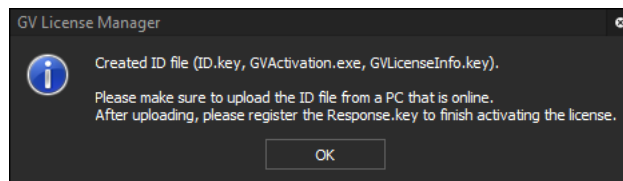
- 1 Connect a USB stick to the PC on which XRE Transcoder has been installed.
- 2 Click the [start] menu, and then click [All Programs] > [Grass Valley] > [GV LicenseManager].
- 3 Click [Offline Activation Create ID File] in the [License List] dialog box.



- 4 Enter a serial number, and click [OK].

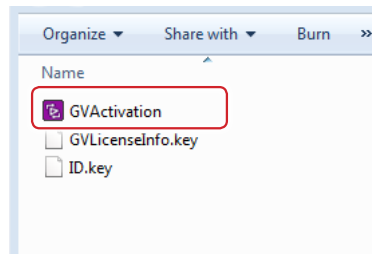


- 5 Choose the USB stick as save location and then click [Choose folder].
- 6 Click [OK].



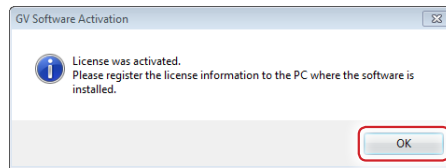
- 7 Eject the USB stick from the machine and then insert into a Windows PC connected to an internet.

8 Open the USB stick and then double-click [GVActivation].



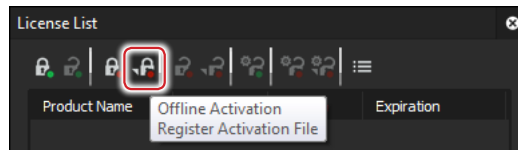
9 Click [Yes].

10 Click [OK].



11 Eject the USB stick from the Windows PC and then insert to the PC on which XRE Transcoder has been installed.

12 Click [Offline Activation Register Activation File] in the [License List] dialog box.



13 Choose Response.key in the folder where the ID file of the USB stick has been exported, and then click [Open].

14 Click [OK].

15 Activated license will be listed. Close the window by clicking [X].

XRE Transcoder Settings

Section 4

Before starting configuration of XRE Transcoder, the following environment must be prepared.

- The PC for controller and PC for engine can be operated as the EDIUS XRE system.
- The PC on which XRE Transcoder has been installed is connected to the PC for controller and PC for engine in a network via Ethernet.

See the EDIUS XRE Users Guide for more details.

Setting Example

In this section, each step is described based on the following system setting example.

❖ Controller/Engine PC

➤ Controller settings

(Use a computer name: XREServer, IP address: 172.25.90.161)

Project folder	Controller Project Folder (any folder name) on the Server Ex. \\XREServer\XRE_Controller_Project_Folder
Port	1223 (default)
Days to keep jobs in history	30 (default)

➤ Engine settings

Node name	Engine1 (any name)
Server setting	Name XREServer (any name) Address "XREServer" (computer name of the PC where controller is installed) or "172.25.90.161" Port 1223 (default)

❖ XRE Transcoder PC

➤ XRE Transcoder settings

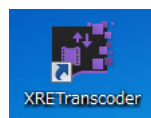
Server setting	
Name	XREServer (any name)
Address	“XREServer” (computer name of the PC where controller is installed) or “172.25.90.161”
Port	1223 (default)

Configuring XRE Transcoder

Perform the following settings on the PC for XRE Transcoder.

- Setting for connection to the controller
- Setting for notifications of error that occurs in conversion process
- Settings for the Watch folder

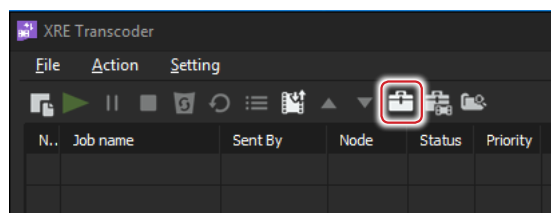
1 Double-click the XRE Transcoder icon on the desktop.



Alternative

- Click the [start] menu, and then click [All Programs] > [Grass Valley] > [XRE Transcoder].

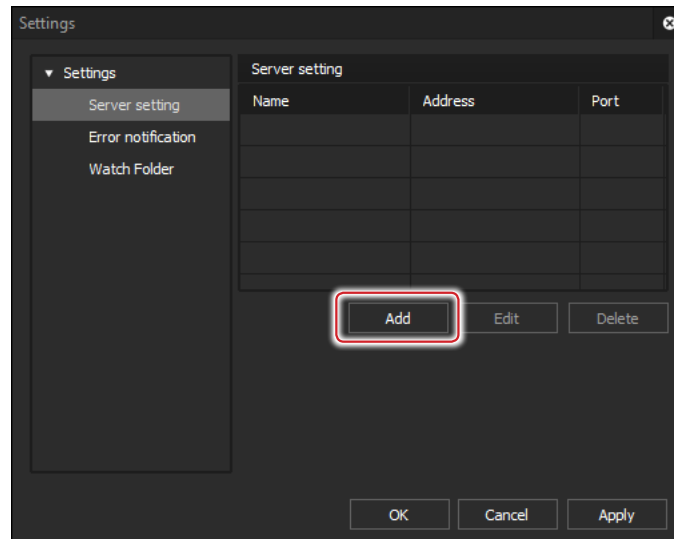
2 Click [Settings].



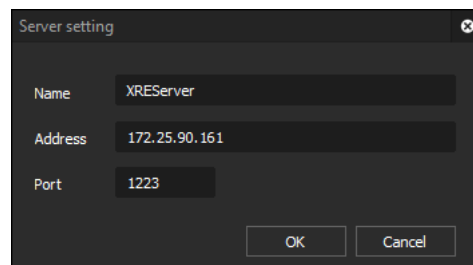
Alternative

- Click [Settings] > [Setting] from the menu bar.

3 Click the [Settings] tree, and then click [Server setting].

4 Click [Add].

The [Server setting] dialog box appears.

❖ **[Server setting] Dialog Box**

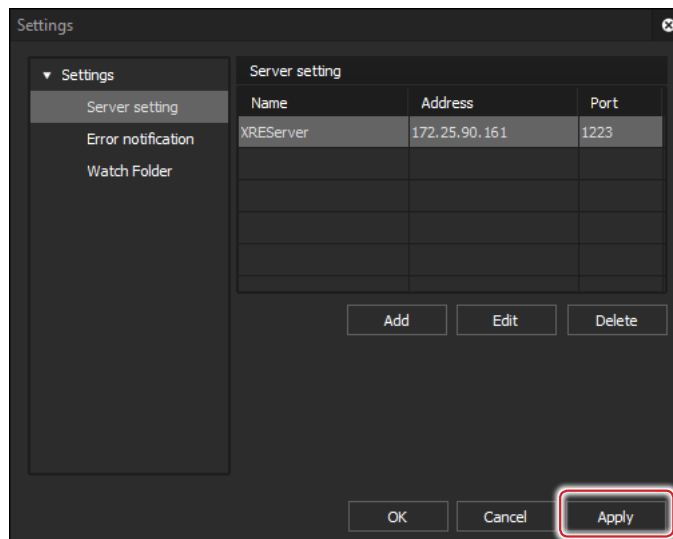
[Name]	Type the name of the controller.
[Address]	Enter the computer name or IP address of the PC you want to use as an controller.
[Port]	Enter a port number. The default setting value is 1223.

Note

- You must specify a port number that is not blocked by the firewall. The firewall is turned off with the standard settings of a base PC.
- For a system whose firewall is turned on for operations, the firewall setting must be changed to unblock the desired port number.
- The system may not work properly if you specify a port number used by other programs. Therefore, you must specify an unused port number.

5 Set each item, and then click [OK].

6 Click [Apply].



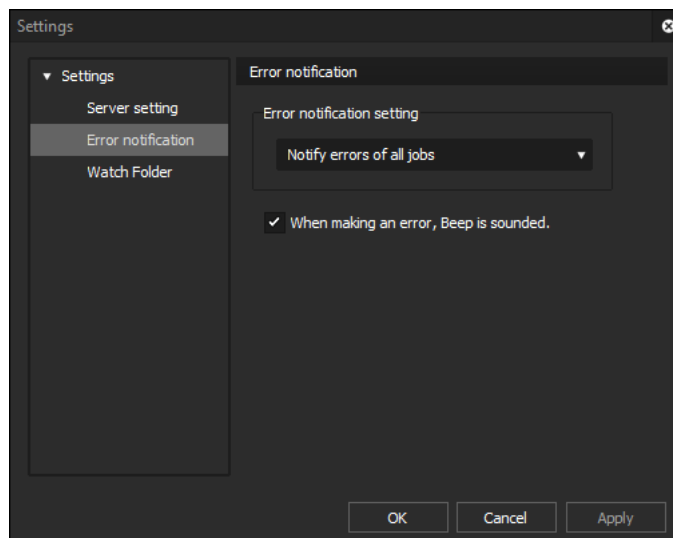
POINT

- If you want to change any setting, select the server to be changed from [Server setting] list and click [Edit].
- If you want to delete any setting, select the server to be deleted from [Server setting] list and click [Delete].

Continue to configure [Error notification].

7 Click the [Settings] tree, and then click [Error notification].

❖ [Error notification]

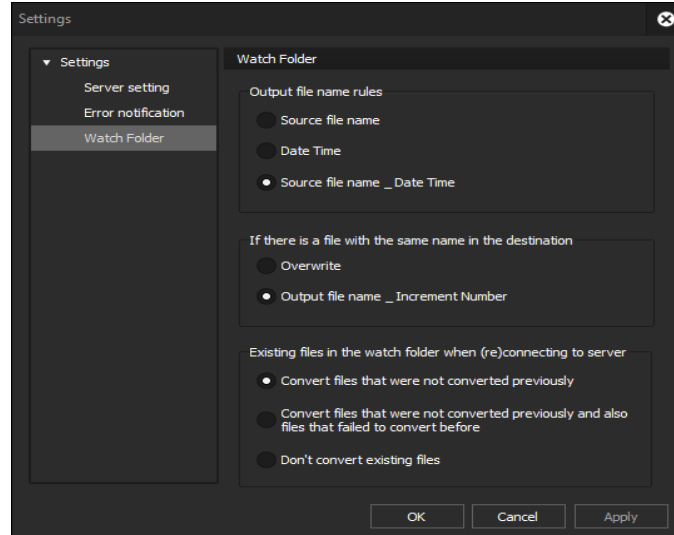


[Error notification setting]	From the list, choose the type of errors you will be notified of. If you choose [Notify errors of all jobs], you will be notified of errors related to all transcoding jobs instructed by the PC to each engine. If you choose [Notify errors of my jobs], you will be notified of errors related to transcoding jobs requested by this Client itself. If you choose [No error notification], no error notification will occur. About error notifications► P107
[When making an error, Beep is sounded.]	Check this option to make a beep sound when delivering error notifications.

8 Set each item, and then click [Apply].

9 To use the Watch folder function, click the [Settings] tree, and then click [Watch Folder].

❖ [Watch Folder]



[Output file name rules]	Set the name of the files output after conversion process. [Source file name] The file name will be “file name before conversion (+ extension)”. [Date Time] The file name will be “date and time at creation of output file (+ extension)”. [Source file name _ Date Time] The file name will be “file name before conversion_date and time at creation of output file (+ extension)”.
[If there is a file with the same name in the destination]	Set the action if there is a file with the same name (including the extension) in the output destination after conversion. [Overwrite] The file will be overwritten. [Output file name _ Increment Number] The output file will be named as “output file name_000 (3-digit increment number) (+ extension)” and saved.
[Existing files in the watch folder when (re)connecting to server]	Set how to process the files remaining in the Watch folder at the time of reconnecting to the controller. [Convert files that were not converted previously] Converts only files that have not been converted. Existing files to which errors occurred will no be converted. [Convert files that were not converted previously and also files that failed to convert before] Converts files that have not converted and existing files to which errors occurred. [Don't convert existing files] Does not perform any process on existing files.

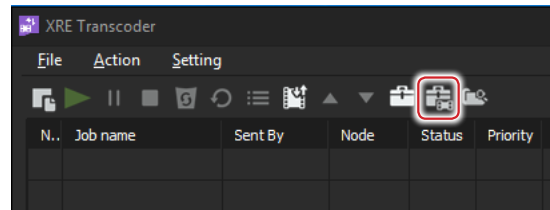
10 Set each item, and then click [OK].

Plug-in settings

Configure the plug-in settings (settings according to file types) as necessary.

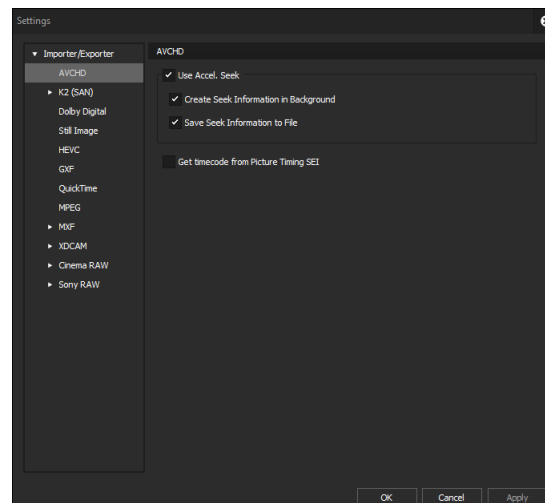
If the file output destination after conversion is an FTP server or K2 Media server, set the output destination in advance in the plug-in settings.

1 Click the [Plug-in settings].



The [Settings] dialog box appears.

❖ [Settings] Dialog Box



Note

- If the terminals for XRE Transcoder, controller, and engine are separate PCs, it is necessary that the plug-in environment of all PCs are identical. If their plug-in environments are different, an error may occur or your data may not be exported properly.

2 Click the [Settings] tree, and then click an item to set.
For details on each item, see the following descriptions.

[HEVC] ► P23

[QuickTime] ► P23

[GXF] ► P24

[MPEG] ► P25

[MXF] ► P26

[XDCAM] ► P27

[Dolby Digital] ► P28

[K2 (SAN)] ► P29

[Cinema RAW] ► P31

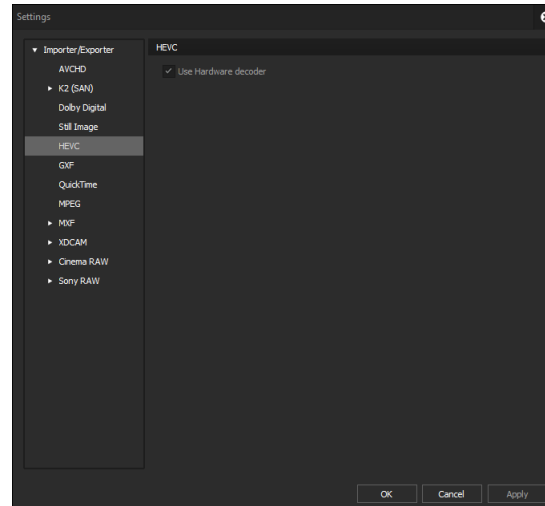
[Sony Raw] ► P31

*The plug-in settings configuration is not supported for [AVCHD] and [Still image].

3 Set each item, and then click [OK].
You can continue to configure other settings by clicking [Apply].

[HEVC]

By utilizing hardware supporting the Quick Sync Video, you can decode the data with the video compression standards HEVC (H.265) with high-speed.



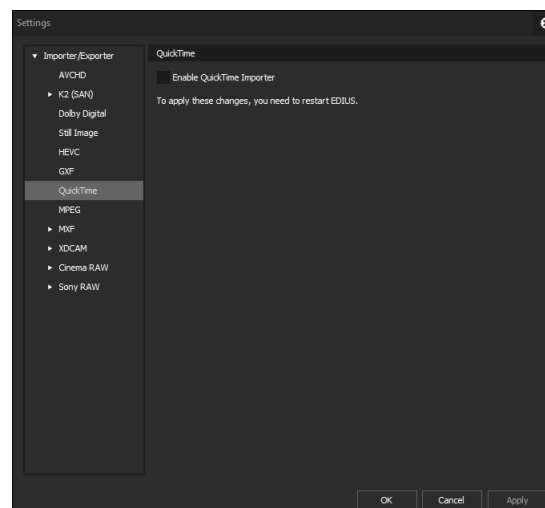
[Use Hardware decoder]

Check this item to use hardware decoding such as Quick Sync Video.

[QuickTime]

Use QuickTime for Windows to configure settings to use 3GP, 3G2, M4V, and other MOV files.

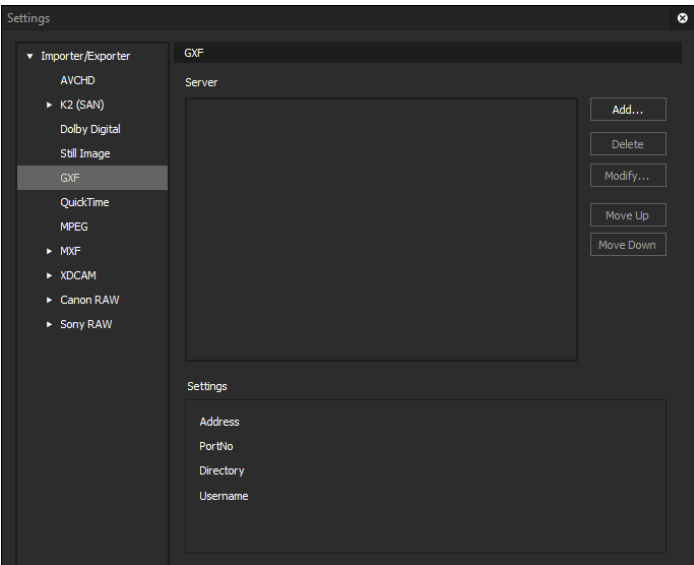
This is displayed only when QuickTime for Windows has been installed.



[Enable QuickTime Importer]	Sources in the format described in “Restrictions after Uninstallation of QuickTime” can be used. Formats Added at Installation of QuickTime►P113
------------------------------------	--

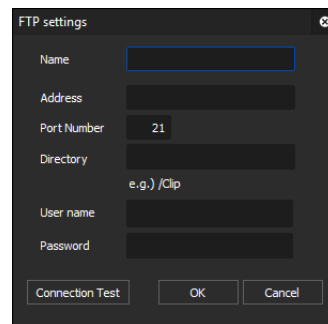
[GXF]

Set the connections of FTP servers when outputting in the GXF format.



[Server]	Display a list of addresses of FTP servers set as export destinations.
[Add]	Click this item to display the [FTP settings] dialog box for adding connection servers. [FTP settings] Dialog Box►P25
[Delete]	Delete servers from [Server].
[Modify]	Change the server settings.
[Move Up]/ [Move Down]	Sort the servers. Select a server from [Server] and move the selected server one place up or down with each click of [Move Up] or [Move Down].
[Settings]	Display the settings of the connection selected in [Server].

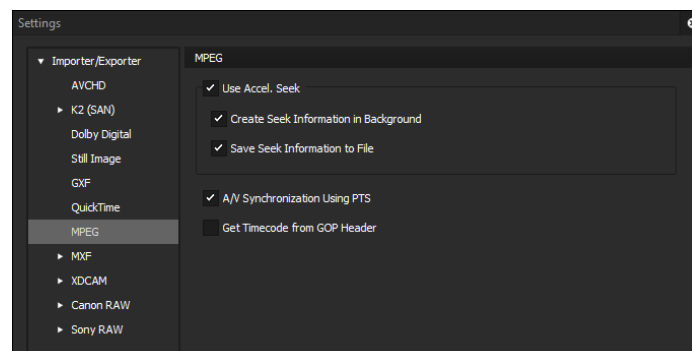
❖ [FTP settings] Dialog Box



[Name]	Enter the name set for the server.
[Address]	Enter the IP address or server name of the FTP server.
[Port Number]	Enter the port number. The default port number is 21.
[Directory]	Enter the directory name of the export destination.
[Username]/ [Password]	Enter the user name and password required when making the connection.
[Connection Test]	Click this item to test the connection to the FTP server using the currently entered user name and password.

[MPEG]

Set faster seeking of MPEG files.



[Use Accel. Seek]	Not supported.
[A/V Synchronization Using PTS]	Check this item to use the PTS (time stamp information) for synchronization of audio and video.

