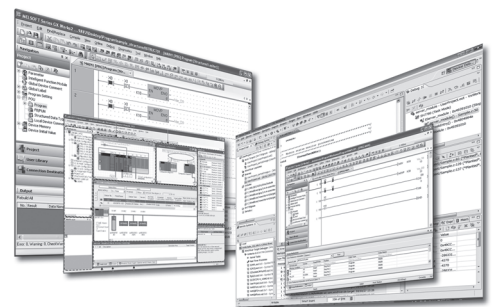


MELSOFT

Video Verification Tool Operating Manual

-SW1DNN-REPROA-M





SAFETY PRECAUTIONS

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully, and pay full attention to safety to handle the product correctly.

The precautions given in this manual are concerned with this product only. For the safety precautions for the programmable controller system, refer to the user's manual for the module used and MELSEC iQ-R Module Configuration Manual.

In this manual, the safety precautions are classified into two levels: "⚠️ WARNING" and "⚠️ CAUTION".

 WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
 CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "⚠️ CAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

CONDITIONS OF USE FOR THE PRODUCT

(1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;

- i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
- ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.

("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above restrictions, Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTS are required. For details, please contact the Mitsubishi representative in your region.

INTRODUCTION

Thank you for purchasing Mitsubishi Electric programmable controller.

This manual is designed for users to understand operations of Video Verification Tool.

Before using the product, please read this manual carefully and develop familiarity with the functions and performance of Video Verification Tool to handle the product correctly.

Please make sure that the end users read this manual.

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CONTENTS

SAFETY PRECAUTIONS	1
CONDITIONS OF USE FOR THE PRODUCT	2
INTRODUCTION.....	3
RELEVANT MANUALS	6
CHAPTER 1 OVERVIEW	7
1.1 Features	7
CHAPTER 2 OPERATING ENVIRONMENT	9
CHAPTER 3 OBTAINING AND START OF Video Verification Tool	11
3.1 Obtaining of Video Verification Tool	11
3.2 Installation and Uninstallation	11
3.3 Start and End	12
CHAPTER 4 OPERATION FLOW	13
CHAPTER 5 SCREEN CONFIGURATION	15
5.1 Main Window	15
5.2 Menu Configuration.....	17
CHAPTER 6 OPERATION METHODS	18
6.1 Playing a Video File.....	18
6.2 Adding/Deleting a Log Marker	20
Reading a log marker information file	21
CHAPTER 7 HELP MENU	23
7.1 Opening Manual.....	23
7.2 Connecting to MITSUBISHI ELECTRIC FA Global Website	23
7.3 Version Information.....	23
CHAPTER 8 TROUBLESHOOTING	25
REVISIONS	27
TRADEMARKS	28

RELEVANT MANUALS

Manual name [manual number]	Description	Available form
Video Verification Tool Operating Manual [BCN-P5999-1327] (This manual)	Basic operations and method for playing a video file in Video Verification Tool	e-Manual PDF
Camera Recording Package User's Manual [BCN-P5999-1324]	Network camera settings, programmable controller settings, and function blocks for the camera recording function	e-Manual PDF
GX Works3 Operating Manual [SH-081215ENG]	System configurations, parameter settings, and operation methods for the online function in GX Works3	e-Manual PDF
GX LogViewer Version 1 Operating Manual [SH-080915ENG]	Basic operations of GX LogViewer and system configurations, functions, and operation methods of devices, software, or files to display data in GX LogViewer	Print book e-Manual PDF
MELSEC iQ-R System Recorder User's Manual (Startup) [SH-082279ENG]	Specifications, procedures for operation, and system configuration of System Recorder, and specifications of a recorder module	Print book e-Manual PDF
MELSEC iQ-R System Recorder User's Manual (Application) [SH-082281ENG]	Functions, parameter settings, recording settings, and troubleshooting of System Recorder, and detailed specifications of a recorder module	Print book e-Manual PDF

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e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.

e-Manual has the following features:

- Required information can be cross-searched in multiple manuals.
- Other manuals can be accessed from the links in the manual.
- Hardware specifications of each part can be found from the product figures.
- Pages that users often browse can be bookmarked.
- Sample programs can be copied to an engineering tool.

