

DCS—100A OPTION**DCS-101A****INSTRUCTION MANUAL****(For Optional Moving Image)**

Thank you for purchasing KYOWA's product DCS-100A DYNAMIC DATA RECORDING SOFTWARE (For Optional Moving Image).

Read this Instruction Manual carefully in order to make full use of the high performance capabilities of the product.

Do not use the product in methods other than described in this Manual.

Windows are trademarks of Microsoft Corporation, U.S.A. and other countries.

Generally, company names and trade names described in this Instruction Manual are trademarks or registered trademarks of the companies.

This Instruction Manual may not be copied or reproduced, in whole or part, without consent of KYOWA.

Copyright © Kyowa Electronic Instruments Co., Ltd. All rights reserved.

The contents of the Instruction Manual are subjected to change without prior notice.

CONTENTS

NOTATIONS USED IN THE INSTRUCTION MANUAL	2
ESSENTIAL PRECAUTIONS FOR USING THE DCS-100A	2
1. OUTLINE.....	3
1-1 TARGET MEASURING INSTRUMENT.....	3
1-2 OPERATING ENVIRONMENT	4
2. OPERATIONS FOR ADDING OPTIONAL FUNCTION	5
3. RECORPING MOVING IMAGE.....	7
3-1 PREPARATION	7
3-1-1 Preparation for PC.....	7
3-1-2 Preparation for Webcam	8
3-1-3 Restrictions for Recording Moving Image.....	10
3-2 OPERATING METHOD FOR RECORDING MOVING IMAGE.....	12
3-3 OPERATING METHOD OF MOVING IMAGE	18
3-3-1 Moving Image Reproduce Window	18
3-3-2 Synchronizing Data Reproduce window and Moving Image Reproduce window	24
4-1 RECORDING MOVING IMAGE	27
4-2 MEASURING CONDITIONS WHEN RECORDING MOVING IMAGE	27
4-3 REPRODUCING MOVING IMAGE.....	27

NOTATIONS USED IN THE INSTRUCTION MANUAL

For your convenience, the following notes and memos are stated in this Instruction Manual to attract customer's attention to informative reference items when using the DCS-100A Dynamic Data Recording Software (hereinafter referred to as the DCS-100A) for optional arithmetic operations.

Example:

NOTE

Describes essential instructions for handling the DCS-100A.

MEMO

Describes reference information for handling the DCS-100A.

ESSENTIAL PRECAUTIONS FOR USING THE DCS-100A

NOTE

Do not set your PC to the following state. Or, the DCS-100A may not operate properly.

- Screensaver is set to activate.
- Power consumption function including System standby is set to activate.
- Application software such as virus check software, etc. is set to activate on the way.
- PC is receiving access from the network. Or the PC is accessing to the network.
- Font size is set to other than normal (Small).

1. OUTLINE

The DCS-100A is dynamic data recording software that, by controlling KYOWA's dynamic measuring instrument, is designed to record data as well as reproduce data.

This Instruction Manual describes specifications and operating method of the DCS-100A optional function. The optional moving image function described in this Instruction Manual is shown below.

Recording Moving Image Function

Capable of monitoring and recording moving image data (maximum resolution: 640×480 , maximum frame rate: 30 fps) from a webcam and measured data at the same time.

Capable of reproducing the recorded moving image data synchronized with the graph waveform of the measured data.

1-1 TARGET MEASURING INSTRUMENT

The DCS-100A optional function can only be used when controlling the following measuring instruments. For details of measuring instruments, see "DCS-100A Dynamic Data Recording Software Instruction Manual (For EDS-400A operation), (For EDX-100A operation), or (For PCD-300 Series operation)."

(Suppose the EDX-100A as the control target measuring instrument, this Instruction Manual describes operations of the DCS-100A optional function.)

Measuring Instrument	Instruction Manual
EDX-10A	For EDX-10A operation
EDX-100A	For EDX-100A operation
EDX-200A	For EDX-200A operation
EDX-3000A/B	For EDX-3000A/B operation
EDX-5000A	For EDX-5000A operation
EDS-400A	For EDS-400A operation
UCAM-550A	For UCAM-550A operation
NTB-500A	For NTB-500A operation
PCD-300 Series	For PCD-300 Series operation
PCD-400A Series	For PCD-400A Series operation
CTRS-100A	For CTRS-100A Series operation

1-2 OPERATING ENVIRONMENT

Operating environment of the DCS-100A optional function is described in the following.