[Get Timecode from GOP Header]	Some MPEG files may have timecode information in their header. Check this item to use timecode information.
---------------------------------------	---

[MXF]

❖ **[FTP Server]**

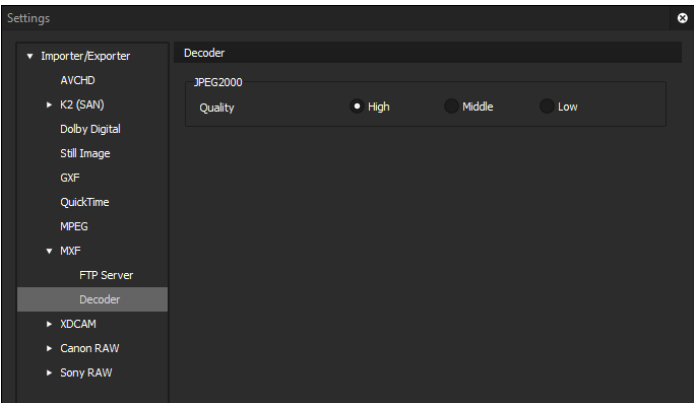
Set the connections of FTP servers when outputting in the MXF format.

The [FTP Server] setting items for MXF are the same as for GXF.

[GXF] ▶ P24

❖ **[Decoder]**

You can set the layer and downsample coefficient to be decoded when importing MXF files in the JPEG2000 format.

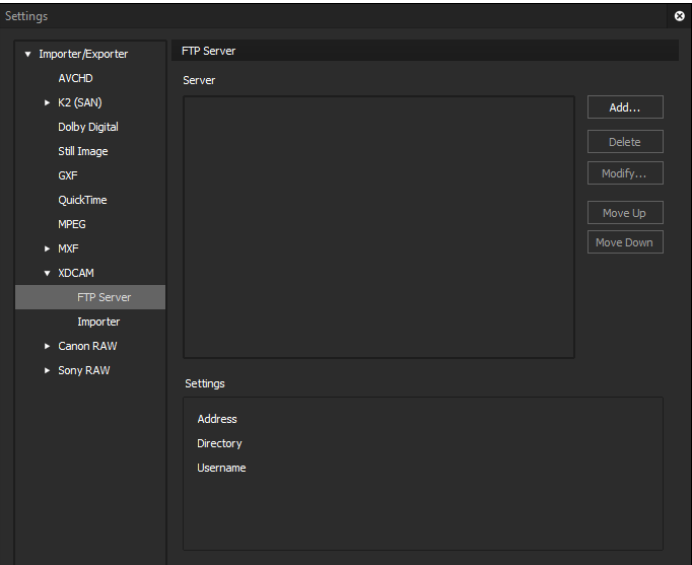


[Quality]	Specify a layer to decode. [High] Decode all layers. [Middle] Decode half of the layers. [Low] Decode single layer.
------------------	--

[XDCAM]

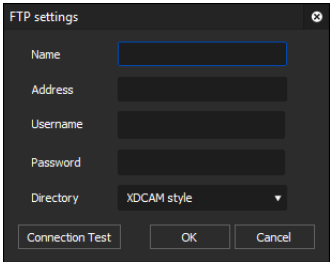
❖ [FTP Server]

Set the connections of FTP servers when outputting in the XDCAM format.



[Server]	Display a list of addresses of FTP servers set as export destinations.
[Add]	Click this item to display the [FTP settings] dialog box for adding connection servers. [FTP settings] Dialog Box▶P28
[Remove]	Delete servers from [Server].
[Modify]	Change the server settings.
[Move Up]/ [Move Down]	Sort the list. Select a server from [Server] and move the selected server one place up or down with each click of [Move Up] or [Move Down].
[Settings]	Display the settings of the connection selected in [Server].

➤ [FTP settings] Dialog Box



[Name]	Enter the name set for the server.
[Address]	Enter the IP address or server name of the FTP server.
[Username]/ [Password]	Enter the user name and password required when making the connection.
[Directory]	Select a directory type from the list.
[Connection Test]	Click this item to test the connection to the FTP server using the currently entered user name and password.

POINT

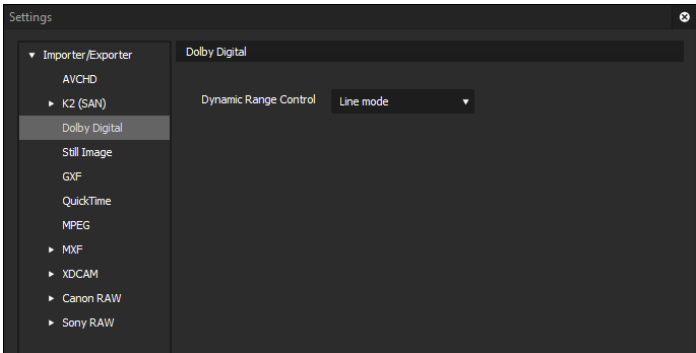
- If connection fails by the connection test, try restarting the XDCAM device and PC after completing the FTP server connection setup.

❖ [Importer]

Not supported.

[Dolby Digital]

Make the settings for exporting Dolby Digital.

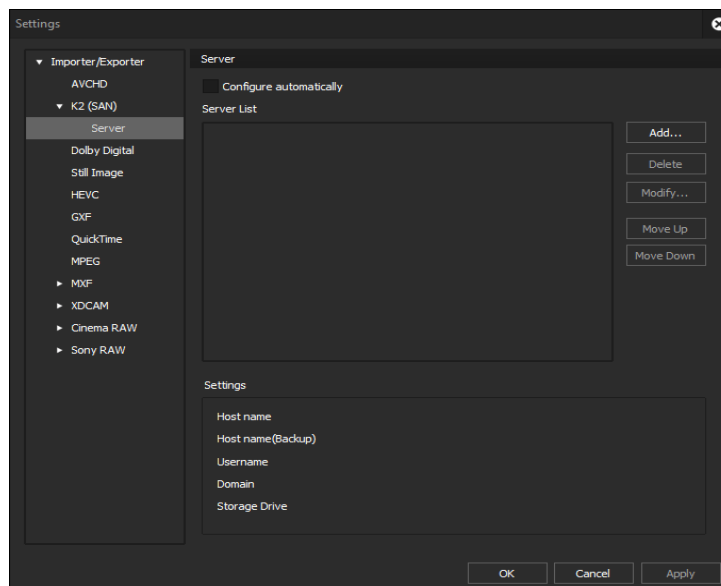


[Dynamic Range Control]	Set the operation mode of the dynamic range when Dolby Digital Professional and Dolby Digital Plus are imported.
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[K2 (SAN)]

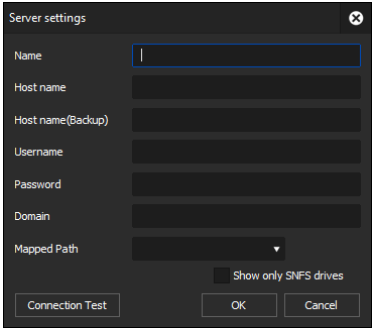
❖ [Server]

Configure connection to K2 Media server.



[Configure automatically]	Check this item to automatically detect the server that can be used (K2 Media server). If the server is not detected, uncheck this item and set manually.
[Server List]	Display a list of servers (K2 Media server) set as export destinations.
[Add]	Click this item to display the [Server settings] dialog box for adding connection servers. [Server settings] Dialog Box►P30
[Delete]	Delete servers from [Server].
[Modify]	Change the server settings.
[Move Up]/ [Move Down]	Sort the servers. Select a server from [Server] and move the selected server one place up or down with each click of [Move Up] or [Move Down].
[Settings]	Display the settings of the connection selected in [Server].

❖ [Server settings] Dialog Box



[Name]	Enter the name set for the server.
[Host Name]	Enter the IP address or server name of the server.
[Host Name (Backup)]	For redundant configuration, enter the IP address or server name of the server that is paired with [Address].
[Username]/ [Password]	Enter the user name and password required when making the connection.
[Domain]	Enter the domain of the server.
[Mapped Path]	Select the drive you assigned on the client PC side to the V: drive of the server.
[Show only SNFS drivers]	Normally, check this item.
[Connection Test]	Click this button to test the connection to the server with the settings entered in the [Server settings] dialog box.

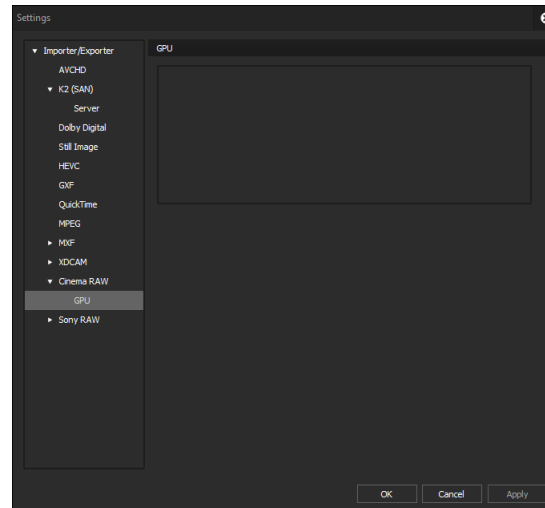
POINT

- To use the product in stand-alone with K2 Summit, set the K2 Summit C: drive to be used for the network drive of the client PC. Check [Show only SNFS drivers] in the [Server settings] dialog box, and then select the assigned drive from the [Mapped Path] list.

[Cinema RAW]

❖ [GPU]

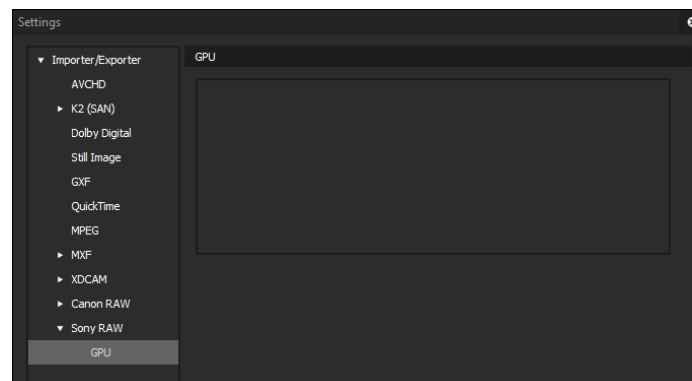
If there are supported GPUs, perform playback acceleration using hardware.



[Sony Raw]

❖ [GPU]

If there are supported GPUs, perform playback acceleration using hardware.



XRE Transcoder Operations Section 5

Note

- Perform the initial settings of XRE Transcoder in advance according to Section 4 - XRE Transcoder Settings.

Specifying and Converting a File

On the PC for XRE Transcoder, specify a desired file and request conversion process (transcoding job) to the controller.

In this section, the procedure common to different output formats are described.

Note

- Make sure that the controller/engine is started up.
- Confirm that the project folder of the XRE system can be referenced from the PC. In addition, make sure that the explorer of the project folder shows the same address as those of the controller and engine.
- For details on the supported formats and restrictions, see Section 6.

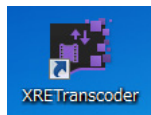
Appendix►P111

- If the file output destination after conversion is an FTP server or K2 Media server, set the output destination in advance in the plug-in settings.

Plug-in settings►P21

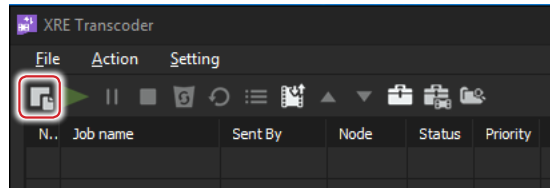
- If the file output destination after conversion is an external device, connect the external device to the PC for engine, and confirm that the power is turned on.

1 Double-click the XRE Transcoder icon on the desktop.



Alternative

- Click the [start] menu, and then click [All Programs] > [Grass Valley] > [XRE Transcoder].

2 Click [Add job].**Alternative**

- Click [File] on the menu bar, and then click [Add job].
[New job] dialog box appears.

3 Click [...] of [Source File:] to select a source file.

- 4** To apply a project template at the time of conversion, check [Project Template], click [...], and select a project template (*.ezpt).

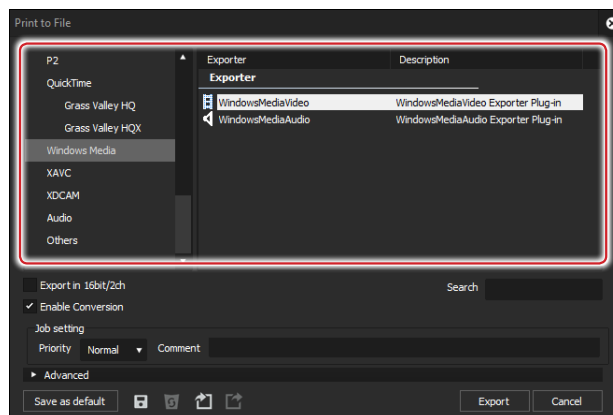
Applying Project Template at Conversion►P50**5** Click [...] of [Format Settings].

The [Print to File] dialog box appears.

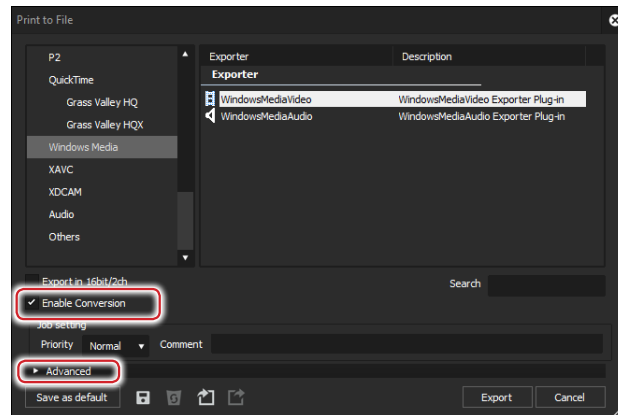
[Print to File] Dialog Box►P35

- 6** Click a category in the category tree, and select an exporter.

See "Section 6" for the output formats and exporter list.

Output format►P113

- 7 If the file sizes (frame sizes or frame rates) of source files and output files need to be changed, select the check box of [Enable Conversion], and click the expansion button of [Advanced] to configure the settings.



[Print to File] (Detailed Settings) Dialog Box►P38

- 8 Click [Export], and configure according to the on-screen instructions.

The setting items will differ depending on the exporter.

Output Setting for Each Format►P59

- 9 Specify a file name and saving destination.
- 10 Click [Save] or [OK].

Note

- If the file output destination after conversion is a desired folder, you need to specify a folder that can be referenced from all of the PCs for XRE Transcoder/controller/engine and that shows an identical address on the explorer.

- 11 Click [OK] on the [New job] dialog box.

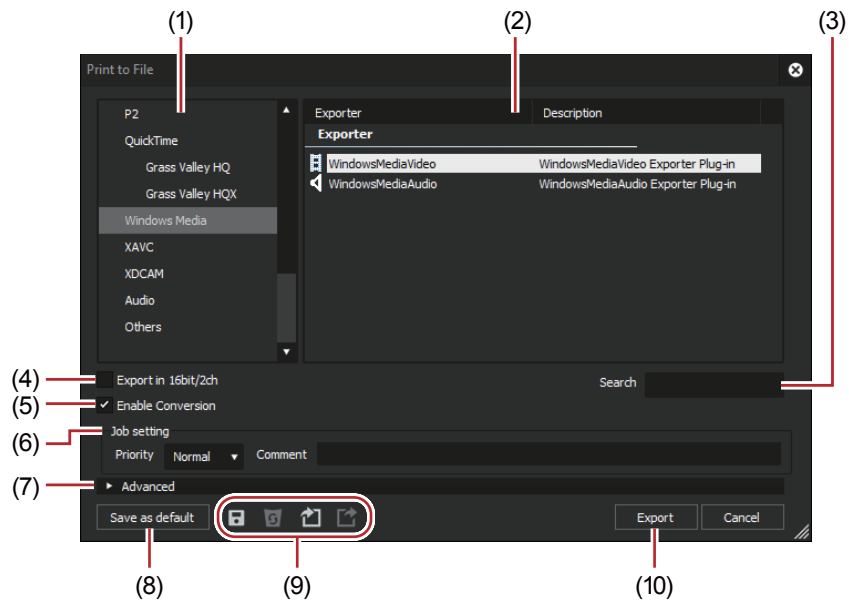
The transcoding job is registered to XRE, and the conversion process is performed. The progress status of the conversion process can be checked in the job list of XRE Transcoder.

Checking job status►P104

POINT

- The exporters can be registered as presets.
Registering Exporter Settings as Preset►P102

[Print to File] Dialog Box



(1) Category tree

Select a category to narrow down the exporter options.

[Current default]

Display the default exporters.

[Recently used]

Display exporters in a list in the order of most recently used first.

[My presets]

Display the exporter presets registered by the user in a list.

[All]

Display all exporters in a list. You can narrow the exporter options by selecting a category by format.

(2) Exporter/Preset list	Display the exporters within a selected category in a list. [Preset] Display exporter presets stored as default and exporter presets stored by the user. Registering Exporter Settings as Preset► P102 📺: Video exporter Indicates exporters to export a file that includes a video element. 🔊: Audio exporter Indicates exporters to export an audio element. 🔄: A preset where conversion is performed Check [Enable Conversion] to display all exporter presets including exporter presets with a format that differs from the source file.
(3) [Search]	Search the exporters.
(4) [Export in 16bit/2ch]	Check this item to perform export in 16-bit/2ch regardless of the audio format of the source file or selected preset exporter. It is convenient to leave it checked when a multi-channel source file is to be exported and used with software by another manufacturer.
(5) [Enable Conversion]*	Check this item to enable conversion processing used to export in formats that differ from the source file.
(6) [Job setting]*	[Priority] Choose the priority from [High], [Normal], or [Low] in terms of the order to perform transcoding jobs. If you set the higher priority setting, the transcoding job will be processed with higher priority. [Comment] Enter a comment here.
(7) [Advanced]	Click the expand button to configure conversion processing when exporting in a format that differs from the source file. [Print to File] (Detailed Settings) Dialog Box► P38

(8) [Save as default]	Select an exporter in the exporter/preset list, and click [Save as default] to save the settings in [Current default].
(9) Preset operation buttons	 : [Save preset] Register the exporter selected in the exporter/preset list together with the conversion processing configured under [Advanced] as a preset exporter. Registering Exporter Settings as Preset ► P102  : [Delete preset] Delete the preset exporter selected in the exporter/preset list. The only exporter presets that can be deleted are those that have been registered by the user.  : [Import preset] Import exporter presets.  : [Export preset] Export the preset exporter selected in the exporter/preset list.
(10) [Export]/[OK]	Output according to the configured settings.

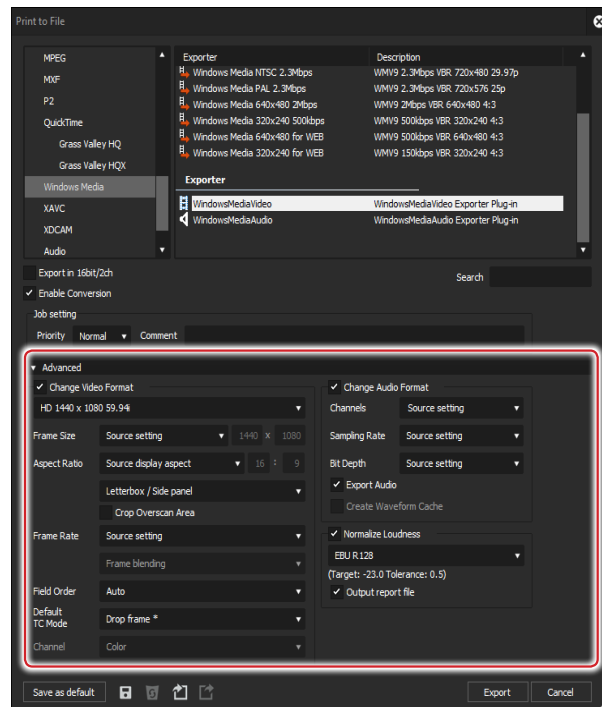
*Not displayed in the [Print to File] dialog box of the Watch folder.

POINT

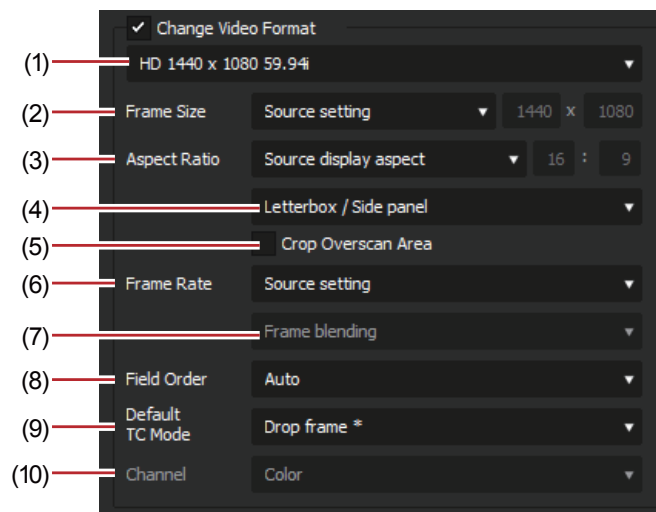
- To export a multi-channel source file to use with software by another manufacturer, either check [Export in 16bit/2ch] or select an exporter in 16-bit/2ch audio format.