1 OVERVIEW

Video Verification Tool plays a video file generated by using FBs included in Camera Recording Package.

For details on Camera Recording Package, refer to the following:

📖 Camera Recording Package User's Manual

When recording video using FBs included in Camera Recording Package, the video can be checked on a personal computer on which GX Works3 is not installed by using Video Verification Tool.

Therefore, a field operator can check the video.

Moreover, 'log marker' can be added as a mark to an image to be checked.

Sharing an added log marker between users is useful for checking a program of when an image was recorded and an image of when a program error occurred.

1.1 Features

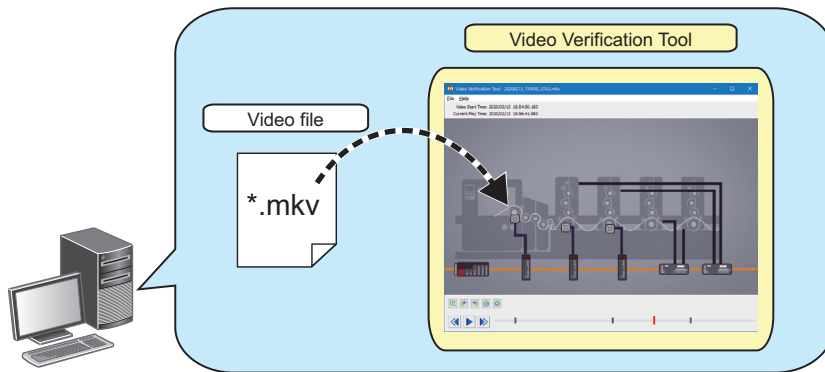
This section explains the features of Video Verification Tool.

Playing a video file

A video file generated in Camera Recording Package can be opened, and an image in the video file can be displayed.

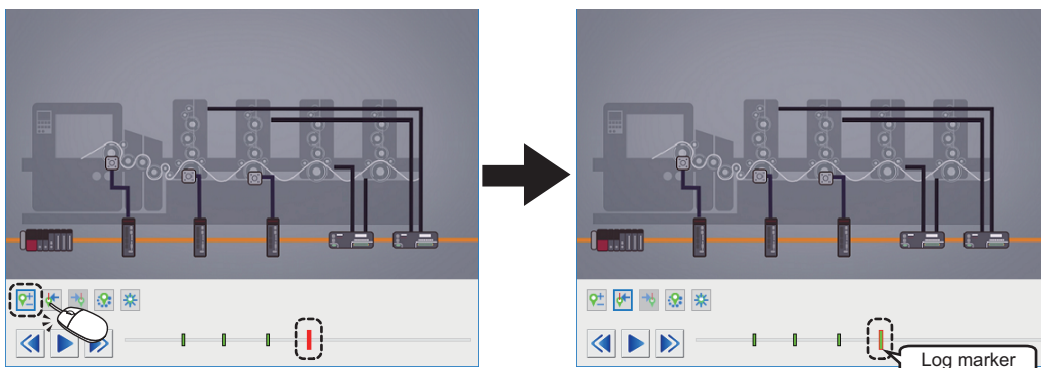
(👉 Page 18 Playing a Video File)

Video can be played forward or backward frame by frame, while playing a video file.