CPU	Core i5 2 GHz or more
OS	Windows 8.1, Windows 10, Windows 11 32/64bits (Windows11 is 64bits Only)
Memory	For 32bits OS, 2 GByte or more. For 64bits OS, 4 GByte or more.
Hard Disk	Residual capacity: 10 MByte or more (Recording data file and recording moving image file sizes are not included.)
Display	Resolution: 1024 × 768 dots or more Color: Full color or more
Disk unit	CD-ROM drive

*For the 64-bit OS, use the WOW64 system.

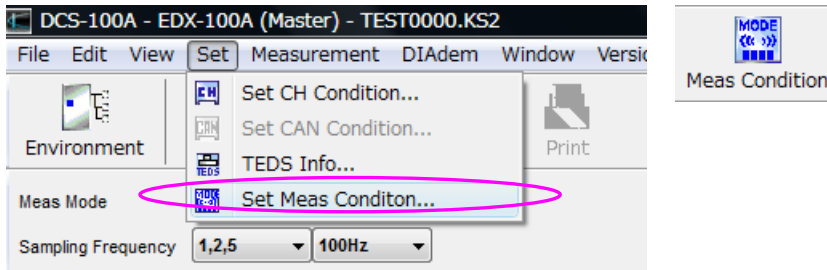
*For recording moving images and conducting arithmetic operations simultaneously, you need Core i5 3GHz or higher CPU.

NOTE

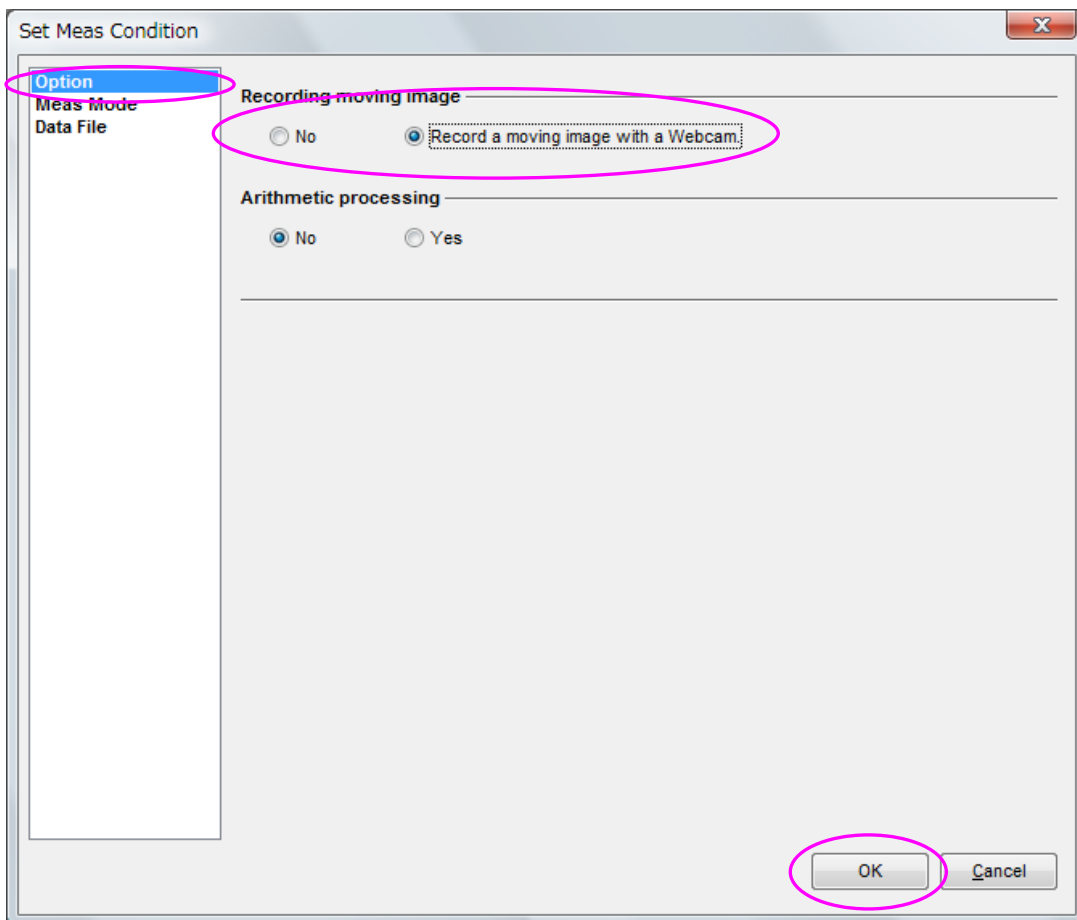
PC satisfying the above conditions may not guarantee operations of all the instrument models.
In addition, due to PC's performance, error may occur as to display more windows than required.