❖ [Print to File] (Detailed Settings) Dialog Box

If a preset exporter was selected, you will switch to the export format settings of that preset exporter.



➤ Setting [Change Video Format]



Checking [Change Video Format] exports files converting to the video format set in the following items.

“*” in the right field of a setting indicates that the setting agrees with the source file.

(1) Video profile list	Display a list of commonly used video formats. When you select a video format from the list, [Frame Size] and other items will switch to the selected video format settings.
(2) [Frame Size]	Select a frame size from the list. Select [Custom] to enter a setting value in pixels.
(3) [Aspect Ratio]	Select an aspect ratio from the list. If you select [Custom Display Aspect] or [Custom Pixel Aspect Ratio], you can set the aspect ratio by entering values. If you have set a customized aspect ratio, make sure to select a conversion method from the aspect ratio conversion setting.
(4) Aspect ratio conversion settings	If the aspect ratio set in [Aspect Ratio] differs from the source file, select which method to use to convert the aspect ratio from the list. Setting the Aspect Ratio Conversion ► P42
(5) [Crop Overscan Area]	Check this item to convert the aspect ratio after cropping with the overscan size. The overscan size differs according to the source file.
(6) [Frame Rate]	Select a frame rate from the list. If you have set a customized frame rate, be sure to select a conversion method in the frame rate conversion settings.
(7) Frame rate conversion settings	If the frame rate set in [Frame Rate] differs from the source file, select from the list which conversion to perform. If you select [Frame blending], supplemental frames will be interpolated by combining the frame before and after each supplemental frame. If you select [Nearest frame], the nearest frame will be used to make supplementary frames.
(8) [Field Order]	Select a field order from the list. If you select [Auto], the optimum perceived field order will be selected automatically.
(9) [Default TC Mode]	Select whether the video to be exported displays the drop frame timecode or the non drop frame timecode as default.

(10) [Channel]	This can be set when an exporter to which the alpha channel is retained and can be output to is selected. Select whether to output only the color channel or to output the color channel and the alpha channel.
-----------------------	---

➤ **Setting [Change Audio Format]**

Checking [Change Audio Format] changes the audio format so it is exported with the below-described items. However, if [Export in 16bit/2ch] has been checked the [Channels] and [Sample Format] settings will be fixed.

“*” in the right field of a setting indicates that the setting agrees with the source file.

[Channels]	Select the number of channels from the list. If the selected number of channels is fewer than the source file, the channels will be exported in order from 1ch. Select [2ch] to export a multi-channel source file to be used with software of another company.
[Sampling Rate]	Select a sampling rate from the list.
[Sample Format]	Select an audio quantization bitrate from the list. Select [16bit] to export a multi-channel source file to be used with software of another company.
[Export Audio]	Check this item to export the audio part.
[Create Waveform Cache]	Check this item to create waveform cache (waveform representation of audio).

➤ **[Remove Ancillary data]**

This can be set when a compatible exporter is selected. Check this item to export with ancillary data (including closed captions) removed.

Note

- Even if it is unchecked, when the frame size, after the frame rate or aspect ratio is corrected, is different from that of source file, ancillary data will be removed.

➤ **[Remove Audio Bitstream]**

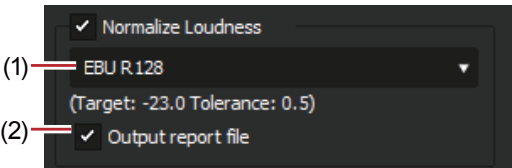
This can be set when a compatible exporter is selected. Check this item to export with the audio bitstream removed.

Note

- Even if this item is unchecked, when the frame rate or audio sampling rate differs from that of the source file, audio bitstream will be removed.

➤ **[Normalize Loudness] setting**

Checking this item enables to measure the loudness and perform normalization at the same time when you export a file.
For normalization, the volume can be adjusted according to a predefined loudness reference value.



(1) Loudness reference value	Select the preset to use as the reference for loudness measurement and normalization.
(2) [Output report file]	Check this item to export the loudness adjustment details and measurement result values of the target file to a text file. The text file will be saved in the project folder of XRE system. If project files are to be exported to FTP or some other destinations, they will be saved in the “Log” folder in the project folder.

POINT

- Clicking [Save preset] in the [Print to File] dialog box will create an exporter preset that contains the setting details of [Normalize Loudness].

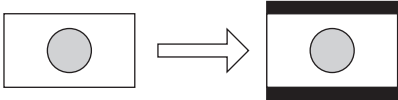
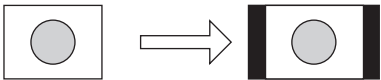
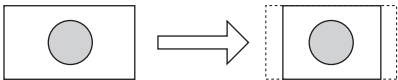
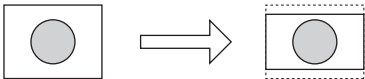
Note

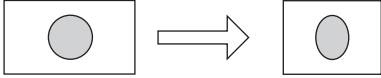
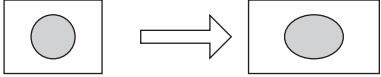
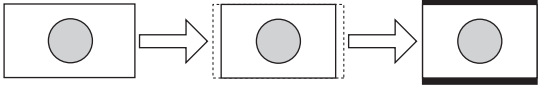
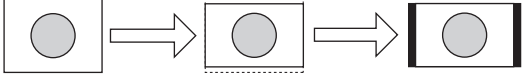
- If the audio of the project to be normalized is muted or low, after a message [The audio adjustment level is too large.] is displayed, export may be canceled. This is performed to prevent low-volume sound such as noise from being unintentionally adjusted louder.
- Normalization is only applied to source files with audio sampling rate 48 kHz. For sources with a sampling rate other than 48 kHz, normalization can be performed by first applying the project template set to “48kHz” for [Audio Preset] in the [Project Settings] (Detailed Settings) dialog box, and then converting it.

Applying Project Template at Conversion▶ P50

➤ Setting the Aspect Ratio Conversion

For the items in the list of the aspect ratio conversion setting to be set in the [Print to File]/[Print to File] (Detailed Settings) dialog box, what follows are example descriptions of converting a 16:9 screen to a 4:3 screen, and a 4:3 screen to a 16:9 screen.

Item	Original screen → Converted screen	Description
Letter box / Side panel	16:9 → 4:3	The 16:9 screen is displayed in the center of a 4:3 screen, and a letter box effect is added above and below. 
	4:3 → 16:9	The 4:3 screen is displayed in the center of a 16:9 screen, and side panels are added at the edges. 
Side cut / Crop top and bottom	16:9 → 4:3	The left and right sides of the 16:9 screen are cropped to fit the 16:9 screen to a 4:3 screen size. 
	4:3 → 16:9	The top and bottom parts of the 4:3 screen are cropped to fit the 4:3 screen to a 16:9 screen size. 

Item	Original screen → Converted screen	Description
Anamorphic	16:9 → 4:3	The 16:9 screen is compressed horizontally to fit a 4:3 screen size. The frame aspect ratio is not conserved. 
	4:3 → 16:9	The 4:3 screen is stretched horizontally to fit a 16:9 screen size. The frame aspect ratio is not conserved. 
Semi-letter box (14:9/13:9)	16:9 → 4:3	The 16:9 screen is cropped to a 14:9 or 13:9 screen size, displayed in the center of a 4:3 screen and a letter box effect is added above and below. 
	4:3 → 16:9	The 4:3 screen is cropped to a 14:9 or 13:9 screen size, displayed in the center of a 16:9 screen and side panels are added at the edges. 

Converting a File Automatically (Watch folder function)

You can configure the settings so that a file is requested to be automatically processed for format conversion (as a transcoding job) once it is added in the Watched folder.

The procedures to configure the Watch folder (Watched folder, output destination after conversion, and output setting) on the PC for XRE Transcoder are described.

Note

- Make sure that the controller/engine is started up.
- Confirm that the project folder of the XRE system can be referenced from the PC. In addition, make sure that the explorer of the project folder shows the same address as those of the controller and engine.
- For details on the supported formats and restrictions, see Section 6.

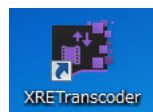
Appendix►P111

- If the file output destination after conversion is an FTP server or K2 Media server, set the output destination in advance in the plug-in settings.

Plug-in settings►P21

- When you use the Watch folder function, files (such as P2 MXF, etc.) that have folder structures cannot be converted.
- When you use the Watch folder function, an external device cannot be specified as the output destination.

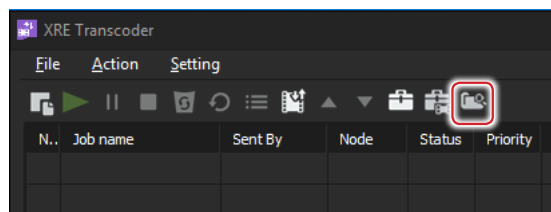
1 Double-click the XRE Transcoder icon on the desktop.



Alternative

- Click the [start] menu, and then click [All Programs] > [Grass Valley] > [XRE Transcoder].

2 Click [Watch folder setting].

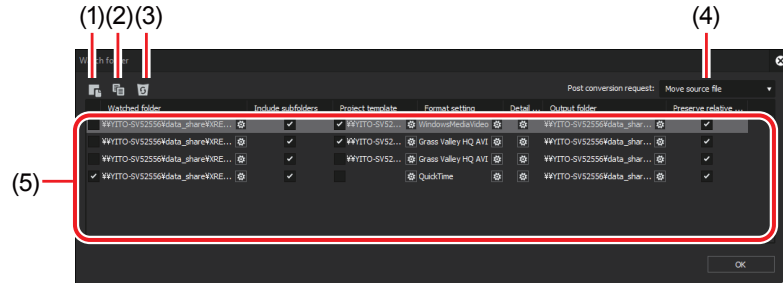


The [Watch folder] dialog box appears.

Alternative

- Click [Settings] on the menu bar, and then click [Watch folder setting].

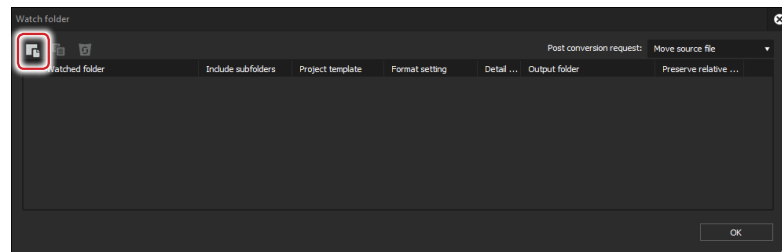
❖ [Watch folder] Dialog Box



(1) [Add watch folder]	Add a new Watch folder.
(2) [Copy]	Copy selected Watch folders from the list.
(3) [Delete]	Delete selected Watch folders from the list.
(4) [Post conversion request:]	Select an action after conversion of a file from the list. [Move source file] Move the source file to the “Converted Source” folder created in the Watched folder. [Delete source file] Delete the source file from the Watched folder. [None] No action will be performed.
(5) Watch folder list	Added Watch folders are listed, and their setting details can be checked and modified. Select the check box to activate the Watch folder. [Watched folder] The Watched folder is displayed. Click  to modify the Watched folder. [Include subfolders] Check this option to include subfolders in the Watch folder as conversion target. [Project template] Check this option to apply project template at the time of conversion. Click  to change the project template.

	[Format setting] The exporter name is displayed. Clicking the  displays the [Print to File] dialog box where you can modify the settings. [Print to File] Dialog Box►P35 [Detail setting] Clicking the  displays the [Detail setting] dialog box where you can modify the settings. [Detail setting] Dialog Box►P48 [Output folder] The output destination is displayed. Clicking the  allows to modify the output destination. [Preserve relative path] This option is available when [Include subfolders] is checked. Check this option to output subfolders of the Watch folder in the same folder structures.
--	--

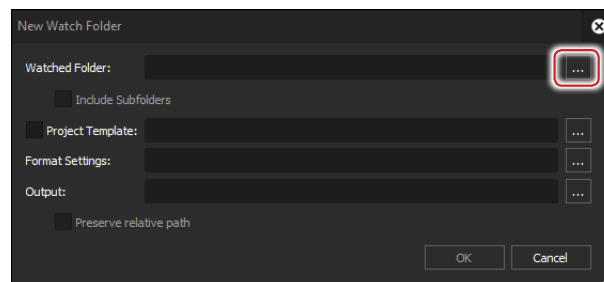
3 Click [Add watch folder].



[New Watch Folder] dialog box appears.

4 Click [...] of [Watched folder] to select a folder to be watched.

Check [Include subfolders] to include subfolders in the Watch folder as conversion target.



Note

- For the Watched folder, you need to specify a folder that can be referenced from all of the PCs for XRE Transcoder/controller/engine and that shows an identical address on the explorer.

- 5 To apply a project template at the time of conversion, check [Project Template], click [...], and select a project template (*.ezpt).

Applying Project Template at Conversion►P50

- 6 Click [...] of [Format Settings].

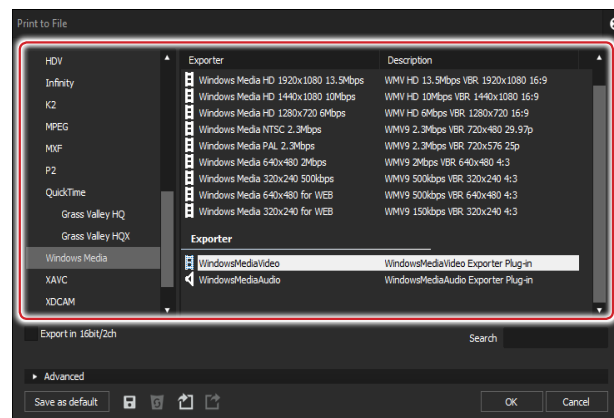
The [Print to File] dialog box appears.

[Print to File] Dialog Box►P35

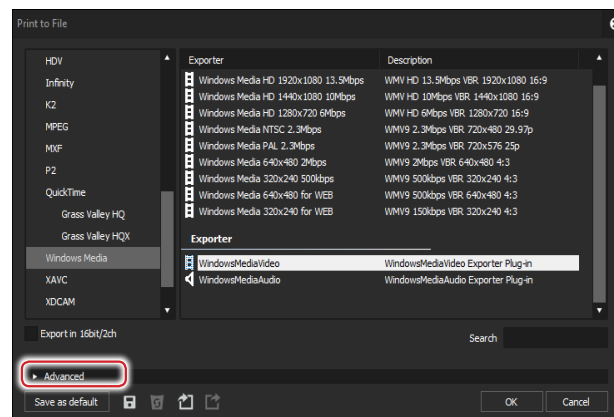
- 7 Click a category in the category tree, and select an exporter.

See "Section 6" for the output formats and exporter list.

Output format►P113



- 8 If the file sizes (frame sizes or frame rates) of source files and output files need to be changed, click the expansion button of [Advanced] to configure the settings.

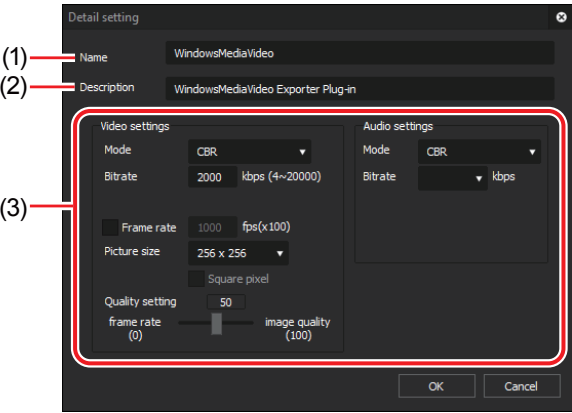


[Print to File] (Detailed Settings) Dialog Box►P38

9 Click [OK].

10 Make output settings in the [Detail setting] dialog box.

❖ [Detail setting] Dialog Box

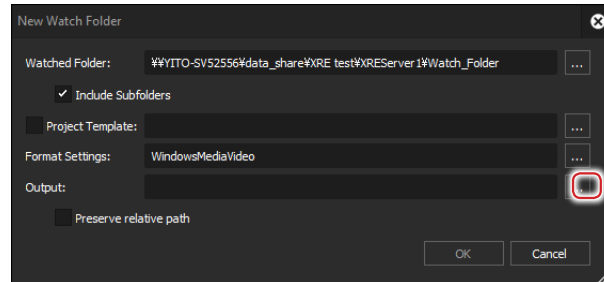


(1) [Name]	The exporter name is displayed. The details can be edited. After the details has been edited, the changes will be reflected on the [Format setting] in the [Watch folder] dialog box.
(2) [Description]	The explanation of the exporter is displayed. The details can be edited.
(3) Output settings	The configurable items will differ depending on the output format. See the descriptions in "Output Setting for Each Format" for more details. Output Setting for Each Format▶P59

11 Click [OK].

- 12** In the [New Watch Folder] dialog box, click [...] of [Output] to set the output destination.

To output subfolders of the Watch folder in the same folder structures, check [Preserve relative path].



To output files to the predefined FTP server or K2 Media server, select the server from the list and click [OK].

Note

- You need to specify a folder that can be referenced from all of the PCs for XRE Transcoder/controller/engine and that shows an identical address on the explorer.

- 13** Click [OK] on the [New Watch Folder] dialog box.

- 14** Click [OK] on the [Watch Folder] dialog box.

If a file is added to the Watched folder while XRE Transcoder is running, the transcoding job will be registered to XRE. Then the conversion process will be performed. The progress status of the conversion process can be checked in the job list of XRE Transcoder.

Checking job status ► P104

POINT

- Watch folder settings will be maintained even after XRE Transcoder is restarted.

Applying Project Template at Conversion

You can apply a project template created on EDIUS when converting a file with XRE Transcoder.

Project templates can be applied also in the conversion process using the Watch folder function.

1 Create a project template on EDIUS.

Place a clip named “#placeholder” on the timeline and make effect and layouter settings.

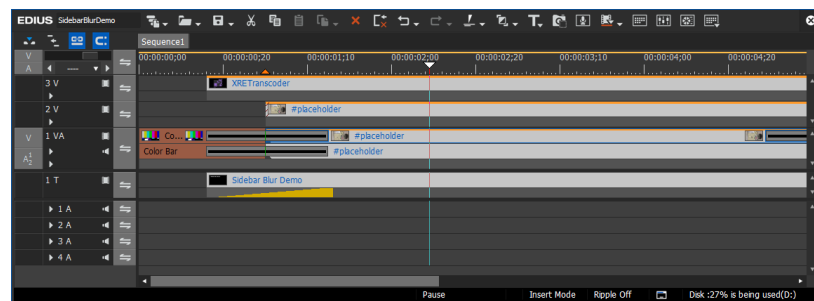
At the time of conversion with XRE Transcoder, the part “#placeholder” will be replaced by the conversion target file.

Editing Example of Project Template (Watermark) ▶ P51

Editing Example of Project Template (Sidebar Blur) ▶ P53

Editing Example of Project Template (Playback Speed Change) ▶ P56

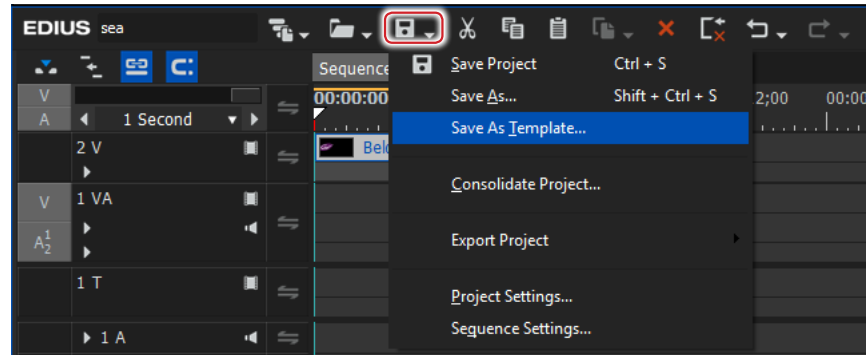
Example) Editing example of timeline



Note

- The number of audio channels of the project template must be more than that of the file to be converted.
- You need to place audio tracks and set the channel map. This setting will be used for conversion.
- The duration of “#placeholder” on the timeline must be shorter than the length of the file to be converted. When the file is converted with XRE Transcoder, the duration of “#placeholder” will be expanded along with the duration of the file to be converted.

- Click [Save Project] for EDIUS, and then click [Save As Template], to save the file to a specified location.



Save the file in a folder that can be accessed from the PC where XRE Transcoder has been installed, controller, and all engine PCs, which shows the same address on the explorer.

- Convert the file with XRE Transcoder.