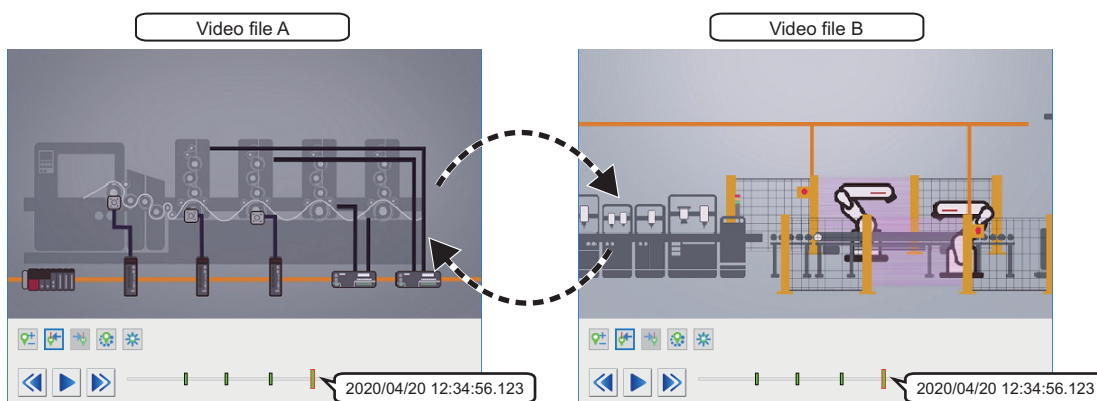
Adding a log marker

A log marker can be added to an arbitrary image while playing a video file. (☞ Page 20 Adding/Deleting a Log Marker)
Adding a log marker to an image to be checked is useful for analyzing the image.



Moreover, the added log marker can be applied to another video file. (☞ Page 21 Video Verification Tool)

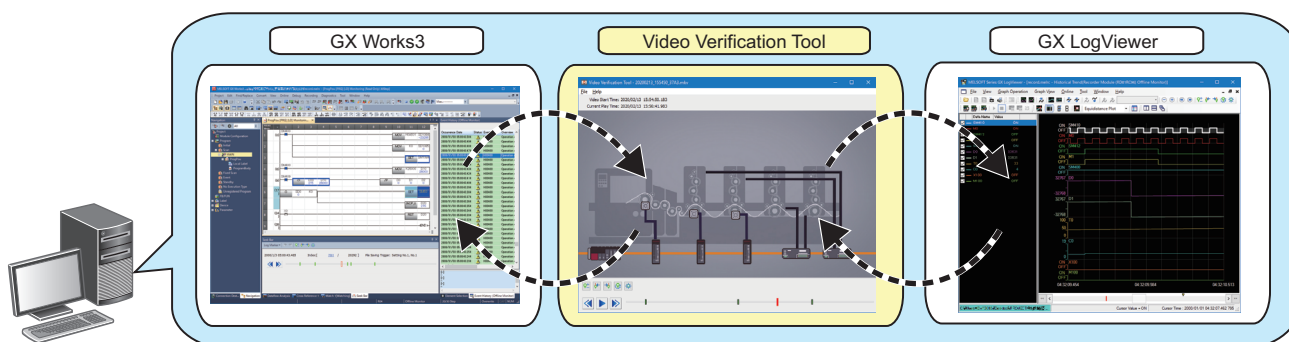
Applying the log marker to another video file is useful for checking an image in the file recorded at the same time as the one to which the marker was added.



A log marker added to a video file in Video Verification Tool can be applied to a recording file or data logging file in GX Works3 and GX LogViewer. (☞ Page 22 GX Works3, Page 22 GX LogViewer)

Moreover, log markers added to a recording file or data logging file in GX Works3 and GX LogViewer can be applied to a video file in Video Verification Tool. (☞ Page 21 Video Verification Tool)

Applying the same log marker to each file is useful for checking the operation of a program, an event history, and a device or label value of when an image to be checked was recorded.



2 OPERATING ENVIRONMENT

This chapter shows the operation environment of Video Verification Tool.