2. OPERATIONS FOR ADDING OPTIONAL FUNCTION

- (1) Point to **Set** on the menu bar and select **Set Meas Condition...** or select the **Meas Condition** icon from the toolbar to open the **Meas Condition** window.



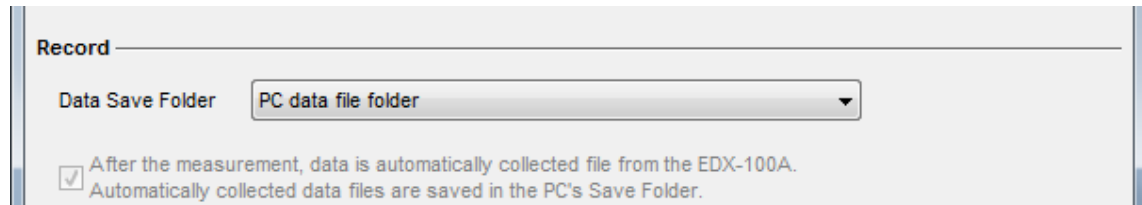
- (2) Check the target optional function in the **Option** item on the **Meas Condition** window, click the **OK** button and close the window.



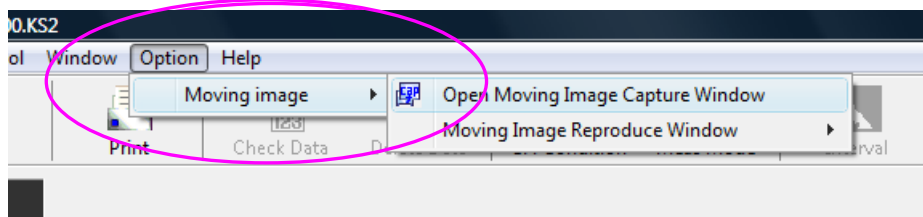
NOTE

For the EDX-100A, EDS-400A, and PCD-300 series, note the following restrictions.

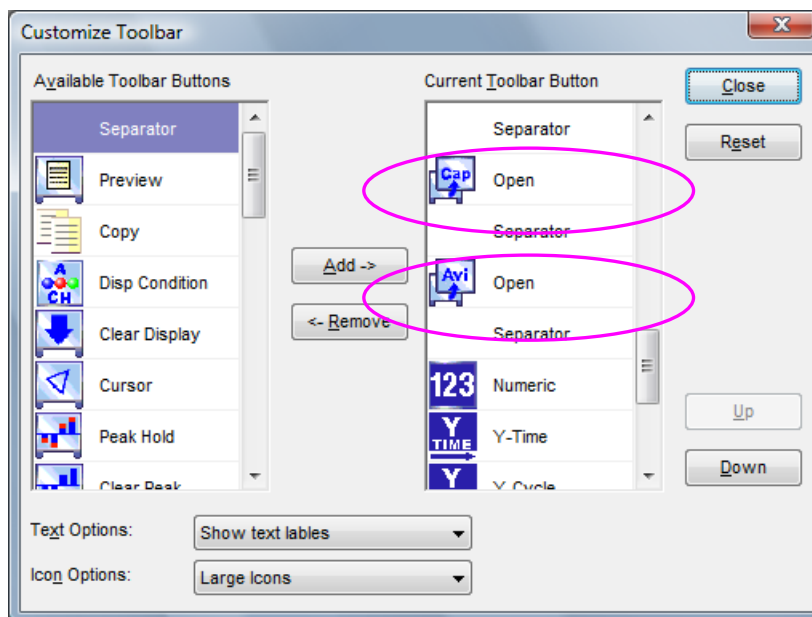
- Do not use more than one optional function at the same time.
- The DCS-100A optional functions can be used only when the **Data Save Folder** in the **Record** item on the **Environment** window is set to **PC data file folder**.