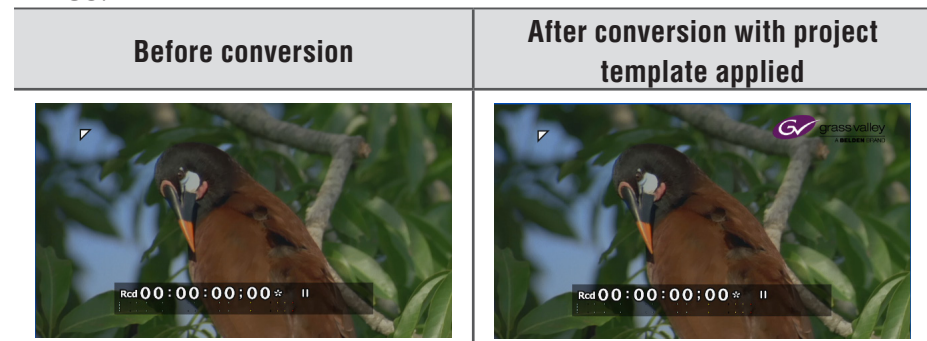
Specifying and Converting a File►P32

Converting a File Automatically (Watch folder function)►P44

The part “#placeholder” of the project template will be replaced by the conversion target file.

Editing Example of Project Template (Watermark)

In this section, the procedure to add a watermark (still image) on the upper right is described as an example of project template editing on EDIUS.



- Register a temporary video file to the bin with the name “#placeholder”.
- Place the “#placeholder” clip in step 1 on the 1VA track of the timeline.

Set the duration of the clip shorter than that of the file to be converted.

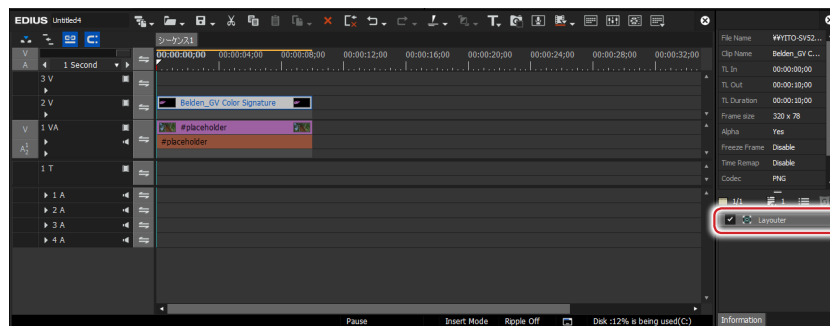
3 Register a watermark image to the bin.

Note

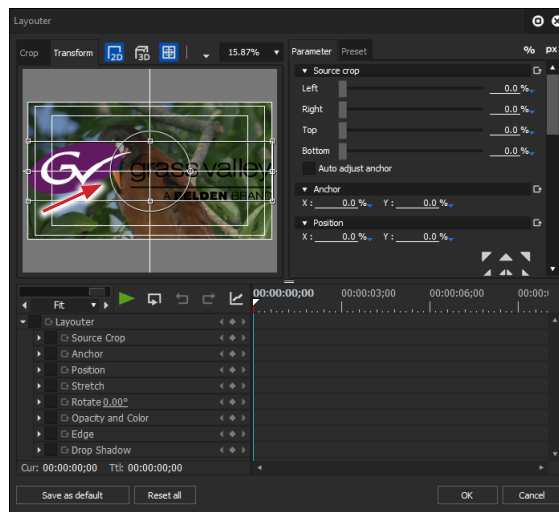
- Since the watermark image is used when a file is converted, save the file in a folder that can be accessed from all PC/controller/engine where XRE Transcoder has been installed, which shows the same address on the explorer.

4 Place the watermark image on the 2V track of the timeline.

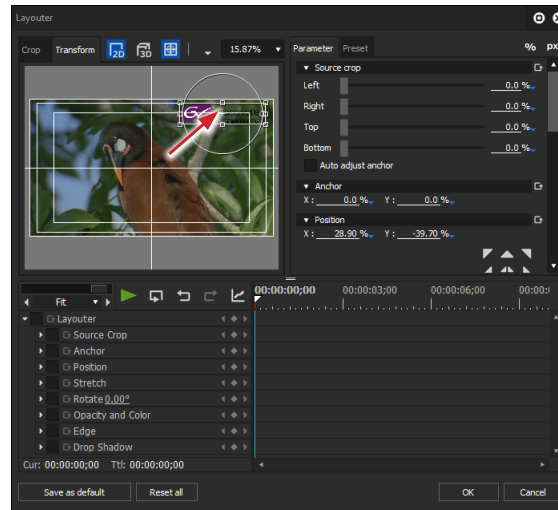
5 Select the clip placed in step 4, and double-click [Layouter] in the [Information] palette.



6 Click the [Transform] tab and drag the operation handle in the preview window, to adjust the size of the watermark image.



7 Drag the watermark image to adjust the position.



8 Click [OK] on the [Layouter] dialog box.

Editing operation has been completed.

Editing Example of Project Template (Sidebar Blur)

In this section, the procedure to add blur that look natural at both sides of a portrait-oriented video shot with a smartphone etc. is described as an example of project template editing on EDIUS.

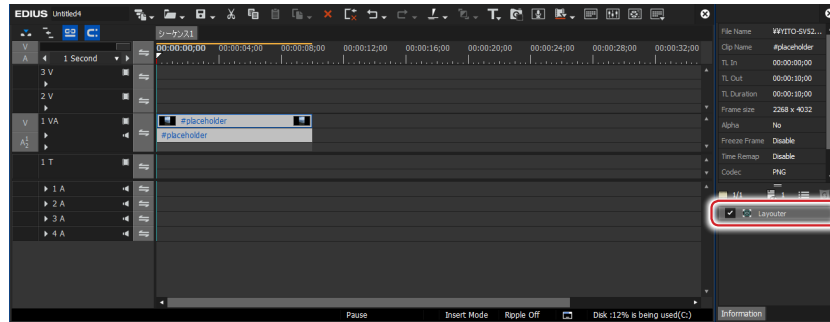
Before conversion	After conversion with project template applied
	

1 Register a temporary video file shot with a smartphone etc. to the bin with the name “#placeholder”.

2 Place the “#placeholder” clip in step 1 on the 1VA track of the timeline.

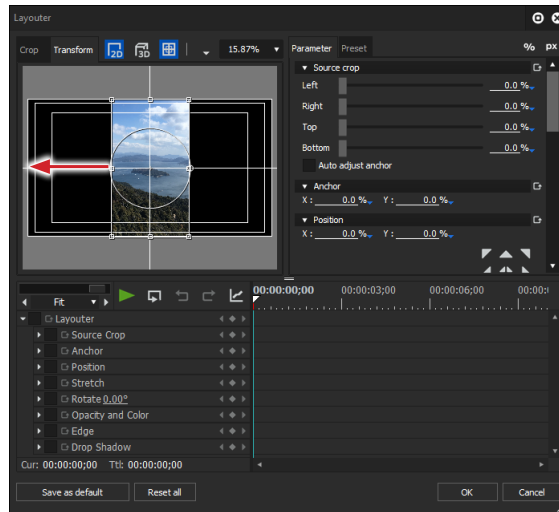
Set the duration of the clip shorter than that of the file to be converted.

- 3 Select the “#placeholder” clip on the timeline, and double-click [Layouter] in the [Information] palette.



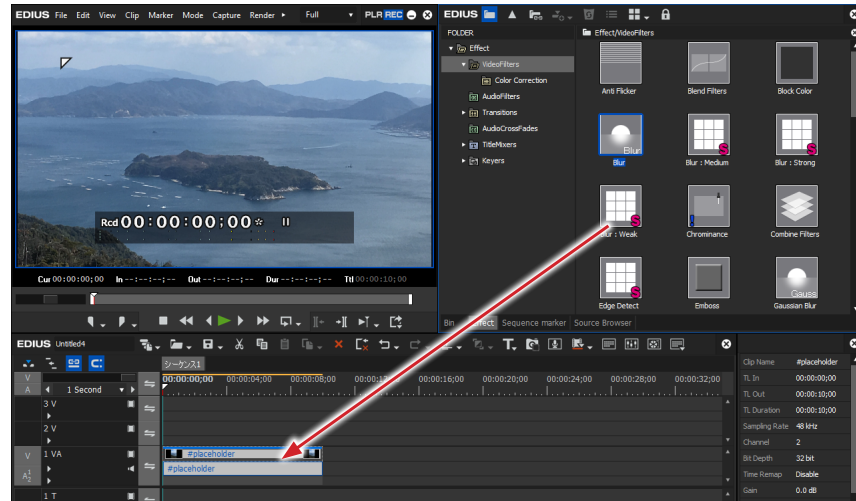
[Layouter] dialog box appears.

- 4 Click the [Transform] tab and drag the operation handle in the preview window, to enlarge the image to the right and left edges.

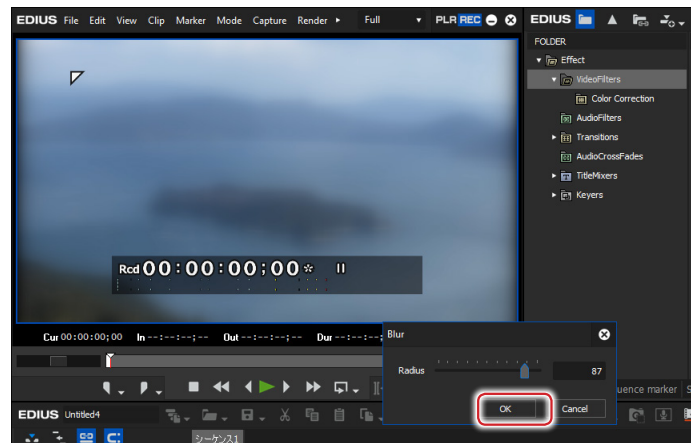


- 5 Click [OK] on the [Layouter] dialog box.

- 6 Apply [Blur] on the [Effects] palette onto the “#placeholder” clip (video part) on the timeline.



- 7 Double-click [Blur] in the [Information] palette.
- 8 Adjust the blur appearance in the [Blur] dialog box and click [OK].



- 9 Place the “#placeholder” clip in step 1 on the 2V track of the timeline.

Editing operation has been completed.

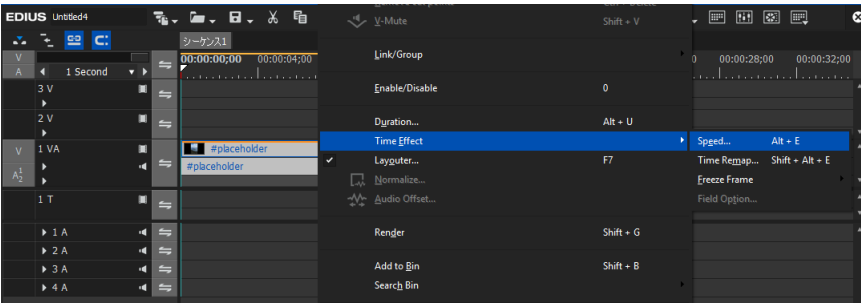
Editing Example of Project Template (Playback Speed Change)

In this section, the procedure to modify the speed is described as an example of project template editing on EDIUS.

- 1 Register a temporary video file to the bin with the name “#placeholder”.
- 2 Place the “#placeholder” clip in step 1 on the 1VA track of the timeline.

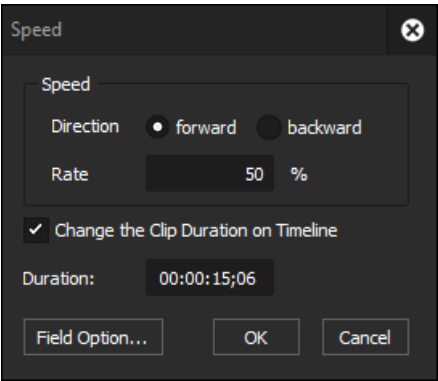
Set the duration of the clip shorter than that of the file to be converted.

- 3 Right-click on the “#placeholder” clip on the timeline, and click [Time Effect] → [Speed].



- 4 Modify each item in the [Speed] dialog box.

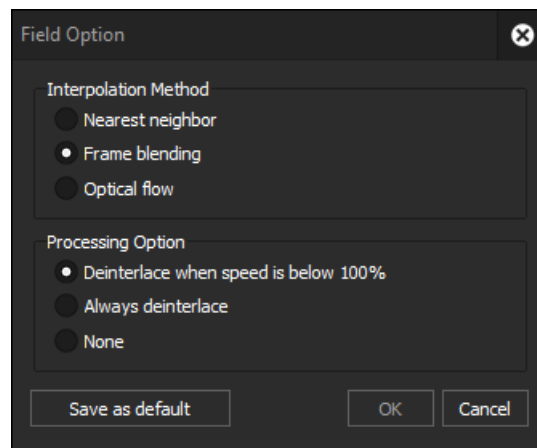
❖ [Speed] Dialog Box



[Speed]	[Direction]
	Select the playback direction of the clips.

	[Rate] Enter the ratio to the original speed (100%). Since the speed is changed referenced to the In point, when [Change the Clip Duration on Timeline] is unchecked, the upper limit of Rate that can be entered changes according to the margin on the Out point side of the source clip. When there is no margin on the Out point side, a Rate greater than 100% cannot be entered.
[Change the Clip Duration on Timeline]	Check this item to change the duration of clips on the timeline according to the speed (value of [Rate]) of the clip. The duration of the clip can be entered at [Duration] to change the speed. When this item is unchecked, the speed can be changed without changing the duration of the clip on the timeline.
[Field Option]	The [Field Option] dialog box appears. [Field Option] Dialog Box ► P57

❖ [Field Option] Dialog Box



[Interpolation Method]	[Nearest neighbor] The length of the clip is adjusted by skipping frames or continuously displaying the same frame.
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	[Frame blending] Adjacent frames are composed and a new frame is automatically generated to interpolate between the frames. [Optical flow] The motion in adjacent frames are analyzed by pixels and a new frame is automatically generated so that the motion of the subject is played back smoothly.
[Processing Option]	Set the processing option to reduce flicker during slow motion. Set [Deinterlace when speed is below 100%] when video is affected by the scanning line and flickers when a slower playback speed has been set.
[Save as default]	Click this item to save the current settings as defaults. When a clip is placed on the timeline, the default [Field Option] is always applied.

5 Click [OK].

Editing operation has been completed.

Output Setting for Each Format

The output setting screens for each format are described.

In this section, the output setting in "Specifying and Converting a File" step 8 is explained.

For the output destination setting in step 12 and the output setting of the [Detail setting] dialog box in step 10 in "Converting a File Automatically (Watch folder function)", the setting items are the same.

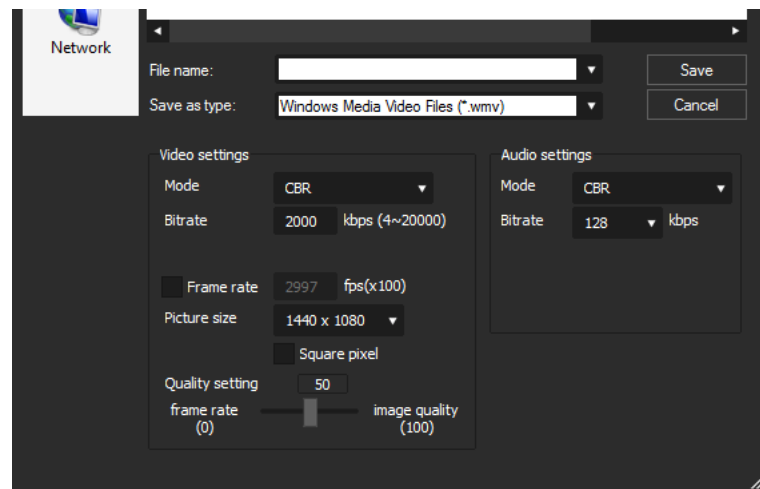
Note

- When you use the Watch folder function, an external device cannot be specified as the output destination.

Windows Media Video Format

Category name in [Print to File] dialog box	Exporter
[Windows Media]	[WindowsMediaVideo]

❖ [WindowsMediaVideo] Dialog Box

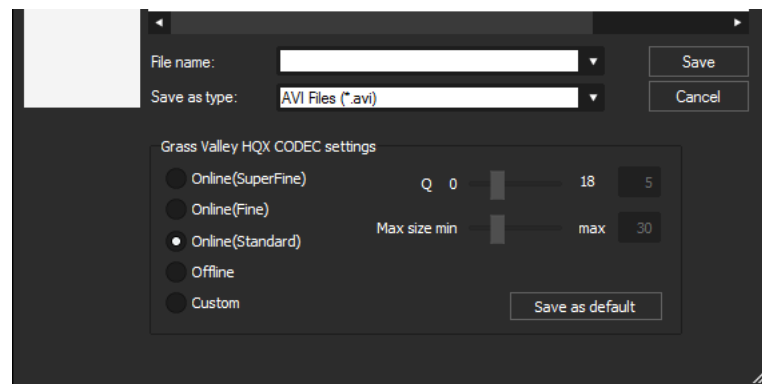


[Video settings]	[Mode] [CBR] is a fixed transfer mode. It encodes with a constant bitrate regardless of movement or image complexity. Enter a value for [Bitrate]. [CBR (2-pass)] performs encoding after an analysis for movement and image complexity. [VBR (quality based)] is a variable transfer mode of direct conversion. The allotted bitrate is varied according to movement and image complexity. Enter a value for [Quality]. [VBR (2-pass)] is a variable transfer mode. The allotted bitrate is varied after an analysis of movement and image complexity. Enter the average bitrate in [Bitrate], and maximum bitrate in [Max]. [Frame rate] Check this item to change the frame rate (1-60 fps). To set to 29.97 fps, enter “2997”. [Picture size] The image size can be set by selecting from the list. Checking [Square pixel] sets the image aspect ratio at 1:1. Check this if the video is made vertically long or horizontally long by the playback device. [Quality setting] Move the slider depending on the relative importance of [frame rate (0)] (prioritizes smooth movement) and [image quality (100)].
[Audio settings]	[Mode] [CBR] is a fixed transfer mode. It encodes with a constant bitrate regardless of audio complexity. Select a bitrate from the [Bitrate] list. [CBR (2-pass)] performs encoding after an analysis for audio complexity. [VBR (quality based)] is a variable transfer mode. The allotted bitrate is varied according to audio complexity. Select an average bitrate from the [Quality] list.

AVI Format

Category name in [Print to File] dialog box	Exporter
[AVI]	[Grass Valley HQ AVI] [Grass Valley HQX AVI] [Grass Valley Lossless AVI] [DV AVI] [DVCPRO50 AVI] [DVCPRO HD AVI] [Uncompressed (RGB) AVI] [Uncompressed (RGBA) AVI] [Uncompressed (UYVY) AVI] [Uncompressed (YUY2) AVI] [Uncompressed (v210) AVI]

❖ [Grass Valley HQ AVI] / [Grass Valley HQX AVI] Dialog Box



Codec settings	[Online(SuperFine)] This item can be selected for a Grass Valley HQX codec. This setting provides the highest image quality, though the file size increases. Select this when importing at high image quality is needed. This item cannot be selected for a Grass Valley HQ codec. [Online(Fine)] This setting provides high image quality, though the file size increases. Select this when importing at high image quality is needed. [Online(Standard)] Normally, you can get sufficient image quality at this setting.
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	[Offline] Select this item to encode at a lower bitrate. [Custom] [Q] and [Max size] can be adjusted. [Q] adjusts image quality. Set within the range 4 to 19 (0 to 18 in the case of a Grass Valley HQX). Setting a smaller value results in higher image quality. [Max size] sets the maximum bitrate. You can set to limit the file size that increases inadvertently as a result of excessive noise in the video. Setting value “100” % means the same bitrate before codec compression. For example, 100% for 1440x1080 59.94i is a bitrate of approximately 750 Mbps. To set the upper limit to 200 Mbps, set “27” % as the maximum size.
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❖ [DV AVI] Dialog Box

If [Use MSDV codec] is checked, it will export as AVI with the MSDV codec.

Audio Format

Category name in [Print to File] dialog box	Exporter
[Audio]	[Dolby Digital (AC-3)] [PCM AIFF] [PCM WAVE] [Sony/Sonicfoundry Wave64]
[Windows Media]	[WindowsMediaAudio]

❖ [Dolby Digital (AC-3)] Dialog Box

Select a bitrate from the [Format] list.

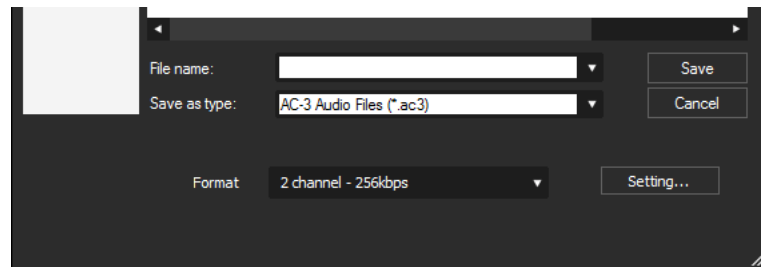
❖ [WindowsMediaAudio] Dialog Box

Select the transfer mode. If [CBR] (fixed transfer mode) has been selected, select a bitrate from the [Bitrate] list. If [VBR (quality based)] (variable transfer mode) has been selected, select a bitrate from the [Quality] list.