Item	Description
Computer	<ul style="list-style-type: none">• A personal computer on which Microsoft®Windows®operates• Industrial PC MELIPC (MI5122-VW, MI3321G-W, MI3315G-W, MI2012-W, MI2012-W-CL)
CPU	Intel® Core™ 2 Duo Processor 2GHz or more recommended
Memory requirements	2 GB or more recommended
Free hard disk space	2 GB or more
Web browser	Internet Explorer® 9 or later
Display	Resolution 1024 × 768 pixels or higher
OS*1,*2,*3,*4,*5	64-bit version (Japanese, English) <ul style="list-style-type: none">• Windows 10 version 1703 or later (Home, Pro, Enterprise, Education)• Windows 10 IoT Enterprise 2016 LTSB

*1 Use the product as an administrator.

*2 This product may not operate properly when using any of the following functions:

- Application start-up in Windows compatibility mode
- Fast user switching
- Remote desktop
- Windows Touch or Touch
- Modern UI
- Client Hyper-V
- Tablet mode
- Virtual desktop
- Unified Write Filter

*3 The screen of this product may not work properly in the following cases:

- The size of the text and other items in the screen is other than 100% (96 DPI, 9 pt etc.). (☞ Page 25 TROUBLESHOOTING)
- The resolution of the screen is changed in operation.
- The multi-display is set.

*4 In this product, the period (.) is used as the symbol of the decimal point. Regardless of the setting of "Decimal symbol" on the control panel, use the period when enter the decimal point.

*5 Cannot be used if the user is logged on with parental control enabled.

3 OBTAINING AND START OF Video Verification Tool

3.1 Obtaining of Video Verification Tool

In Japan

Video Verification Tool can be downloaded from Mitsubishi Electric FA site.

www.MitsubishiElectric.co.jp/fa

For downloading Video Verification Tool, please register for a free membership on Mitsubishi Electric FA site in advance.

In other countries

For the information on how to obtain Video Verification Tool, please consult your local Mitsubishi representative.

3.2 Installation and Uninstallation

This section shows procedures to install and uninstall Video Verification Tool.

Installation

■ Confirm before installation

- Log on to a personal computer as an administrator.
- Close all the running applications before installation. If the product is installed while other applications are running, it may not operate normally.

■ Installation procedure

Operating procedure

1. Unzip the compressed folder.
2. Double-click 'setup.exe' in the unzipped folder to start the installer.
3. Select or enter the necessary information by following the on-screen instructions.

Uninstallation

Operating procedure

Uninstall Video Verification Tool from the control panel of Windows.

3.3 Start and End

This section shows the operation procedure for starting and ending Video Verification Tool.

Start

Operating procedure

Select [MELSOFT] ⇒ [Video Verification Tool] from Windows® Start*1.

*1 Select [All apps] in the Start screen or [Start] ⇒ [All Programs]/[All apps].

End

Operating procedure

Select [File] ⇒ [Exit].

4 OPERATION FLOW

This chapter explains the operation flow to check video of a video file by using Video Verification Tool.

1. Start Video Verification Tool. (👉 Page 12 Start)
2. Play a video file. (👉 Page 18 Playing a Video File)
3. Add a log marker to the video file. (👉 Page 20 Adding/Deleting a Log Marker)
4. Apply a log marker added to a recording file or data logging file to the video file. (👉 Page 21 Reading a log marker information file)
5. Apply the log marker added to the video file to the recording file or data logging file. (👉 Page 21 Reading a log marker information file)