- 3) An optional function menu checked on the **Meas Condition** window is added to the main menu.



Toolbar buttons of the checked optional function are added to the toolbar also.



3. RECORPING MOVING IMAGE

Capable of monitoring and recording moving image data (maximum resolution: 640×480 , maximum frame rate: 30 fps) from the webcam and measured data at the same time.

The recorded moving image data is saved in the different file (Extension: AVI) from the measured data. After the measurement is finished, it is capable of reproducing the moving image data synchronized with graph waveform.

By using the DCS-100A optional function recording moving image, it is capable of saving the testing scene as a memo to the moving image data.

3-1 PREPARATION

3-1-1 Preparation for PC

- When operating the webcam through the PC, DirectX RunTime ver. 9.0c or higher is needed to be installed to the PC.
(You can download the Direct X RunTime from the Microsoft web site free of charge.)

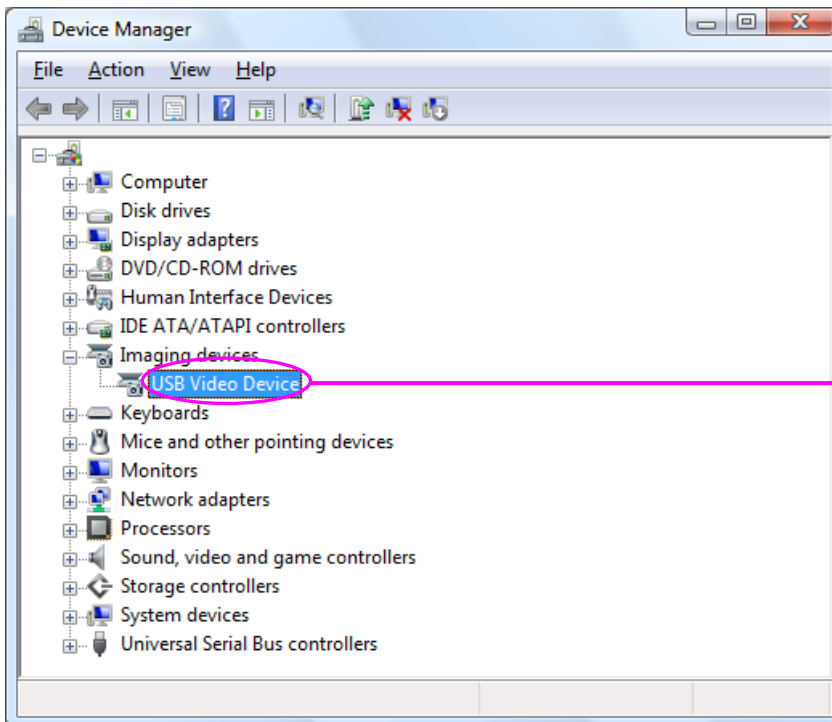
3-1-2 Preparation for Webcam

- When recording moving image of the DCS-100A optional function, use the webcam that the OS recognizes it as an imaging device.

Capable of checking whether the connected webcam to the PC is recognized as the imaging device by checking the **Imaging devices** item in the **Device Manager** window.

(Display of the webcam in the **Imaging devices** item varies with every webcam.)

For Windows Vista, click the **Start** button, **Control Panel**, **System**, and **Device Manager** and check the inside of the **Imaging devices** item on the **Device Manager** window. (See the following figure.)



Recognized webcam as an imaging device

- For Windows XP, click the **Start** button, **Control Panel**, **System**, **Hardware**, and **Device Manager** and check the inside of the **Imaging devices** item on the **Device Manager** window.

- When selecting the webcam for recording moving image, for USB interface, select the USB video class (UVC) compatible webcam or DirectX compatible webcam.
For IEEE1394 interface, select the DirectX compatible webcam.

MEMO

The USB video class (UVC) compatible webcam uses a standard driver provided from the Windows.

Therefore, no webcam driver installation is necessary.

Only by inserting the webcam to the USB connector of the PC, the OS standard driver is automatically installed and the webcam can be used.