Dolby Digital Professional or Dolby Digital Plus Format

Category name in [Print to File] dialog box	Exporter
[Audio]	[Dolby Digital Professional (AC-3)] [Dolby Digital Plus (E-AC-3)]

❖ [Dolby Digital Professional (AC-3)] / [Dolby Digital Plus (E-AC-3)] Dialog Box



[Format]	Select the number of bits.
[Settings]	Set bitstream details. [Dolby Setting] Dialog Box►P64

➤ Assigning output channels

Output channels are assigned to the front left (L), front right (R), front center (C), LFE, rear left (Ls), and rear right (Rs), in the order of the smallest channel number. (Channels that are not used will be skipped.) When the single rear (S) is to be used, the rear left (Ls) is assigned.

Example:

When [Audio Coding Mode] in the [Dolby Setting] dialog box is set to [2/0]

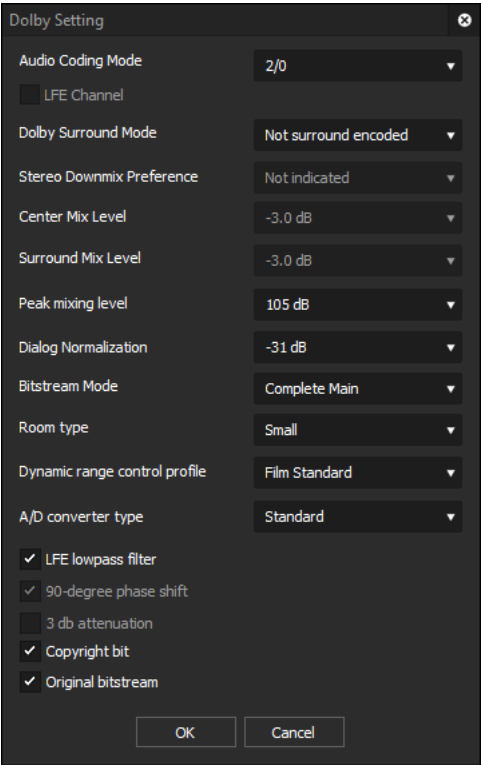
[Dolby Setting] Dialog Box►P64

[Audio Coding Mode]	[LFE Channel]*	Stream to be assigned						
		L	R	C	LFE	Ls	Rs	S
[1/0]	—	—	—	Ch1	—	—	—	—
[2/0]	—	Ch1	Ch2	—	—	—	—	—
[2/1]	—	Ch1	Ch2	—	—	—	—	Ch3
	○	Ch1	Ch2	—	Ch3	—	—	Ch4
[2/2]	—	Ch1	Ch2	—	—	Ch3	Ch4	—
	○	Ch1	Ch2	—	Ch3	Ch4	Ch5	—

[Audio Coding Mode]	[LFE Channel]*	Stream to be assigned						
		L	R	C	LFE	Ls	Rs	S
[3/0]	—	Ch1	Ch2	Ch3	—	—	—	—
	O	Ch1	Ch2	Ch3	Ch4	—	—	—
[3/1]	—	Ch1	Ch2	Ch3	—	—	—	Ch4
	O	Ch1	Ch2	Ch3	Ch4	—	—	Ch5
[3/2]	—	Ch1	Ch2	Ch3	—	Ch4	Ch5	—
	O	Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	—

* O indicates that [LFE Channel] in the [Dolby Setting] dialog box is checked.

➤ [Dolby Setting] Dialog Box



[Audio Coding Mode]	Specify the audio channel (front left (L), front center (C), front right (R), single rear (S) rear left (Ls), rear right (Rs)). Select an option from [1/0] (C only, monaural), [2/0] (L/R, stereo), [2/1] (L/R/S), [2/2] (L/R/Ls/Rs), [3/0] (L/C/R), [3/1] (L/C/R/S), [3/2] (L/C/R/Ls/Rs). The items where the number of channels exceeds the audio channels in the source file cannot be selected.
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[LFE Channel]	Check this item to export including LFE channel. When [Audio Coding Mode] is set to [1/0] or [2/0], it cannot be selected.
[Dolby Surround Mode]/[Dolby Surround Mode EX]*	Set Dolby surround or Dolby Digital surround EX. When [Audio Coding Mode] is set to [1/0] or [2/1], it cannot be selected.
[Stereo Downmix Preference]	Can be set when [Audio Coding Mode] is set to [3/0], [3/1], or [3/2]. [Not indicated] Dolby surround mode is not specified. [Lt, Rt] Downmix to audio compatible with Dolby surround. [Lo, Ro] Downmix to audio compatible with stereo or monaural playback. [Pro Logic II] Downmix in the Dolby Digital Pro Logic II format. For Dolby Digital Professional, it cannot be set.
[Center Mix Level]	Can be set when [Audio Coding Mode] is set to [3/0], [3/1], or [3/2]. Select a value to downmix the center channel when the playback device does not have the center channel and stereo playback is to be performed. Selecting [-INF dB] deletes the center channel.
[Surround Mix Level]	Can be set when [Audio Coding Mode] is set to [2/1], [2/2], [3/1], or [3/2]. Select a value to downmix the surround channel when the playback device does not have the surround channel and stereo playback is to be performed. Selecting [-INF dB] deletes the surround channel.
[Peak mixing level]	Specify the peak sound pressure level (SPL) in the environment where the final mixing has been performed (such as a studio or dubbing stage). Select from [111 dB] to [80 dB].

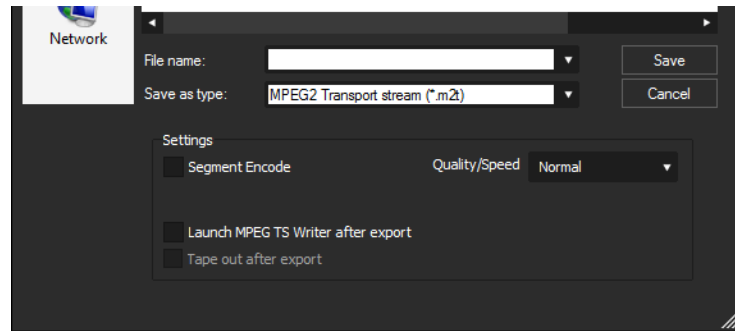
[Dialog Normalization]	Specify the average audio level of the bitstream. Specifying this value enables playback of multiple audio with the same level on the playback device. Select from [-31 dB] to [-1 dB]. The difference between the selected value and 31 dB is the attenuation when the audio is played back on a playback device. Select the audio level [-31 dB] from the edited file. Example: For audio of average -6 dB Set [-6 dB]. The attenuation will be 31 dB - 6 dB = 25 dB. Example: For audio of average -12 dB Set [-12 dB]. The attenuation will be 31 dB - 12 dB = 19 dB.
[Bitstream Mode]	Set the audio service included in the bitstream.
[Room type]	Specify the information on the environment where the final mixing has been performed (such as a studio or dubbing stage).
[Dynamic range control profile]	Specify the dynamic range compression settings. To use [Dynamic range control profile], configure [Dialog Normalization] properly.
[A/D converter type]	Specify the digital conversion process.
[LFE lowpass filter]	Check this item to enable the low-pass filter of the LFE channel and to filter audio of 120 Hz or higher.
[90-degree phase shift]	Check this item to output in Dolby surround compatible audio when downmix playback of multi-channel audio is performed on a 2-channel decoder.
[3 db attenuation]	Check this item to decrease the surround channel by 3 dB when home theater equipment compatible with multi-channel is used.
[Copyright bit]	Check this item to specify that the output file contains copyright-protected contents.
[Original bitstream]	Check this item to specify that the output file is not a copy but an original file.

* If [Audio Coding Mode] is [2/0], [Dolby Surround Mode] is set. If [Audio Coding Mode] is [2/2], [3/0], [3/1], or [3/2], [Dolby Surround Mode EX] is set.

HDV Format

Category name in [Print to File] dialog box	Exporter
[HDV]	[HDV]

❖ [HDV] Dialog Box

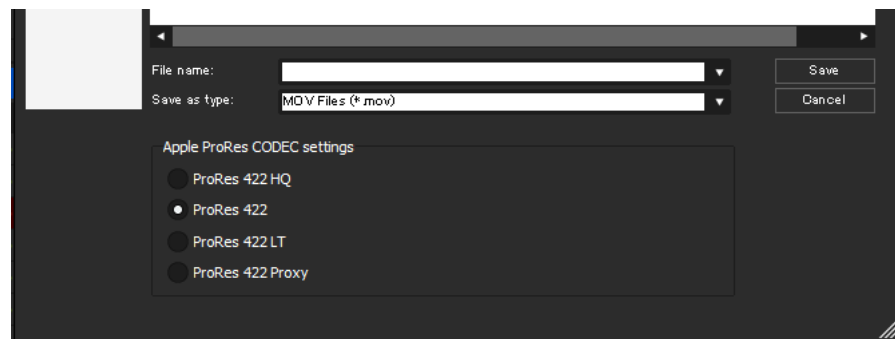


[Segment Encode]	Check this item to export a clip of a raw source without re-encoding. This increases the output speed. If the frame rate of the export format is 23.98p, segment encode is not available. [Quality/Speed] Select the quality of the part to be re-encoded from the list. The higher the quality, the more time it takes to be encoded.
[Gop Type]	Only displayed when the export format frame rate is 23.98p. Select the format from [HDV24p Record (Canon XL-H1, Sony HVR-Z7 etc.)] or [HDV24p Scan (Sony HVR-V1, HDV1080i devices)].

QuickTime Format

Category name in [Print to File] dialog box	Exporter
[QuickTime]	[Apple ProRes MOV] [QuickTime] [Grass Valley HQ MOV] [Grass Valley HQX MOV]

❖ [Apple ProRes MOV] Dialog Box



[Apple ProRes CODEC settings]

[Apple ProRes 422 HQ]

High data rate Apple ProRes 422. The target data rate for the source 1920 x 1080, 29.97 fps is approximately 220 Mbps.

[Apple ProRes 422]

A format suitable for real time editing. The target data rate for the source 1920 x 1080, 29.97 fps is approximately 147 Mbps.

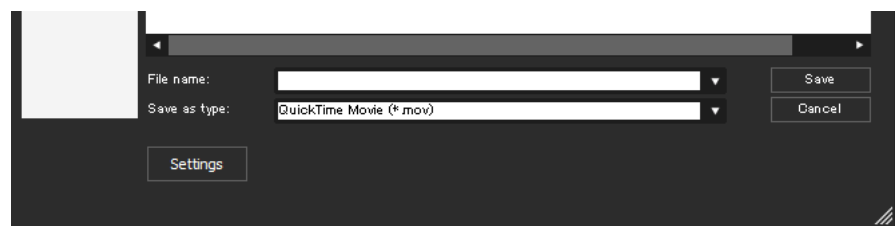
[Apple ProRes 422 LT]

A format suitable for saving the disk storage. The target data rate for the source 1920 x 1080, 29.97 fps is approximately 102 Mbps.

[Apple ProRes 422 Proxy]

A codec for offline workflow. The target data rate for the source 1920 x 1080, 29.97 fps is approximately 45 Mbps.

❖ [QuickTime] Dialog Box



From the [Save as type] list, select a file format and click [Settings]. For detailed settings of output to each file format, refer to the help of QuickTime Player.

❖ [Grass Valley HQ MOV] / [Grass Valley HQX MOV] Dialog Box

For the setting items, see the descriptions given for [Grass Valley HQ AVI] / [Grass Valley HQX AVI] exporter.

[Grass Valley HQ AVI] / [Grass Valley HQX AVI] Dialog Box ► P61

POINT

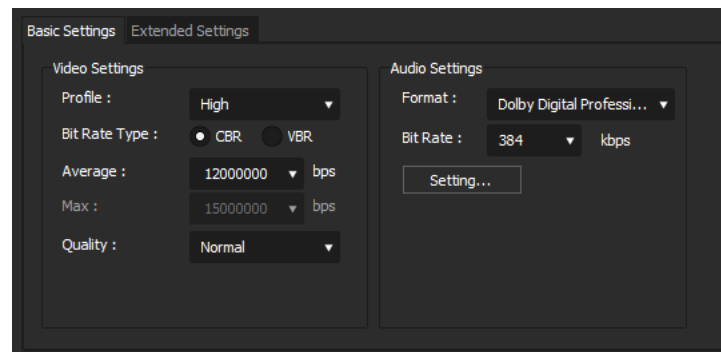
- If [Grass Valley HQX MOV] or [Grass Valley HQ MOV] is set for the exporter, when a project template that satisfies all the following conditions is applied, HDR metadata will be added to the output data.
 - When [Color Space] in [Project Settings] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].
 - When [Primary Color Correction] is applied, [Source] is set to [Auto], and [Destination/LUT] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].

BD Format

Category name in [Print to File] dialog box	Exporter
[H.264/AVC]	[Blu-ray]

❖ [Blu-ray] Dialog Box

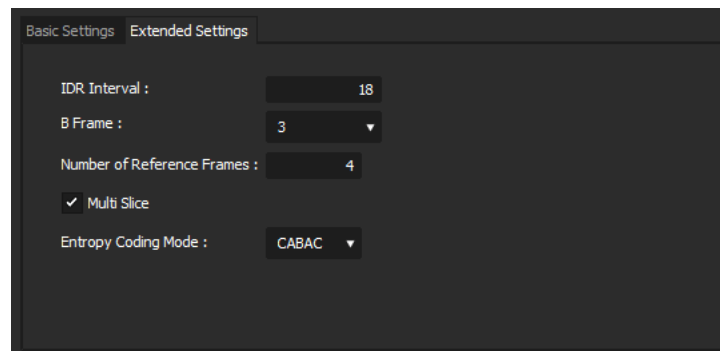
► [Basic Settings] tab



[Video settings]	[Profile] Set the profile. The selectable profiles will differ dependent on the frame size to be exported. [Bit Rate Type] [CBR] assigns a constant number of bits. Although noise, etc. may be present, the encoding process is made quicker. [VBR] changes the assigned bitrate according to the complexity of the movement or image quality. Compared with [CBR], the media volume can be used more efficiently, and this enables more consistent image quality overall. [Average] Set this item if [CBR] or [VBR] has been selected as the bitrate type. You can either select from the list or enter values directly. [Max] Set this item if [VBR] has been selected as the bitrate type. You can either select from the list or enter values directly. [Quality] Select the image quality from the list. [Use Hardware Encoder] Check this item to output video using hardware encoding such as Quick Sync Video. Unchecking this item will output video using H.264 software encoder that enables high-quality and high-speed encoding. In an environment where hardware encoding is not available, [Use Hardware Encoder] will not be displayed. The encoder for output will be fixed to H.264 software encoder.
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[Audio settings]	[Format] Select the audio compression format from the list. - For [Dolby Digital (AC-3)] or [Dolby Digital Professional (AC-3)] If the number of audio channels in the source file is 7ch or more, the 7th channel and later are discarded, and the source file is output with 5.1ch - 1ch:L, 2ch:R, 3ch:C, 4ch:LFE, 5ch:Ls, and 6ch:Rs. If the number of audio channels in the source file is 5ch or less, all except 1/2ch are discarded and the source file is output with 2ch. - For [Linear PCM] If the number of audio channels in the source file is 8ch, output is with 8ch; if the number is 6ch/7ch, output is with 6ch; if the number is 4ch/5ch, output is with 4ch: and if the number is 3ch, output is with 2ch. [Bit Rate] Select a bitrate from the list. [Setting] Set bitstream details. [Dolby Setting] Dialog Box►P64
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➤ [Extended Settings] tab



[IDR Interval]	Enter the IDR frame interval, and set the GOP size.
[B Frame]	Set the number of B-frames included in one GOP.
[Number of Reference Frames]	Set up to how many frames to consider when motion estimation is performed.

[Multi Slice]	Check this item to divide 1 frame into 4 parts. If the decoder supports multi-slicing, the decoding may be made quicker.
[Entropy Coding Mode]	Select the H.264 encoding mode.
[Bit Depth]*	Select a video quantization bitrate from the list.
[Chroma Format]*	Select a YUV pixel format from the list.

* Only available when the exporter is [H.264/AVC]. If [Blu-ray], [AVCHD], [F4V], or another exporter is to be used, [Bit Depth] is fixed to [8], and [Chroma Format] is fixed to [4:2:0].

Note

- If [Bit Depth] is set to [10], or [Chroma Format] is set to [4:2:2], hardware encoding cannot be performed even when [Use Hardware Encoder] check box is selected in [Video settings].

MP4 Format

Category name in [Print to File] dialog box	Exporter
[H.264/AVC]	[PlayStation Portable] [H.264/AVC] [iPod]

POINT

- If [Bit Depth] is set to [10] in the [Extended Settings] tab at the time of export, the file will be exported in 10-bit.
- If [H.264/AVC] is set for the exporter, When a project template that satisfies all the following conditions is applied, HDR metadata will be added to the output data.
 - When [Color Space] in [Project Settings] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ]
 - When [Primary Color Correction] is applied, [Source] is set to [Auto], and [Destination/LUT] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].

❖ [PlayStation Portable] / [H.264/AVC] / [iPod] Dialog Box

For the setting items, see the descriptions given for [Blu-ray] exporter.

[Blu-ray] Dialog Box►P69

For [PlayStation Portable]/[iPod] exporter, [Size] can be changed in [Video settings] of the [Basic Settings] tab.

MPEG-2 Format

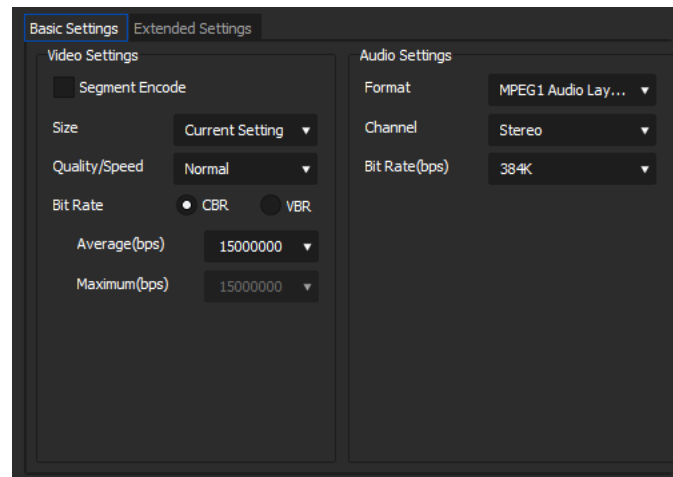
Category name in [Print to File] dialog box	Exporter
[MPEG]	[MPEG2 Elementary Stream] [MPEG2 Program Stream]

❖ [MPEG2 Elementary Stream] / [MPEG2 Program Stream] Dialog Box

If [MPEG2 Elementary Stream] has been selected, click [Select], set the audio and video export destinations, and click [OK].

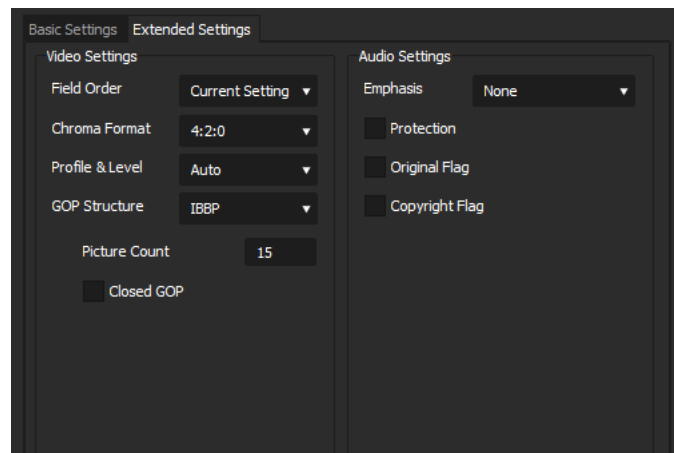
➤ [Basic Settings] tab

The setting items displayed may differ in part depending on the exporter.



[Video settings]	[Segment Encode] Check this item to export a clip of a raw source without re-encoding. This increases the output speed. [Size] Select an image quality. [Quality/Speed] Select quality from the list. The higher the quality, the more time it takes to be encoded. [Bit Rate] Select a bitrate type. [CBR] sets a fixed transfer rate, allocating a fixed number of bits during the encoding process. Select a bitrate from the [Average(bps)] list. You can also enter a value directly. [VBR] sets a variable transfer rate, altering the number of assigned bits according to the complexity of the movement or image quality. Compared with [CBR], the media volume can be used more efficiently, and this enables more consistent image quality overall. Select a bitrate from the [Average(bps)] and [Maximum(bps)] lists. You can also enter a value directly.
[Audio settings]	[Format] Select the audio compression format from the list. [Channel] Select from [Stereo], [Dual Channel] or [Joint Stereo]. [Stereo] is normal stereo that records separately on the left and right sides. If there is a large difference between the left and right audio, compared to stereo that saves audio with a greater focus on one side, [Dual Channel] records totally independently so that there is no bias in sound quality to one side. Select to enter narration in 2 languages, etc. [Joint Stereo] improves audio quality and compression ratio when recording left and right audio separately by automatically using a single channel that combines the audio when the left and right sides are the same or one more channel when the left and right audio are different. [Bit Rate (bps)] Select a bitrate from the list.