MEMO

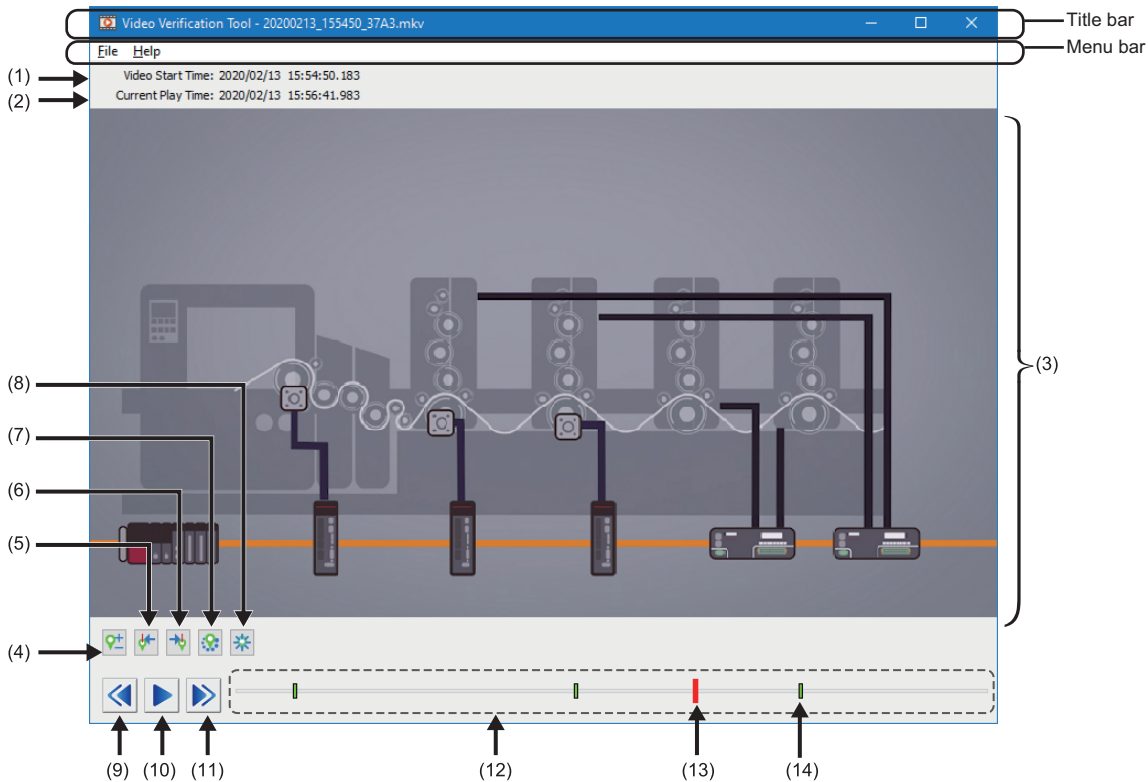
5 SCREEN CONFIGURATION

5.1 Main Window







This section explains the configuration of the main window.






Window

Start Video Verification Tool. (🖱️ Page 12 Start)




Displayed items

No.	Item	Description
(1)	Video Start Time	The recording start time acquired from an xml file in which time information of a video file is recorded is displayed when opening the video file. Format: YYYY/MM/DD hh:mm:ss.sss
(2)	Current Play Time	The time pointed by a slider is displayed. By moving the slider, the time is updated. Format: YYYY/MM/DD hh:mm:ss.sss
(3)	Video display area	An image recorded at the time pointed by a slider is displayed. By moving the slider, the image is updated. The display magnification of the image is adjusted automatically according to the size of the main window. (An aspect ratio is not changed.)
(4)	 Add/delete Log Marker	Click this to add and delete a log marker. (🖱️ Page 20 Adding/Deleting a Log Marker)
(5)	 Previous Log Marker	Click this to move a slider to a previous log marker.
(6)	 Next Log Marker	Click this to move a slider to a next log marker.
(7)	 Read Log Marker information	Click this to read a log marker information file. (🖱️ Page 21 Reading a log marker information file)
(8)	 Delete all Log Markers	Click this to delete all the log markers on a seek bar.
(9)	 Play backward by one frame	Click this to play a video file backward by one frame.