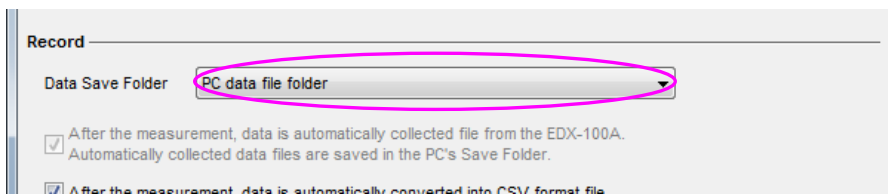
However, for the USB video class (UVC) compatible webcam with dedicated driver, it is recommended to install the driver.

3-1-3 Restrictions for Recording Moving Image

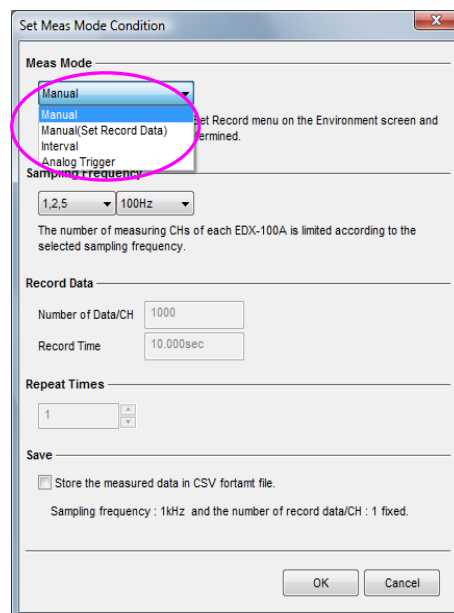
- For the DCS-100A optional function recording moving image, it is capable of monitoring and recording the moving image data of the following specifications.

Resolution:	Maximum 640 × 480
Frame rate:	Maximum 30 fps

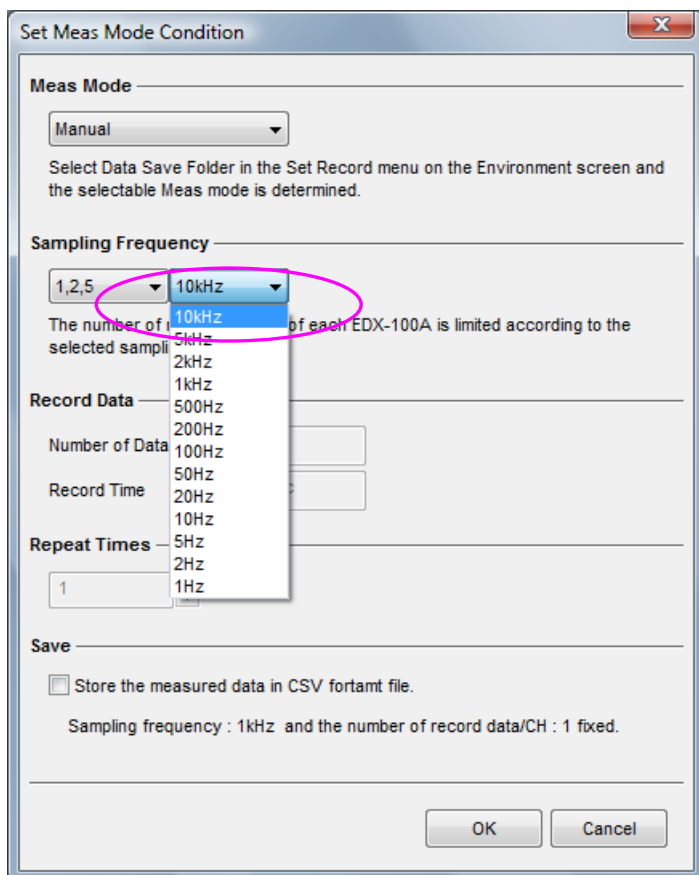
- When recording moving image, the measured data and moving image data recording cannot be started at the same time.
Time lag between the recording start time of the measured data and moving image data is maximum 1 second.
- When recording moving image, only moving image data is recorded in the AVI file and no voice data and still image data is saved.
- The DCS-100A optional functions can be used only when the **Data Save Folder** in the **Record** item on the **Environment** window is set to **PC data file folder**.



- Selectable **Meas Mode** when using the recording moving image function are **Manual** and **Manual (Set Record Data)**. The moving image cannot be recorded other than the Manual meas mode.
Even when the **Meas Mode** is **Manual** or **Manual (Set Record Data)**, recording cannot be paused by pressing a **REC/PAUSE** button on the Meas Operation Panel during recording.