➤ [Extended Settings] tab

**[Video settings]****[Field Order]**

For interlace, a field order can be selected.

[Chroma Format]

Select a YUV pixel format from the list.

[Profile & Level]

Select a profile & level. If [Chroma Format] is [4:2:0] and [4:2:2], the profile will be set to Main Profile and 422Profile, respectively. The level for SD image quality will be Main Level, and the level for HD image quality will be High Level. The profile & level changes according to the format selected in [Chroma Format].

[GOP Structure]

For MPEG, a certain number of frames is considered as a group, and operations such as compression/enlargement and cut editing are performed on a GOP basis. A GOP comprises “I frame”, “P frame” and “B frame”. The I frame allows images to be reproduced independently, the P frame is for recording and reproducing only the differences with the preceding image, and the B frame reproduces images from the differences in the preceding and following images. Select I, P and B frame patterns of the GOP from the list. Normally, select [IBBP].

[I-Frame Only] is comprised of only I-pictures. Editing is made easier, but the amount of data increases in size.

	[Picture count] Set the number of frames included in a group. [Closed GOP] Check this item to complete information within each GOP. Although the amount of data increases, the video can be re-edited using software that supports GOP-based editing. Normally, leave this item unchecked.
[Audio settings]	[Emphasis] Select from the list for high-frequency compensation that saves while emphasizing the high range. With [None], there is no high-frequency compensation. [50/15 us] is an emphasis setting employed by some audio CDs, etc. [CCITT J.17] is a telecommunications standard recommended by CCITT. [Protection] The “protection_bit” indicates whether redundancy is added to an audio stream in order to make error detection and correction possible. Check this item to change it to “1”, indicating that redundancy is being added. Uncheck this item to change it to “0”, indicating that redundancy is not being added. [Original Flag] Check this item to change the “original_copy” bit to “1”, indicating the original copy. If it is unchecked, it becomes “0”, indicating a duplication. [Copyright Flag] Check this item to change the “copyright” bit to “1”, indicating that the copyright is protected. If it is unchecked, it becomes “0”, indicating there is no copyright.

Flash Video (F4V) Format

Category name in [Print to File] dialog box	Exporter
[H.264/AVC]	[F4V]

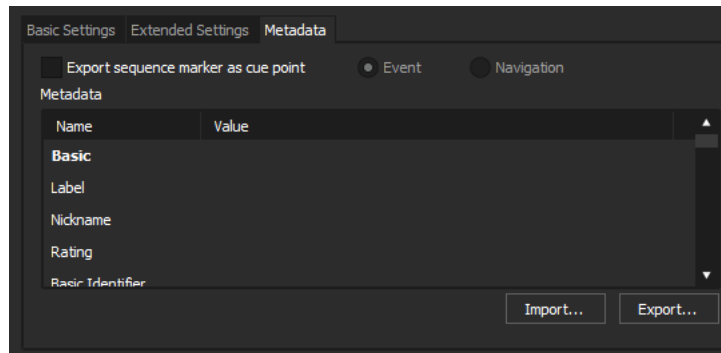
❖ [F4V] Dialog Box

➤ [Basic Settings] tab/[Extended Settings] tab

For the setting items, see the descriptions given for [Blu-ray] exporter.

[Blu-ray] Dialog Box►P69

➤ [Metadata] tab



[Export sequence marker as cue point]	Check this item to export sequence markers as cue points for Flash. Select the name of the type of cue point.
[Metadata]	Export is possible with metadata appended. Select an item from the [Name] list, and enter metadata at [Value].
[Import]	Import XMP format (*.xmp) metadata. This is reflected in the [Metadata] setting.
[Export]	Export the settings made at [Metadata] in XMP format.

H.265/HEVC Format

Category name in [Print to File] dialog box	Exporter
[H.265/HEVC]	[H.265/HEVC]

❖ [H.265/HEVC] Dialog Box

For the setting items, see the descriptions given for [Blu-ray] exporter.
[Blu-ray] Dialog Box▶P69

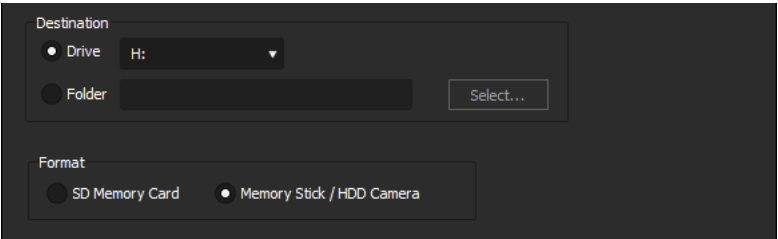
AVCHD Format

Category name in [Print to File] dialog box	Exporter
[AVCHD]	[AVCHD] (When exported to a file) [AVCHD Writer] (When exported to removable media)

Note

- When exporting to the internal hard disk, internal memory or removable disk of an AVCHD camera for playback on the AVCHD camera, you may be unable to perform the export or playback depending on the camera.
- Depending on the type of save destination, a warning message may be displayed saying that data will become unrecognizable. Be sure to create a backup before export, as required.
- If a stream file size exceeds 2 GB, it will be split up before export.

❖ [AVCHD Writer] Dialog Box



[Destination]	[Drive] Select this option to output files to an SD memory card or Memory Stick.
	[Folder] Select this option to output AVCHD stream files to a selected destination. Click [Browse] to set the destination.
[Format]	Select according to the media being used.

❖ **Common Settings for [AVCHD Writer] / [AVCHD] Dialog Box**➤ **[Basic Settings] tab/[Extended Settings] tab**

For the setting items, see the descriptions given for [Blu-ray] exporter.

[Blu-ray] Dialog Box►P69

XDCAM EX Format

Category name in [Print to File] dialog box	Exporter
[XDCAM]	[XDCAM EX DV] [XDCAM EX]

Note

- Be sure to format the SxS memory card with the XDCAM EX device in advance.

❖ **[XDCAM EX] / [XDCAM EX DV] Dialog Box**

The setting items will differ depending on the exporter.

The screenshot shows a dark-themed dialog box for XDCAM EX settings. It includes a 'Destination' section with radio buttons for 'Sony - SxS Memory Card', 'JVC - SDHC Memory Card', and 'Folder'. The 'Folder' option is selected, and there is a text field with a browse button ('...'). Below this is a checkbox for 'Automatically select the next card when card is full.' The 'Segment Encode' section has checkboxes for 'Segment Encode', 'ClosedGOP', and 'Audio/Stereo'. The 'Mode' dropdown is set to 'SP (25 CBR)' and the 'Quality/Speed' dropdown is set to 'Normal'. There are text input fields for 'Title1 (US ASCII):', 'Title2:', and 'Description:', and a 'Creator:' field at the bottom.

[Destination]	Select whether to export to an SxS memory card, to export to an SDHC memory card or to save to a desired folder. A file is exported in a folder structure. If [Sony - SxS Memory Card] or [JVC - SDHC Memory Card] is selected, select a card from the list. If [Automatically select the next card when card is full.] is checked, when free space runs out on the SxS memory card selected as the export destination, an SxS memory card with free space will be selected automatically and exported to. If it is unchecked, a dialog box will be displayed to select the export destination. If [Folder] has been selected, click [...] and specify a save destination.
[Segment Encode]	Check this item to export a clip of a raw source without re-encoding. This increases the output speed.
[ClosedGOP]	Check this item to complete information within each GOP. Although the amount of data increases, the video can be re-edited using software that supports GOP-based editing.
[Audio/Stereo]	Check this item to export the audio as a stereo track. This is only displayed when the audio channel is 2ch.
[Mode]	Select an image quality mode (SP or HQ).
[Quality/Speed]	Select quality from the list. The higher the quality, the more time it takes to be encoded.
Metadata	Add metadata such as title and comments to clips to be exported.

➤ [Select Memory Card Drive] Dialog Box

When the clip is to be split, a dialog box appears to select the export destination.

[Memory Card]: [L]/[R]	Select the next memory card drive.
[OK]	Click this item after selecting a drive or after replacing a memory card.

GF Format

Category name in [Print to File] dialog box	Exporter
[GF]	[GF clip] [GF clip (DV)] [GF clip (DVCPR025)] [GF clip (DVCPR050)] [GF clip (SD)]

Note

- If a clip consists of files with a size that exceeds 4 GB, it will be split up before export.

[GF clip] / [GF clip (DV)] / [GF clip (DVCPR025)] / [GF clip (DVCPR050)] / [GF clip (SD)] Dialog Box

The setting items will differ depending on the exporter.

[Destination]	Select whether to export to a GF drive or save to a desired folder. If [GF Drive] has been selected, select a Drive from the list. If [Folder] has been selected, click [Select] and specify a save destination. [Bin] Set the BIN in which to register the exported clip. Select from the list, or click [Append], enter a BIN title and register anew to the list.
[Clip Title]	Enter the name of the clip to be exported.
[Segment Encode]	Check this item to export a clip of a raw source without re-encoding. This increases the output speed.

[Gop Type]	Select the GOP type from [I-Frame Only(100 Mbps)] or [Long GOP(50 Mbps)].
[Quality/Speed]	Select a quality.
[Bit Rate]	Select a bitrate from the list.
[Audio Channels]	Select the number of audio channels.
[Audio Quantization Bit Rate]	Select an audio quantization bitrate.

Infinity Format

Category name in [Print to File] dialog box	Exporter
[Infinity]	[Infinity DV] [Infinity JPEG2000] [Infinity D10] [Infinity MPEG]

❖ [Infinity MPEG] / [Infinity DV] / [Infinity JPEG2000] / [Infinity D10] Dialog Box

The setting items will differ depending on the exporter.

The screenshot shows a dark-themed dialog box for exporting to Infinity format. It contains several sections: 'Destination' with radio buttons for 'Infinity Drive' and 'Folder' (the latter has a 'Select...' button); 'Clip Name' with a text input field; 'Playlist' with radio buttons for 'Same as clip name.' and 'Specified the playlist.' (the latter has a text input field); 'SegmentEncode' with a checkbox; and three dropdown menus for 'Bit Rate' (set to 60Mbps), 'Quality/Speed' (set to Normal), and 'Audio Format' (set to 24bit/4ch).

[Destination]	Select whether to export to an Infinity drive or save to a desired folder. If [Infinity Drive] has been selected, select a Drive from the list. If [Folder] has been selected, click [Select] and specify a save destination.
[Clip Name]	Enter the name of the clip to be exported.

[Playlists]	Select whether the playlist name has the same name as the clip name. If [Specified the playlist.] has been selected, enter a playlist name.
[Segment Encode]	Check this item to export a clip of a raw source without re-encoding. This increases the output speed.
[Bit Rate]	Select a bitrate from the list.
[Quality/Speed]	Select a quality.
[Audio Format]	Select an audio quantization bitrate and a number of audio channels from the list.

P2 Format

Category name in [Print to File] dialog box	Exporter
[P2]	[HD P2 Clip] [AVCUltra P2 Clip] [P2 Clip]

Note

- Make sure that the P2 device drivers are already installed.
- Audio will be exported in 16-bit format audio, even if the source file is set to 24-bit format audio.
- If there is no more free space in the export destination, or if the clip consists of files with a size that exceeds 4 GB, it will be split up before export.
- If exporting at 720p, the export frames must be even frames. If a confirmation message appears, select a processing method.
- If a DVCPRO HD export format and the settings content for the source file differ, the export data will be stretched before export so that the frame rate and the field order correspond to each other.

❖ **[HD P2 Clip] / [AVCUltra P2 Clip] / [P2 Clip] Dialog Box**

The setting items will differ depending on the exporter.

[Destination]	Select whether to export to a P2 drive or save to a desired folder. If [P2Card] has been selected, select a Card from the list. If [Folder] has been selected, click [Select] and specify a save destination.
[User Clip Name]	Enter the name of the clip to be exported.
[Video settings]	Select a codec from the list.
[Audio settings]	Select an audio quantization bitrate.
Metadata	Click on a tab to input metadata.
[Automatically select the next card when card is full.]	If you check this item, when the clip is split, a P2 card drive that has free space will be selected automatically and exported to. If it is unchecked, when the clip is split, a dialog box will appear to select the export destination.
[Load Metadata]	Metadata, such as the created by and capture information, can be imported from another P2 clip. Click [Load Metadata] and select the XML file to be imported.

XDCAM Format

Category name in [Print to File] dialog box	Exporter
[XDCAM]	[XDCAM DV] [XDCAM MPEG IMX] [XDCAM HD] [XDCAM HD 422] [XDCAM HD 720P]

Note

- Be sure to format the SxS memory card with an XDCAM device in advance.
- Files cannot be exported to an SxS memory card formatted in the XDCAM EX format.
- Proxy files will not be exported.
- If a clip is exported that does not include high-resolution or proxy data, a dialog box will appear to set the processing before export. Select a processing method and click [OK].
- If [XDCAM MPEG IMX] was selected, 3 lines (black) will be added above and below the 720x480 video to be exported as Even (Top Field First). Also, 720x576 (Odd) video will be shifted by 1 line to be exported as Even (Top Field First).

❖ [XDCAM HD] / [XDCAM DV] / [XDCAM MPEG IMX] / [XDCAM HD 422] / [XDCAM HD 720P] Dialog Box

The setting items will differ depending on the exporter.

The screenshot shows a dark-themed dialog box for XDCAM export settings. It includes a 'Destination' section with radio buttons for 'XDCAM Drive', 'FTP', and 'Folder'. The 'Folder' option is selected, and there is a 'Select...' button next to it. Below this is a 'Clip Name' field with an 'Auto (C****)' button. There are checkboxes for 'Segment Encode' and 'ClosedGOP'. The 'Bit Rate' is set to '25Mbps', 'Quality/Speed' is set to 'Normal', and 'Audio Format' is set to '16bit/2ch'.

[Destination]	Select whether to export to an XDCAM drive, to an FTP server, or to a desired folder. A file is exported in a folder structure. If [XDCAM Drive] was selected, select a Drive from the list. If [FTP] was selected, check the server to be exported to and, as necessary, check the item described below. If [Folder] was selected, click [Select] and specify a save destination. [Upload to FTP after exporting file.] Check this item to export a temporary file to the project folder, and then upload the actual data to an FTP server. After outputting the temporary file, if an error occurs during transfer to the FTP server or if the upload is aborted, the temporary file will not be deleted.
[Clip Name]	Set the file name to be exported. If [Auto (C****)] is checked, a file name will be set automatically. To set a preferred file name, remove the check from [Auto (C****)] and enter a name in [Clip Name]. (“Clip Naming” must be set as “Free” on the XDCAM drive.)
[Segment Encode]	Check this item to export a clip of a raw source without re-encoding. This increases the output speed.
[Bit Rate]	Select a bitrate from the list.
[Quality/Speed]	Select a quality.
[ClosedGOP]	Check this item not to use the B-picture at the GOP border as reference across GOPs. Although the amount of data increases, the video can be re-edited using software that supports GOP-based editing, as the information is completed within each GOP.
[Audio Format]	Select the audio format to export.

XAVC S Format

Category name in [Print to File] dialog box	Exporter
[XAVC]	[XAVC S]

POINT

- If a project template that satisfies all the following conditions is applied, HDR metadata will be added to the output data.
 - When [Color Space] in [Project Settings] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].
 - When [Primary Color Correction] is applied, [Source] is set to [Auto], and [Destination/LUT] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].

Registering Exporter Settings as Preset ► P102

Note

- Be sure to format the XQD memory card with an XAVC S device in advance.

❖ [XAVC S] Dialog Box

[Destination]

Select whether to export to an XAVC S device or to a desired folder. A file is exported in a folder structure.

If [Memory Card] is selected, select a device from the list.

If [Folder] is selected, click [...] and specify a save destination.

[Video Settings]	[Bit Rate] Select a bitrate from the list. [Quality] Select an image quality. [Use Hardware Encoder] Check this item to output video using hardware encoding such as Quick Sync Video. Unchecking this item will output video using H.264 software encoder that enables high-quality and high-speed encoding. In an environment where hardware encoding is not available, [Use Hardware Encoder] will not be displayed. The encoder for output will be fixed to H.264 software encoder.
[Audio Settings]	Select the audio format of the video to be exported.
Metadata	Add metadata such as title and comments to clips to be exported.

XAVC Format

Category name in [Print to File] dialog box	Exporter
[XAVC]	[XAVC]

POINT

- If a project template that satisfies all the following conditions is applied, HDR metadata will be added to the output data.
 - When [Color Space] in [Project Settings] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].
 - When [Primary Color Correction] is applied, [Source] is set to [Auto], and [Destination/LUT] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].

Registering Exporter Settings as Preset ► P102

Note

- Be sure to format the SxS memory card with an XDCAM device in advance.
- Files cannot be exported to an SxS memory card formatted in the XDCAM EX format.

❖ [XAVC] Dialog Box

The dialog box contains the following settings:

- Destination:** Radio buttons for XDCAM Drive, FTP, and Folder. XDCAM Drive is selected. A dropdown menu is next to it. Below FTP is a checkbox for "Upload to FTP after exporting file." and a "Select..." button next to the Folder radio button.
- Clip Name:** A text input field with "Auto (C****)" checked.
- Format:** A dropdown menu set to "Intra Class 50". A "ClosedGOP" checkbox is to its right.
- Quality/Speed:** A dropdown menu set to "Fine". A "Segment Encode" checkbox is checked.
- Audio Channels:** A dropdown menu set to "Auto".

[Destination]	Select whether to export to an XDCAM drive, to an FTP server, or to a desired folder. A file is exported in a folder structure. If [XDCAM Drive] was selected, select a drive from the list. If [FTP] was selected, check the server to be exported to and, as necessary, check the item described below. If [Folder] was selected, click [Select] and specify a save destination. [Upload to FTP after exporting file.] Check this item to export a temporary file to the project folder, and then upload the actual data to an FTP server. After exporting the temporary file, if an error occurs during transfer to the FTP server or if the upload is aborted, the temporary file will not be deleted.
[Clip Name]	Set the file name to be exported. [Auto (C****)] If it is checked, a file name will be set automatically. To set a preferred file name, remove the check from [Auto (C****)] and enter a name in [Clip Name]. ("Clip Naming" must be set as "Free" on the XDCAM drive.)
[Format]	Select the format to export.
[Quality/Speed]	Select quality and speed.
[Audio Channels]	Select the number of audio channels.

K2 (GXF) Format

Category name in [Print to File] dialog box	Exporter
[K2]	[AVCIntra GXF] [AVCUltra GXF] [D10 GXF] [DNxHD GXF] [DV GXF] [DVCPR025 GXF] [DVCPR050 GXF] [DVCPROHD GXF] [JPEG2000 GXF] [MPEG2 GXF]

Note

- Audio will be exported in 16-bit format audio, even if the source file is set to 24-bit format audio.

[MPEG2 GXF] / [AVCIntra GXF] / [AVCUltra GXF] / [D10 GXF] / [DNxHD GXF] / [DV GXF] / [DVCPR025 GXF] / [DVCPR050 GXF] / [DVCPROHD GXF] / [JPEG2000 GXF] Dialog Box

The setting items will differ depending on the exporter.

The screenshot shows the export dialog box for GXF format. It includes fields for Clip Name and Destination (Folder or FTP). The Destination section has checkboxes for Overwrite file when it exists, Upload to FTP after exporting file, and Do not add file extension when exporting to FTP. There is a checkbox to Keep the created file when aborting. The Encode Settings section includes Segment Encode (checked), Bit Rate (CBR/VBR), Average/Max bit rates, Quality/Speed, Field Order, GOP structure (IBBP), Picture count (15), Closed GOP, Chroma Format (4:2:0), and Profile/Level (MP@H14L). The Audio Settings section includes Channels and Quantization Bit Rate, both set to Current setting.

[Clip Name]	Enter the name of the clip (file) to be exported.
[Destination]	Select whether to export to a desired folder or to an FTP server. If [Folder] was selected, click [Select] and specify a save destination. If [FTP] was selected, check the server to be exported to and, as necessary, check the items described below. [Overwrite file when it exists] Check this item to overwrite a file if the file with the same file name is present at the FTP server of the export destination. [Upload to FTP after exporting file] Check this item to export a temporary file to the project folder, and then upload the actual data to an FTP server. After outputting the temporary file, if an error occurs during transfer to the FTP server or if the upload is aborted, the temporary file will remain undeleted. [Do not add file extension when exporting to FTP] Check this item to export a file without adding the file extension to the name entered in [Clip Name]. (If [Clip Name] contains a file extension, export will take place with a clip file name with its file extension removed.) When this item is unchecked, export will take place with the ".gxf" file extension added if the name entered in [Clip Name] does not include the file extension.
[Keep the created file when aborting]	Becomes enabled if [Upload to FTP after exporting file] is unchecked. If it is checked and export is aborted, the file created up to the time point of the abort will remain at the export destination.