No.	Item	Description
(10)	 Play  Pause	<p>Click this to play/pause a video file.</p> <p>While playing the video file,  (Pause) is displayed.</p> <p>While pausing the video file,  (Play) is displayed.</p> <p>A video file is stopped, if any other operation is performed in Video Verification Tool while playing the video file.</p>
(11)	 Play forward by one frame	Click this to play a video file forward by one frame.
(12)	Seek bar	<p>The range of the open video file is shown.</p> <p>By clicking a seek bar, a slider moves to the position clicked.</p>
(13)	Slider	<p>The position of an image being displayed in the video display area is shown.</p> <p>A slider is displayed in red on a seek bar.</p> <p>By dragging the slider to the left or right, the image is updated.</p>
(14)	Log marker	<p>An added log marker is shown.</p> <p>A log marker is displayed in green on a seek bar.</p>

Point 

By clicking the  +  /  +  keys, a slider moves to the left or right.

5.2 Menu Configuration

The following tables show menus of Video Verification Tool.

[File]	Reference
⇒ [Open]	Page 18 Playing a Video File
⇒ [Exit]	Page 12 End

[Help]	Reference
⇒ [Open Manual]	Page 23 Opening Manual
⇒ [Connection to MITSUBISHI ELECTRIC FA Global Website]	Page 23 Connecting to MITSUBISHI ELECTRIC FA Global Website
⇒ [Version Information]	Page 23 Version Information

6 OPERATION METHODS


6.1 Playing a Video File

Video file

The following table shows the specifications of a video file that can be played in Video Verification Tool.

Item	Description
File format	*.mkv
Maximum file size	2 GB
Image resolution (pixels)	320 × 240, 640 × 480, 1280 × 720, 1920 × 1080
Frame rate (fps)	10, 15, 25, 30, 50, 60, 100, 120

For details on a video file, refer to the following:

 Camera Recording Package User's Manual

Restrictions

The following table shows the restrictions when playing a video file.

No.	Description
1	<p>Only video file which satisfies the following conditions can be played.</p> <ul style="list-style-type: none">• A video file was generated by using FBs included in Camera Recording Package.• An xml file in which time information is recorded is stored in the same folder as a video file.• The frame rate is recorded normally. (Not a fast-forwarding or slow-motion video.)• Images of a video are recorded continuously.• A video file is saved on a personal computer. (Not saved on a network drive or removable media.)• Any of the following operations is not performed:<ul style="list-style-type: none">-Changing the configuration of a folder in which a video file is stored-Changing a file name-Editing a file
2	Audio of a video file cannot be played in Video Verification Tool.
3	When playing a high-resolution video file, it may take time to display an image.
4	When installing Video Verification Tool on Windows 10 IoT Enterprise 2016 LTSC (including an industrial PC MELIPC), a video file compressed into MJPEG(Motion JPEG) format cannot be opened.
5	<p>When a network camera manufactured by Axis Communications is set in Video Verification Tool, a decoder manufactured by a third party may be installed.</p> <p>In this case, Video Verification Tool may not operate normally.</p> <p>If such error occurs, uninstall the decoder manufactured by the third party.</p> <p>Example: When uninstalling a decoder manufactured by Axis Communications</p> <p>Delete both of the following files.</p> <ul style="list-style-type: none">• C:\Program Files (x86)\Axis Communications\Components\AxMJPEGDec.dll• C:\Program Files (x86)\Axis Communications\Components\AxH264Dec.dll• C:\Program Files (x86)\Axis Communications\AXIS Media Control Embedded\AxMJPEGDec.dll• C:\Program Files (x86)\Axis Communications\AXIS Media Control Embedded\AxH264Dec.dll <p>Change C:\Program Files (x86) according to the installation destination directory.</p>


Playing a video file

The following explains the procedure for opening a video file generated in Camera Recording Package and displaying an image.


Operating procedure

1. Start Video Verification Tool.
2. Select a video file (*.mkv) in the "Open" screen, and click the [Open] button.

An image in the video file is displayed in the main window.

3. Click  (Play) in the main window.

For the descriptions and operation methods of the main window, refer to the following:

 Page 15 Main Window

Point

If Video Verification Tool has already started, the "Open" screen appears by selecting [File] ⇒ [Open].