- Selectable **Sampling Frequency** when recording moving image is up to 10 kHz.



NOTE

According to the control target measuring instruments, the actual selectable sampling frequency may be less than 10 kHz.

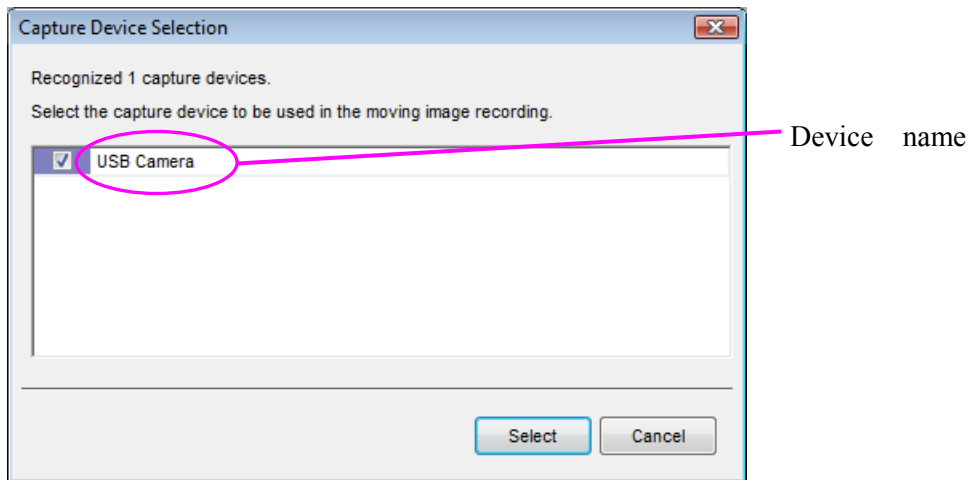
- When conducting measurement with CAN by controlling the EDX-100A, the DCS-100A optional functions can not be used.

3-2 OPERATING METHOD FOR RECORDING MOVING IMAGE

- 1) Connect the webcam to the PC.

After the webcam is recognized by the PC, the following message appears.

The recognized device name appears on the **Capture Device Selection** window.



- 2) Select capture devices to be used on the **Capture Device Selection** window.
You can select up to 1 capture devices.
Put a checkmark in the box next to the target devices and click **Select** button.