[Encode Settings]	[Segment Encode] Check this item to export a clip of a raw source without re-encoding. This increases the output speed. [Bit Rate] Select a bitrate type. [CBR] sets a fixed transfer rate, allocating a fixed number of bits during the encoding process. Enter an average bitrate in [Average]. [VBR] sets a variable transfer rate, altering the number of assigned bits according to the complexity of the movement or image quality. Enter the average bitrate in [Average], and maximum bitrate in [Max]. [Quality/Speed] Select quality from the list. [Field Order] The field order can be selected if it is in SD format. [GOP structure] Select I, P and B frame patterns of the GOP from the list. Normally, select [IBBP]. [I-Frame Only] is comprised of only I-pictures. Editing is made easier, but the amount of data increases in size. [Picture count] Enter the number of frames included in 1 GOP. [Closed GOP] If it is checked, the GOP will be closed. Although the amount of data increases, the video can be re-edited using software that supports GOP-based editing, as the information is completed within each GOP. Normally, leave this item unchecked.
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	[Chroma Format] Select a YUV pixel format from the list. [Profile/Level] Select a profile & level. If [Chroma Format] is [4:2:0] and [4:2:2], the profile will be set to Main Profile and 422Profile, respectively. The level for SD image quality will be Main Level, and the level for HD image quality will be High Level. The profile & level changes according to the format selected in [Chroma Format].
[Bit Rate]	Select a bitrate from the list.
[Format]	Select the format to export.
[Audio Settings]	[Channels] Select the number of audio channels you want to export from the list. [Current setting] is the number of channels configured in the source file. If [Enable Conversion] is checked for the exporter and the number of channels for the audio format is changed from the source file, the number of channels will be the number set here. [Quantization Bit Rate] Select the number of bits to be used during sampling. [Current setting] is the number of bits configured in the source file.

K2 (CMF) Format

Category name in [Print to File] dialog box	Exporter
[K2]	[K2 AVCIntra Clip] [K2 AVCUltra Clip] [K2 AVCHD Clip] [K2 D10 Clip] [K2 DNxHD Clip] [K2 DV Clip] [K2 DVCPRO HD Clip] [K2 MPEG2 Clip]

Note • Files in 1280x720 50p and 1280x720 59.94p formats which have odd number of frames cannot be output.

❖ **Common Settings for [K2 AVCIntra Clip] / [K2 AVCUltra Clip] / [K2 AVCHD Clip] / [K2 D10 Clip] / [K2 DNxHD Clip] / [K2 DV Clip] / [K2 DVCPRO HD Clip] / [K2 MPEG2 Clip] Dialog Box**

Clip Name

Destination

Server

Bin

☐ Overwrite file when it exists

Sequence Settings

☐ Export as a program sequence

Video Settings

Format

XDCAM EX HQ

☒ Segment Encode

Quality/Speed

Normal

Bit Rate

CBR

VBR

Average(bps)

34000000

Maximum(bps)

35000000

GOP Structure

IBBP

Picture Count

15

☐ Closed GOP

Chroma Format

4:2:0

Profile/Level

MP@HL

Audio Settings

Channels

Current Setting

Quantization Bit Rate

Current Setting

[Clip Name]	Enter a clip name for the file to be exported.
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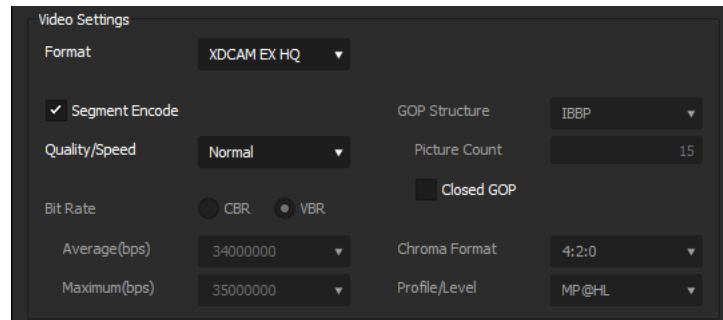
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[Destination]	[Server] Select a file export destination from the list. [Bin] Displays the list of bins in the save destination you selected in [Server]. [Overwrite file when it exists] Check this item to overwrite a file if any file with the same clip name is already registered in the bin in the export destination.
[Sequence Settings]	[Export as a program sequence] Check this item to export sequences as programs.
[Audio Settings]	[Channels] Select the number of audio channels you want to export from the list. [Quantization Bit Rate] Select an audio quantization bitrate from the list.

❖ [Video Settings] in the [K2 MPEG2 Clip]/ [K2 DV Clip]/ [K2 AVCIntra Clip]/ [K2 AVCUltra Clip] Dialog Box

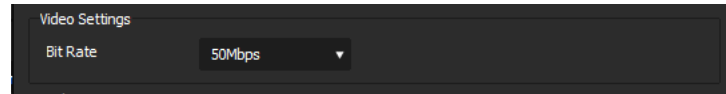
The setting items will differ depending on the exporter.



[Format]	Select an export format from the list.
[Segment Encode]	Check this item to export a clip of a raw source without re-encoding. This increases the output speed.
[Quality/Speed]	Select quality from the list.

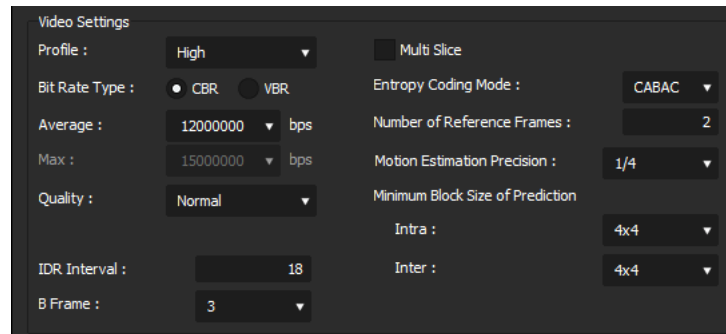
[Bit Rate]	Select a bitrate type. [CBR] sets a fixed transfer rate, allocating a fixed number of bits during the encoding process. Select a bitrate from the [Average] list. You can also enter a value directly. [VBR] sets a variable transfer rate, altering the number of assigned bits according to the complexity of the movement or image quality. Compared with [CBR], the media volume can be used more efficiently, and this enables more consistent image quality overall. Select a bitrate from the [Average] and [Maximum] lists. You can also enter a value directly.
[GOP structure]	For MPEG, a certain number of frames is considered as a group, and operations such as compression/enlargement and cut editing are performed on a GOP basis. A GOP comprises “I frame”, “P frame” and “B frame”. The I frame allows images to be reproduced independently, the P frame is for recording and reproducing only the differences with the preceding image, and the B frame reproduces images from the differences in the preceding and following images. Select I, P and B frame patterns of the GOP from the list. Normally, select [IBBP]. [I-Frame Only] is comprised of only I-pictures. Editing is made easier, but the amount of data increases in size.
[Picture count]	Set the number of frames included in a group.
[Closed GOP]	Check this item to complete information within each GOP. Although the amount of data increases, the video can be re-edited using software that supports GOP-based editing. Normally, leave this item unchecked.
[Chroma Format]	Select a YUV pixel format from the list.
[Profile/Level]	Select a profile & level. If [Chroma Format] is [4:2:0] and [4:2:2], the profile will be set to Main Profile and 422Profile, respectively. The level for SD image quality will be Main Level, and the level for HD image quality will be High Level. The profile & level changes according to the format selected in [Chroma Format].

❖ [Video Settings] in the [K2 D10 Clip]/ [K2 DNxHD Clip] Dialog Box



[Bit Rate]	Select a bitrate from the list.
------------	---------------------------------

❖ [Video Settings] in the [K2 AVCHD Clip] Dialog Box



[Profile]	Set the profile. The selectable profiles will differ depending on the frame size to be exported.
[Bit Rate Type]	[CBR] assigns a constant number of bits. Although noise, etc. may be present, the encoding process is made quicker. [VBR] changes the assigned bitrate according to the complexity of the movement or image quality. Compared with [CBR], the media volume can be used more efficiently, and this enables more consistent image quality overall.
[Average]	Set this item if [CBR] or [VBR] has been selected as the bitrate type. You can either select from the list or enter values directly.
[Max]	Set this item if [VBR] has been selected as the bitrate type. You can either select from the list or enter values directly.
[Quality]	Select the image quality from the list.
[IDR Interval]	Enter the IDR frame interval, and set the GOP size.
[B Frame]	Set the number of B-frames included in one GOP.

[Multi Slice]	Check this item to divide 1 frame into 4 parts. If the decoder supports multi-slicing, the decoding may be made quicker.
[Entropy Coding Mode]	Select the H.264 encoding mode.
[Number of Reference Frames]	Set up to how many frames should be considered when motion estimation is performed.
[Motion Estimation Precision]	Select the unit of division for the motion estimation block from the list.
[Minimum Block Size of Prediction]	Set the block size during motion estimation for intra-frames/inter-frames.

MXF Format

Category name in [Print to File] dialog box	Exporter
[MXF]	[MPEG2 Legacy MXF] [AVCIntra MXF] [AVCUltra MXF] [D10 MXF] [DNxHD MXF] [DV MXF] [DVCPRO25 MXF] [DVCPRO50 MXF] [DVCPROHD MXF] [HQ MXF] [HQX MXF] [JPEG2000 MXF] [MPEG2 MXF] [ProRes MXF]

POINT

- If a project template that satisfies all the following conditions is applied, HDR metadata will be added to the output data.
 - When [Color Space] in [Project Settings] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].
 - When [Primary Color Correction] is applied, [Source] is set to [Auto], and [Destination/LUT] is set to [BT.2020/BT.2100 HLG] or [BT.2020/BT.2100 PQ].

Registering Exporter Settings as Preset▶ P102

❖ [MPEG2 Legacy MXF] / [MPEG2 MXF] / [AVCIntra MXF] / [AVCUltra MXF] / [D10 MXF] / [DNxHD MXF] / [DV MXF] / [DVCPR025 MXF] / [DVCPR050 MXF] / [DVCPROHD MXF] / [HQ MXF] / [HQX MXF] / [JPEG2000 MXF] / [ProRes MXF] Dialog Box

The setting items will differ depending on the exporter.

Clip Name: [Text Field]

Destination:

- ☒ Folder: [Text Field] [Select...]
- ☐ FTP:

Name	Address	Directory	User N...
[Empty Table]			

☐ Overwrite file when it exists

☐ Upload to FTP after exporting file

☒ Do not add file extension when exporting to FTP

☒ Keep the created file when aborting

Encode Settings:

- ☒ Segment Encode
- Bit Rate: ☒ CBR ☐ VBR
- Average: [25000000] bps
- Max: [25000000] bps
- Quality/Speed: [Normal]
- Field Order: [Current setting]
- GOP structure: [IBBP]
- Picture count: [15]
- Closed GOP: ☐
- Chroma Format: [4:2:0]
- Profile/Level: [MP@H14L]

Audio Settings:

- Channels: [Current sett...]
- Channels Per Track: [1ch]
- Quantization Bit Rate: [Current sett...]
- Type: [AES3]
- System Type: [SDTI-CP]
- KAG Size: [512]

[Clip Name]

Enter the name of the clip (file) to be exported.

[Destination]	Select whether to export to a desired folder or to an FTP server. If [Folder] was selected, click [Select] and specify a save destination. If [FTP] was selected, check the server to be exported to and, as necessary, check the items described below. [Overwrite file when it exists] Check this item to overwrite a file if the file with the same file name is present at the server of the export destination. Uncheck this item to display a confirmation message. [Upload to FTP after exporting file] Check this item to export a temporary file to the project folder, and then upload the actual data to an FTP server. After outputting the temporary file, if an error occurs during transfer to the FTP server or if the upload is aborted, the temporary file will not be deleted. [Do not add file extension when exporting to FTP] Check this item to export a file without adding the file extension to the name entered in [Clip Name]. (If [Clip Name] contains a file extension, export will take place with a clip file name with its file extension removed.) Uncheck this item to export a file with the “*.mxf” added if the name entered in [Clip Name] does not include the file extension.
[Keep the created file when aborting]	Becomes enabled if [Upload to FTP after exporting file] is unchecked. When this item is checked, the file being uploaded will be completed if an upload is aborted.
[Encode Settings]	[Segment Encode] Check this item to export a clip of a raw source without re-encoding. This increases the output speed. [Bit Rate] Select a bitrate type. [CBR] sets a fixed transfer rate, allocating a fixed number of bits during the encoding process. Enter an average bitrate in [Average]. [VBR] sets a variable transfer rate, altering the number of assigned bits according to the complexity of the movement or image quality. Enter the average bitrate in [Average], and maximum bitrate in [Max].

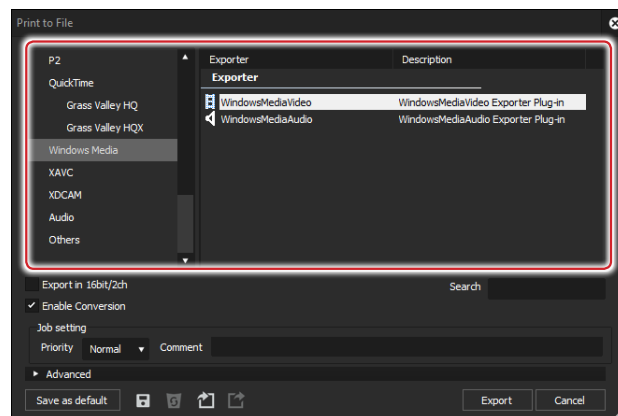
	[Quality/Speed] Select quality from the list. [Field Order] The field order can be selected if it is in SD format. [GOP structure] Select I, P and B frame patterns of the GOP from the list. Normally, select [IBBP]. [I-Frame Only] is comprised of only I-pictures. Editing is made easier, but the amount of data increases in size. [Picture count] Enter the number of frames included in 1 GOP. [Closed GOP] If it is checked, the GOP will be closed. Although the amount of data increases, the video can be re-edited using software that supports GOP-based editing, as the information is completed within each GOP. Normally, leave this item unchecked. [Chroma Format] Select a YUV pixel format from the list. [Profile/Level] Select a profile & level. If [Chroma Format] is [4:2:0] and [4:2:2], the profile will be set to Main Profile and 422Profile, respectively. The level for SD image quality will be Main Level, and the level for HD image quality will be High Level. The profile & level changes according to the format selected in [Chroma Format].
	[Bit Rate] Select a bitrate from the list.
	[Format] Select the format to export.
	[HQX CODEC settings] For the setting items, see the descriptions given for [Grass Valley HQ AVI] / [Grass Valley HQX AVI] exporter. [Grass Valley HQ AVI] / [Grass Valley HQX AVI] Dialog Box►P61

[Audio settings]	[Channels] Select the number of audio channels you want to export from the list. [Current setting] is the number of channels configured in the source file. If [Enable Conversion] is checked for the exporter and the number of channels for the audio format is changed from the source file, the number of channels will be the number set here. [Quantization Bit Rate] Select the number of bits to be used during sampling from the list. [Current setting] is the number of bits configured in the source file. [Channels Per Track] Specify the number of channels to be included in 1 audio track for MXF. [Type] Select the audio format to export.
[System Type]	Select a system item format.
[KAG Size]	Select a KAG (KLV Alignment Grid) size.
[Operational Pattern]	Select Operational Pattern from the list.

Registering Exporter Settings as Preset

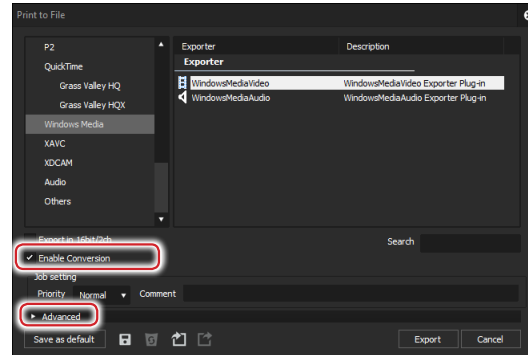
An exporter setting can be registered as a preset exporter.

- 1 Select an exporter in the [Print to File]/[Print to File] dialog box.



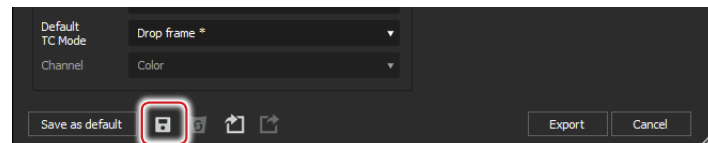
- 2 If necessary, select the check box of [Enable Conversion] and click the expansion button of [Advanced] to configure the settings.

[Enable Conversion] is not displayed in the [Print to File] dialog box.



[Print to File] (Detailed Settings) Dialog Box►P38

- 3 Click [Save preset] in the [Print to File] dialog box.



[Preset Dialog] will be displayed.

- 4 Enter a preset exporter name in [Preset name], and configure the export details.

The export contents differ depending on the exporter.

POINT

- You can enter your preferred description in [Description]. It will be displayed at the exporter/preset list in the [Print to File] dialog box.

- 5 Click [OK].

The created preset is registered in the exporter/preset list.

POINT

- When you click [My presets] in the category tree, all user-registered exporter presets are displayed in the exporter/preset list.
- To change the settings of already-created exporter presets, select the preset exporter to be changed, click [Save preset] and change the settings.

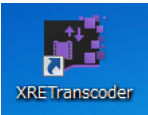
Checking job status

The progress status and history of jobs can be checked in the job list of XRE Transcoder.

If it is running on the controller, the “management mode” is active. In the management mode, you can reorder the jobs to be executed.

The job list shows not only the jobs requested by XRE Transcoder, but jobs requested by EDIUS.

- 1 Double-click the XRE Transcoder icon on the desktop.

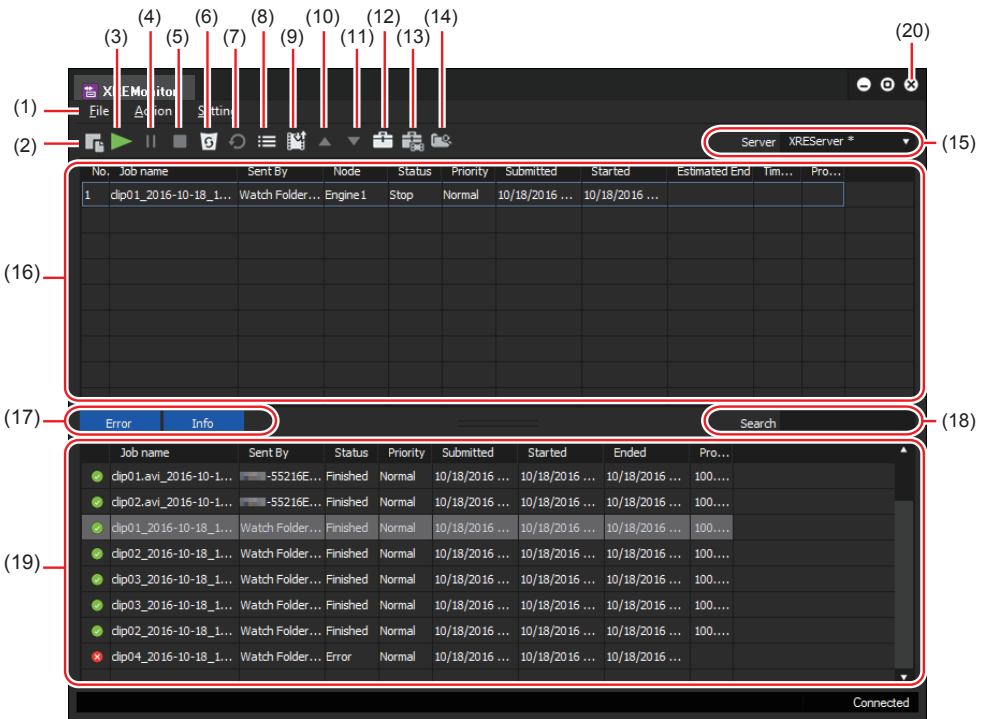


If XRE Transcoder is already started and the XRE Transcoder icon is in the task tray, right-click on the icon and then click [Open XRE Transcoder].

Alternative

- Click the [start] menu, and then click [All Programs] > [Grass Valley] > [XRETranscoder].