Precautions

The time of a video file played in Video Verification Tool is adjusted by an xml file in which time information is recorded.

Before playing the video file, make sure that the xml file is stored in the same folder as the video file.


When generating a video file in Camera Recording Package, an xml file in which time information is recorded is generated at the same time.

6.2 Adding/Deleting a Log Marker

Adding a log marker

The following explains the procedure for adding a log marker to an arbitrary image while playing a video file. Up to 100 log markers can be added to one video file.

Operating procedure


1. Move a slider to the position of an image at which a log marker is to be added.
2. Click  (Add/delete Log Marker).

The added log marker is saved in the folder where the video file is stored as a log marker information file (*.vms).


Deleting a log marker

The following explains the procedure for deleting an added log marker.

Operating procedure

1. Move a slider to a log marker to be deleted.
2. Click  (Add/delete Log Marker).

Point

By clicking , all the log markers in the video file are deleted.

Reading a log marker information file

A log marker added to a video file, recording file, or data logging file can be applied to another file by reading a log marker information file in Video Verification Tool, GX Works3 and GX LogViewer.

A log marker information file is generated when adding a log marker in each tool.

The extension of a log marker information file differs depending on a tool in which a log marker is added.

- *.lms: GX Works3, GX LogViewer
- *.vms: Video Verification Tool

Restriction

Do not perform the following operations to a log marker information file saved in the same folder as a video file. Doing so may result in the failure to read the log marker information file properly.

- Editing a file directly
- Changing the access right

When the time of a CPU module is changed from the standard time to daylight saving time while generating a video file, recording file, and data logging file, the change is applied to the recording file and data logging file, but not to the video file. (This also applies when the time is changed from daylight saving time to the standard.)



Therefore, when reading a log marker information file of a video file in GX Works3 or GX LogViewer, a log marker may not be applied properly.

Video Verification Tool

A log marker which is added to a recording file, data logging file, or other video file can be applied to a video file by reading a log marker information file in Video Verification Tool.

The following explains the procedure for reading a log marker information file.

Operating procedure

1. Open a video file to which a log marker is to be applied. ( Page 18 Playing a Video File)
2. Click  (Read Log Marker Information).
3. Select a log marker information file (*.lms, *.vms), and click the [Open] button.

Precautions

If the total number of log markers which are already added to the video file and ones to be applied exceeds 100, the log marker information file can not be read.

GX Works3

A log marker which is added to a video file can be applied to a recording file or data logging file by reading a log marker information file in GX Works3.

The following explains the procedure for reading a log marker information file.

Operating procedure

1. Start offline monitoring in GX Works3 by using a recording file or data logging file to which a log marker is to be applied.
2. Select [Read] from the pull-down list of the [Log Marker] menu in the "Seek Bar" window.
3. Select a log marker information file (*.vms), and click the [Open] button.

Point

To perform this operation, use GX Works3 Version 1.065T or later.

For the operation methods of GX Works3, refer to the following:

 GX Works3 Operating Manual

Precautions


If the total number of log markers which are already added to the recording file and data logging file and ones to be applied exceeds 100, the log marker information file can not be read.

GX LogViewer

A log marker which is added to a video file can be applied to a recording file or data logging file by reading a log marker information file in GX LogViewer.

The following explains the procedure for reading a log marker information file.

Operating procedure

1. Display a recording file or data logging file to which a log marker is to be applied in the trend graph of GX LogViewer.
2. Select [Graph Operation] ⇒ [Read Log Marker Information] ().
3. Select a log marker information file (*.vms), and click the [Open] button.

Point

To perform this operation, use GX LogViewer Version 1.106K or later.

For the operation methods of GX LogViewer, refer to the following:

 GX LogViewer Version 1 Operating Manual

Precautions

If the total number of log markers which are already added to the recording file and data logging file and ones to be applied exceeds 100, the log marker information file can not be read.