❖ [XRE Transcoder] Dialog Box



(1) Menu bar	The menu bar also allows you to perform the operations from (2) to (14) in the table.
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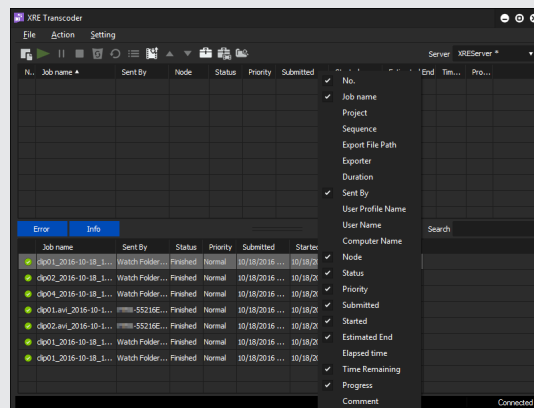
(2) [Add job]	Specify a desired file and request conversion process (transcode job) to the controller. Specifying and Converting a File►P32
(3) [Restart]*	Click this button to restart a job after selecting a paused or stopped job from the [Job List (above)].
(4) [Pause]*	Pauses the job you selected from the [Job List (above)].
(5) [Stop]*	Stops the job you selected from the [Job List (above)].
(6) [Cancel]*	Cancels the job you selected from the [Job List (above)]. The canceled job will move to the [Job List (below)].
(7) [Retry]*	Performs the job you selected from the [Job List (below)] again.
(8) [Property]	Shows the properties of the job you selected from the [Job List (above)] or [Job List (below)]. Checking job properties►P107
(9) [Change job order] (management mode only)	Turns on/off the job sorting. Sorting the order to perform jobs in XRE Transcoder (management mode)►P109
(10) [Up] (management mode only)	Moves up the order to perform the job you selected from the [Job List (above)]. Sorting the order to perform jobs in XRE Transcoder (management mode)►P109
(11) [Down] (management mode only)	Moves down the order to perform the job you selected from the [Job List (above)]. Sorting the order to perform jobs in XRE Transcoder (management mode)►P109
(12) [Settings]	Configure settings in [Server setting], [Error notification], and [Watch Folder]. Configuring XRE Transcoder►P16
(13) [Plug-in settings]	Configure the plug-in settings. Plug-in settings►P21
(14) [Watch folder setting]	Configure the Watch folder settings. Converting a File Automatically (Watch folder function)►P44
(15) [Server]	The currently connected controller is displayed. Clicking the list shows the list of the controllers stored as destinations, which allows you to switch the controller to check job status.

(16) Job List (above)	Shows the active jobs and jobs waiting to be performed.
(17) [Error]/[Info]	Choose the job history types to be shown. To show all of the job history, click both of them. [Error] Click this to show only jobs in which errors occurred. [Info] Click this to show jobs in which no error occurred (successful and canceled ones).
(18) [Search]	Enter a keyword to narrow down the search result of the [Job List (below)].
(19) Job List (below)	Shows the history of the performed jobs. A successful job is shown with , a job in which an error occurred is shown with , and a canceled job is shown with . The number of days to keep the history can be configured on the XRE Management Server.
(20) Close	Closes the [XRE Transcoder] dialog box.

* On PCs other than for the controller, only the user who has requested the job can perform operations regarding their own job.

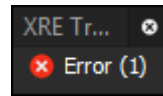
POINT

- If [Change job order] is turned off, every click on an item name in the [Job List (above)] can sort the rendering jobs in ascending or descending order. Sorting is not available if [Change job order] is turned off. Sorting is available in the [Job List (below)] whether [Change job order] is turned on or off.
- Displayed items can be customized. Right-click on an item name, and then check the item(s) to display.



About error notifications

If an error occurs during job process, an error message appears near the task tray.



If you click the error message, it disappears.

POINT

- You can check the type of errors you will be notified of and change it.

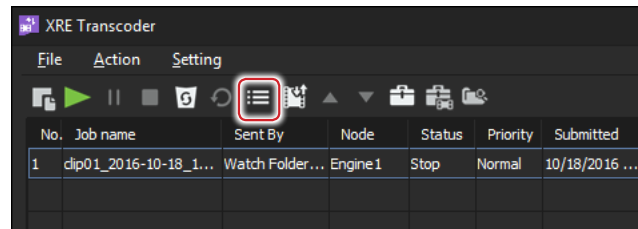
Configuring XRE Transcoder►P16

- You will not be notified of error details. You can check them in the [Job List (below)] of the [XRE Transcoder] dialog box. A job in which an error occurred is shown with .

[XRE Transcoder] Dialog Box►P104

Checking job properties

- Select a job from the [Job List (above)] or [Job List (below)], and then click [Property].

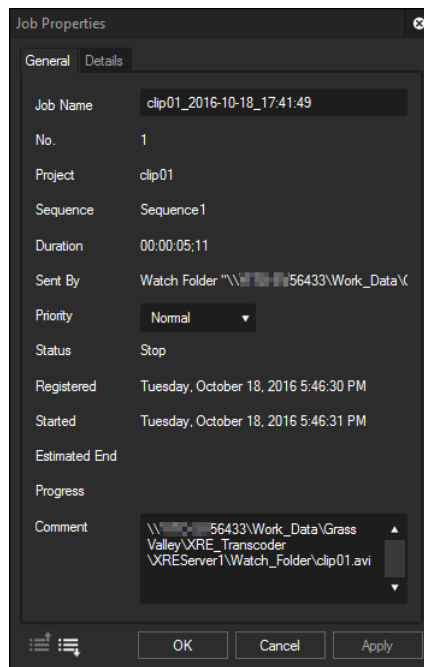


Alternative

- Select a job from the [Job List (above)] or [Job List (below)], and then click [Action] > [Property] from the menu bar.
- Select a job from the [Job List (above)] or [Job List (below)], right-click on it, and then click [Property].
- Double-click a job in the [Job List (above)] or [Job List (below)].

❖ [Job Properties]

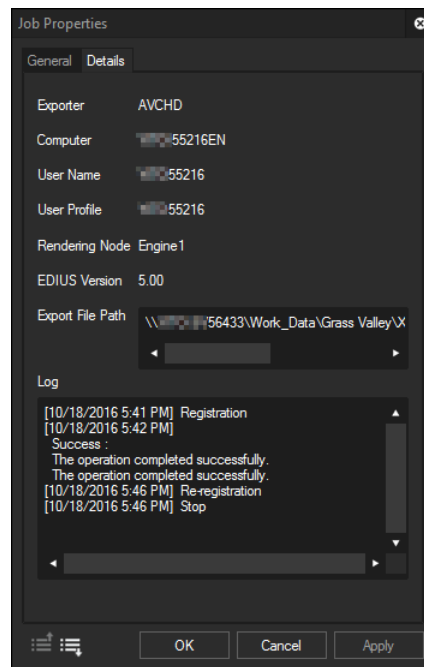
➤ [General] tab



POINT

- You can configure the [Job Name], [Priority], and [Comment] settings for a job in the [Job List (above)].
- In XRE Transcoder (management mode), you can change the [Job Name], [Priority], and [Comment] settings for all jobs. On PCs other than for the controller, only the user who has requested the job can change [Job Name], [Priority], and [Comment] of their own job.
- Properties of a job in the [Job List (below)] cannot be changed. When viewing properties of a job in the [Job List (below)], [History] appears in the dialog box caption.

➤ [Details] tab



You can view the properties of the next upper or lower job from the currently displayed one by clicking or .

Sorting the order to perform jobs in XRE Transcoder (management mode)

Note

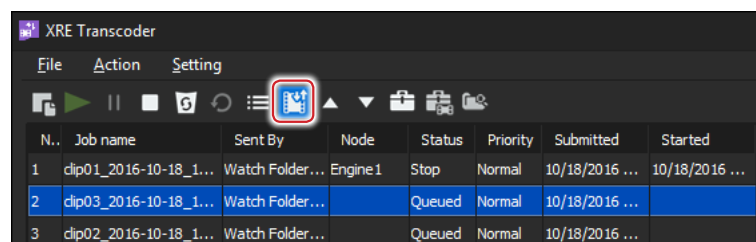
- On PCs other than for the controller, job reordering cannot be performed.

1 Click [Change job order] to turn it on.

Every click switches on and off.

When set to on, the button appears in blue and job, indicating that reordering is enabled.

Ex. When turned on

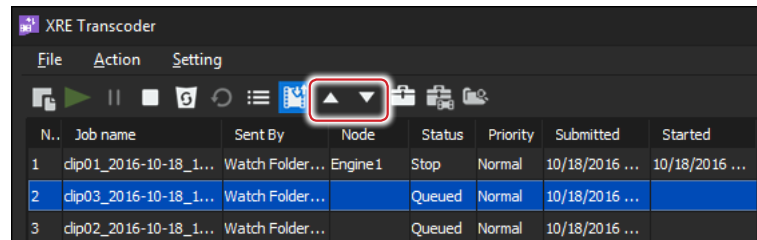


POINT

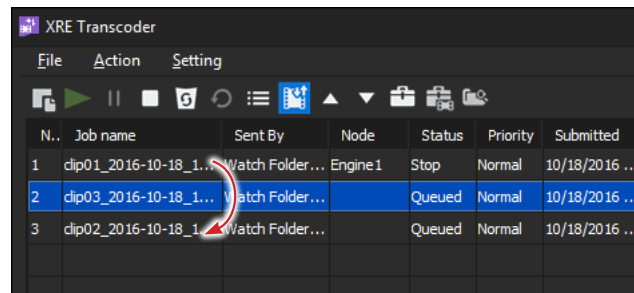
- If job sorting is enabled, jobs are sorted by the order in which they are performed.

Alternative

- Click [Action] > [Change job order] from the menu bar. A check mark appears if job sorting is enabled.
 - Right-click on a job in the [Job List (above)] or [Job List (below)], and then click [Change job order]. A check mark appears if job sorting is enabled.
- 2** Select a job from the [Job List (above)], and then click either [Up] or [Down].

**Alternative**

- Select a job from the [Job List (above)], and then click [Action] > [Up] or [Down] from the menu bar.
- Select a job from the [Job List (above)], right-click on it, and then click [Up] or [Down].
- Select a job from the [Job List (above)], and then drag and drop the job in the upper or lower direction.



Appendix

Supported Format

Input format

❖ Video

Format	File extension
3GP	*.3gp, *.3g2
ASF	*.asf
AVCHD	*.m2ts, *.mts
AVI File	*.avi
CompuServe GIF Files	*.gif
DIF stream	*.dif, *.dv
DPX (SMPTE 268M-2003) Files	*.dpx
F4V	*.f4v
ICO Decoder	*.ico, *.icon
JPEG Decoder	*.jpe, *.exif
JPEG File Interchange Format Files	*.jfif
JPEG Files	*.jpg, *.jpeg
MOV	*.mov
MP4	*.mp4, *.m4v
MPEG HDD MOVIE	*.mod, *.tod
MPEG Program Stream	*.mpg, *.mpeg, *.m2p, *.mp2, *.vob, *.vro
MPEG Transport Stream	*.m2t
MPEG Video Stream	*.mpv, *.m2v
MXF	*.mxf
Maya IFF	*.iff
Multi-PictureFormat	*.mpo
Photoshop Files	*.psd
Portable Network Graphics Files	*.png
Quick Titler	*.etl

Format	File extension
RED File	*.R3D
SGI Files	*.sgi, *.rgb
Sony HVR-DR60/HVR-MRC1 Meta File	*.idx
TIFF Files	*.tif, *.tiff
Targa Files	*.tga, *.targa, *.vda, *.icb, *.vst
Transport Stream	*.ts
WMPhoto Decoder	*.wdp, *.jxr
Windows Bitmap Files	*.bmp, *.dib, *.rle
Windows Media	*.wmv, *.asf
Windows Meta Files	*.wmf, *.emf
XF Clip File	*.cif
Spanned clips such as for P2 or XDCAM	*.xml

* When you use the Watch folder function, spanned clips such as for P2 cannot be specified as source files.

❖ Audio

Format	File extension
AAC	*.aac, *.m4a
AIFF* ¹	*.aiff, *.aif
Dolby Digital (AC-3)	*.ac3
Dolby Digital Professional (AC-3)	*.ac3
Dolby Digital Plus (E-AC-3)	*.ec3
MPEG Audio Layer-3* ²	*.mp3
MPEG Audio Stream	*.mpa, *.m2a
Ogg Vorbis file	*.ogg
Wave	*.wav
Windows Media Audio	*.wma

*¹ AIFF/AIFC files are PCM only.

*² Some VBR are not supported.

❖ **Formats Added at Installation of QuickTime**

Format	File extension
3GPP Files	*.3gp, *.3g2, *.amc
AAC Files	*.aac, *.m4a
Flash Pix Files	*.fpx
Flash Video	*.f4v
MPEG4 File	*.mp4, *.m4v
Mac Pict Files	*.pic, *.pct, *.pict
QuickTime Image Files	*.qtif, *.qti, *.qif
QuickTime Movie	*.mov

Output format❖ **Video****Note**

- Some formats may not support codec.
- Depending on the device specifications and compatibility, playback and output on the device may not be supported.

Format/ container	Codec	File extension	Category name in [Print to File] dialog box	Exporter	Page
AVCHD	—	*.m2ts	[AVCHD]	[AVCHD] [AVCHD Writer]	► P78

Format/ container	Codec	File extension	Category name in [Print to File] dialog box	Exporter	Page
AVI	Grass Valley HQ	*.avi	[AVI]	[Grass Valley HQ AVI]	► P61
	Grass Valley HQX			[Grass Valley HQX AVI]	
	Grass Valley Lossless			[Grass Valley Lossless AVI]	
	DV			[DV AVI]	
	DVCPRO50			[DVCPRO50 AVI]	
	DVCPRO HD			[DVCPRO HD AVI]	
	Uncompressed (RGB)			[Uncompressed (RGB)AVI]	
	Uncompressed (RGBA)			[Uncompressed (RGBA)AVI]	
	Uncompressed (UYVY)			[Uncompressed (UYVY)AVI]	
	Uncompressed (YUY2)			[Uncompressed (YUY2)AVI]	
	Uncompressed (v210)			[Uncompressed (v210)AVI]	
Blu-ray	H.264/AVC	*.m2ts	[H.264/AVC]	[Blu-ray]	► P69
Flash Video	H.264/AVC	*.f4v	[H.264/AVC]	[F4V]	► P77
GF	MPEG-2 I-frame only	*.xml + *.mxf	[GF]	[GF clip]	► P81
	MPEG-2 Long GOP				
	DV			[GF clip (DV)]	
	DVCPRO25			[GF clip (DVCPRO25)]	
	DVCPRO50			[GF clip (DVCPRO50)]	
	SD			[GF clip (SD)]	
H.264/AVC	H.264/AVC	*.mp4	[H.264/AVC]	[H.264/AVC]	► P72
HDV	MPEG-2 Transport Stream	*.m2t	[HDV]	[HDV]	► P67
H.265/HEVC	H.265/HEVC	*.mp4	[H.265/HEVC]	[H.265/HEVC]	► P77

Format/ container	Codec	File extension	Category name in [Print to File] dialog box	Exporter	Page
Infinity	DV	*.xml	[Infinity]	[Infinity DV]	► P82
	JPEG2000	+ *.mxf		[Infinity JPEG2000]	
	D10			[Infinity D10]	
	MPEG			[Infinity MPEG]	
iPod	H.264/AVC	*.mp4	[H.264/AVC]	[iPod]	► P72
K2 (CMF)	AVC-Intra50	*.xml	[K2]	[K2 AVCIntra Clip]	► P94
	AVC-Intra100				
	AVC-LongG			[K2 AVCUltra Clip]	
	AVCHD			[K2 AVCHD Clip]	
	D10			[K2 D10 Clip]	
	DNxHD			[K2 DNxHD Clip]	
	DV			[K2 DV Clip]	
	DVCPRO HD			[K2 DVCPRO HD Clip]	
	MPEG-2			[K2 MPEG2 Clip]	
K2 (GXF)	AVC-Intra50	*.gxf	[K2]	[AVCIntra GXF]	► P90
	AVC-Intra100				
	AVC-LongG			[AVCUltra GXF]	
	D10			[D10 GXF]	
	DNxHD			[DNxHD GXF]	
	DV			[DV GXF]	
	DVCPRO25			[DVCPRO25 GXF]	
	DVCPRO50			[DVCPRO50 GXF]	
	DVCPRO HD			[DVCPROHD GXF]	
	JPEG2000			[JPEG2000 GXF]	
	MPEG-2			[MPEG2 GXF]	
MPEG-2 Video Elementary Stream	MPEG-2	*.m2v	[MPEG]	[MPEG2 Elementary Stream]	► P73
MPEG-2 Program Stream	MPEG-2	*.mpg, *.m2p	[MPEG]	[MPEG2 Program Stream]	
MP4	H.264/AVC	*.mp4	[H.264/AVC]	[H.264/AVC]	► P72

Format/ container	Codec	File extension	Category name in [Print to File] dialog box	Exporter	Page
MXF	AVC-Intra50	*.mxf	[MXF]	[AVCIntra MXF]	► P98
	AVC-Intra100				
	AVC-Intra200				
	AVC-LongG			[AVCUltra MXF]	
	D10			[D10 MXF]	
	DNxHD			[DNxHD MXF]	
	DV			[DV MXF]	
	DVCPRO25			[DVCPRO25 MXF]	
	DVCPRO50			[DVCPRO50 MXF]	
	DVCPRO HD			[DVCPROHD MXF]	
	Grass Valley HQ			[HQ MXF]	
	Grass Valley HQX			[HQX MXF]	
	JPEG2000			[JPEG2000 MXF]	
	MPEG-2			[MPEG2 MXF] [MPEG2 Legacy MXF]	
	Apple ProRes			[ProRes MXF]	
P2	AVC-Intra50	*.xml + *.mxf	[P2]	[HD P2 Clip]	► P83
	AVC-Intra100				
	AVC-Intra200				
	AVC-LongG			[AVCUltra P2 Clip]	
	AVC-Intra 4K 422				
	DV			[P2 Clip]	
	DVCPRO25				
	DVCPRO50				
	DVCPRO HD			[HD P2 Clip]	
PlayStation Portable	H.264/AVC	*.mp4	[H.264/AVC]	[PlayStation Portable]	► P72

Format/ container	Codec	File extension	Category name in [Print to File] dialog box	Exporter	Page
QuickTime	Apple ProRes	*.mov	[QuickTime]	[Apple ProRes MOV]	► P67
	QuickTime			[QuickTime]* ¹	
	Grass Valley HQ			[Grass Valley HQ MOV]	
	Grass Valley HQX			[Grass Valley HQX MOV]	
WindowsMedia	—	*.wmv	[Windows Media]	[WindowsMediaVideo]	► P59
XAVC	XAVC Intra	*.xml	[XAVC]	[XAVC]	► P88
	XAVC Long GOP	+ *.mxf			
	XAVC S* ²	*.xml + *.mp4		[XAVC S]	► P87
XDCAM	DVCAM	*.xml	[XDCAM]	[XDCAM DV]	► P85
	MPEG IMX	+ *.mxf		[XDCAM MPEG IMX]	
	MPEG HD			[XDCAM HD]	
	MPEG HD422			[XDCAM HD 422]	
	MPEG HD 720P			[XDCAM HD 720P]	
XDCAM EX	DVCAM	*.xml	[XDCAM]	[XDCAM EX DV]	► P79
	MPEG HD	+ *.mp4		[XDCAM EX]	
DV	DV	.dv	[DV]	[DV stream]	—

*1 If QuickTime has been installed, the following output formats are available.

[3G], [AIFF], [Apple TV], [AU], [AVI], [DV stream], [FLC], [iPhone], [iPhone (Cellular)], [iPod], [MPEG-4], [QuickTime Movie], [Wave], [Image Sequence]

*2 To load medium where a file has been exported to the camera, perform [Restore Media] on the camera. Thumbnails cannot be displayed on the camera.

❖ Audio

Format/container	File extension	Category name in [Print to File] dialog box	Exporter	Page
Dolby Digital (AC-3)	*.ac3	[Audio]	[Dolby Digital (AC-3)]	► P62
AIFF	*.aif, *.aiff	[Audio]	[PCM AIFF]	
Wave	*.wav	[Audio]	[PCM WAVE]	
Sony/Sonicfoundry Wave64	*.w64	[Audio]	[Sony/Sonicfoundry Wave64]	
Windows Media Audio	*.wma	[Windows Media]	[WindowsMediaAudio]	
Dolby Digital Professional (AC-3)	*.ac3	[Audio]	[Dolby Digital Professional (AC-3)]	► P63
Dolby Digital Plus (E-AC-3)	*.ec3	[Audio]	[Dolby Digital Plus (E-AC-3)]	
MPEG-1 Audio Elementary Stream	*.mpa	[MPEG]	[MPEG2 Elementary Stream]	► P73

Restrictions

- Still images (including still images with increment numbers) cannot be specified as output formats.
- When you use the Watch folder function, spanned clips such as for P2 cannot be specified as source files.
- When you use the Watch folder function, an external device cannot be specified as the output destination.