7 HELP MENU

7.1 Opening Manual

Open the operating manual of Video Verification Tool.

Operating procedure

Select [Help] ⇒ [Open Manual].

7.2 Connecting to MITSUBISHI ELECTRIC FA Global Website

Open the MITSUBISHI ELECTRIC FA Global Website in a web browser.

Make sure your personal computer connect to the Internet in advance.

Operating procedure

Select [Help] ⇒ [Connection to MITSUBISHI ELECTRIC FA Global Website].

7.3 Version Information

Display the version information of Video Verification Tool.

Operating procedure

Select [Help] ⇒ [Version Information].

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8 TROUBLESHOOTING

This chapter explains the errors which may occur when using Video Verification Tool, and corrective actions correspond to those errors.

Symptom	Check point	Corrective action
Video Verification Tool cannot be installed.	Is the operating system other than the following used? • Windows 10 (64-bit version)	Use Windows 10 (64-bit version). (☞ Page 9 OPERATING ENVIRONMENT)
An error message is displayed when starting Video Verification Tool.	—	Start Video Verification Tool as an administrator.
Contents in the screen are not displayed properly. (For example, overlapping of icons, text overflowing from the frame of a button, etc.)	Is the size of the text and other items in the screen set to a value other than 100% (96 DPI, 9 pt etc.) in Windows settings?	<ul style="list-style-type: none"> • Set the value to 100% (96 DPI, 9 pt etc.). • For Windows 10 (version 1703 or later)*1, the display of Video Verification Tool can be displayed with high DPI scaling by using a Windows 10 function.*2 <ol style="list-style-type: none"> 1 Select and right-click 'VVTool.exe'*3, and select [Properties] from the shortcut menu. 2 Click the [Change high DPI settings] button in the [Compatibility] tab. 3 Select the checkbox of "Override high DPI scaling behavior. Scaling performed by:", then select "System" from the pull-down list. 4 Click the [OK] button.
A video file cannot be opened.	Is a video file generated by using FBs included in Camera Recording Package?	Use a video file generated by using FBs included in Camera Recording Package.
	Is the configuration of a folder in which a video file is stored changed?	Open a video file without changing the folder configuration when the video file was generated.
	Is the data of a video file edited? Is the name of a video file changed?	Open a video file without changing the data and file name when the video file was generated.
The following error message appears and a video file cannot be opened. • VideoReaderEngine.exe has stopped the operation.	Is a decoder manufactured by a third party installed?	Uninstall a decoder manufactured by a third party.

*1 The Windows version can be checked by the following procedure.

- 1 Press Windows key + **R**, or select [Windows System] ⇨ [Run] from Windows Start.
- 2 Enter 'winver' in the "Run" screen.
- 3 Check the version in the displayed screen.

*2 The display of Video Verification Tool will be blurred by enlarging.

The following lists the setting value for "Change the size of text, apps, and other items" and the recommended display resolution for each setting value in Windows 10.

Setting value: 100%, display resolution: 1024 × 768 dots or more

Setting value: 125%, display resolution: 1900 × 1200 dots or more

Setting value: 150%, display resolution: 1900 × 1200 dots or more

Setting value: 175%, display resolution: 2880 × 1620 dots or more

Setting value: 200%, display resolution: 2880 × 1620 dots or more

Setting value: 225%, display resolution: 3840 × 2160 dots or more

Setting value: 250%, display resolution: 3840 × 2160 dots or more

*3 'VVTool.exe' is stored in the folder where Video Verification Tool is installed.

The following is an example of a storage location.

64-bit version operating system: C:\Program Files (x86)\MELSOFT\REPROA\VVTool.exe

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REVISIONS

*The manual number is given on the bottom left of the back cover.

Revision date	*Manual number	Description
June 2020	BCN-P5999-1327-A	First edition

Japanese manual number: BCN-P5999-1326-A

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BCN-P5999-1327-A(2006)

MODEL:REPROA-O-E

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