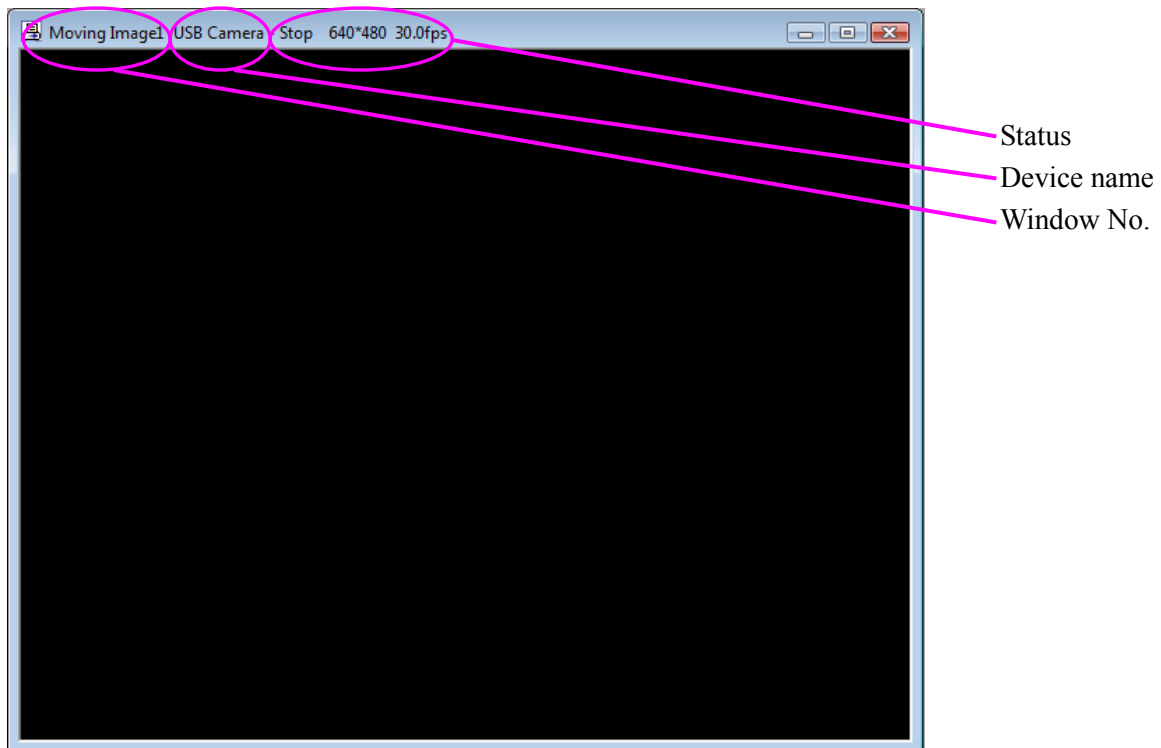
NOTE

Capable of displaying 1 Moving Image Capture window per 1 webcam.

3) The following **Moving Image Capture** window appears.

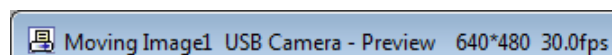
Picture images from the webcam appear on the Moving Image Capture window.

On the title bar of the **Moving Image Capture** window, a status indicating the action state of the recording moving image and setting conditions (resolution and frame rate) is displayed.

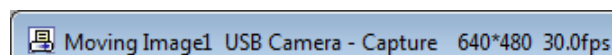


Display of the status varies with the action state of the recording moving image.

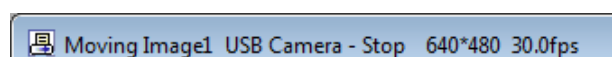
Preview: Monitoring the picture images from the webcam on the **Moving Image Capture** window.



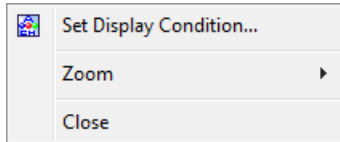
Capture: Monitoring the picture images from the webcam on the **Moving Image Capture** window and saving the picture images from the webcam as the moving image data to a file.



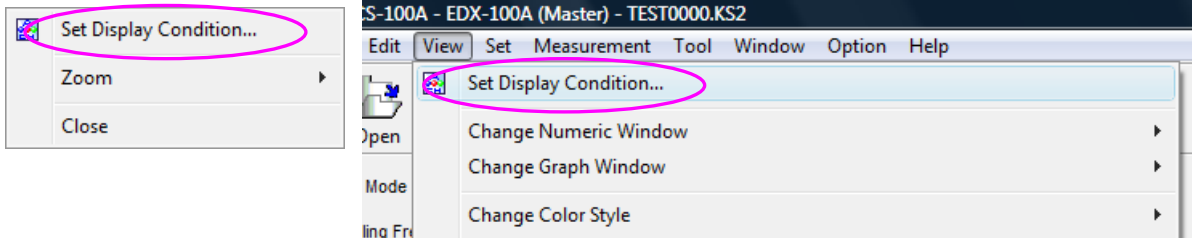
Stop: Stopping the monitoring.



- 4) Right click on the **Moving Image Capture** window and the following pop-up menu appears.

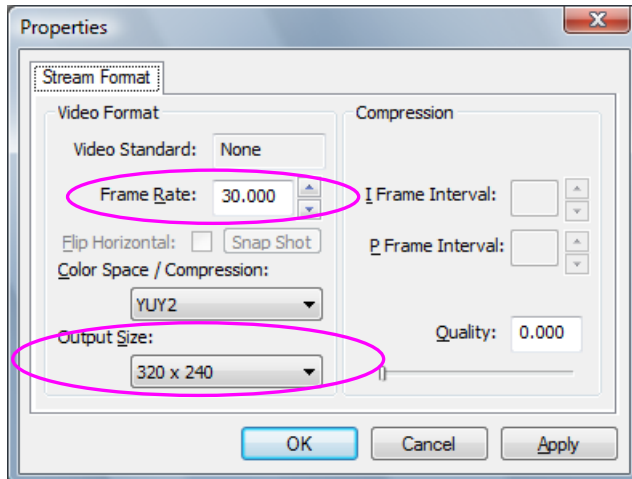


Click the **Set Display Condition...** on the pop-up menu or click the **Moving Image Capture** window, point to the **View** on the toolbar and click the **Set Display Condition....**



The following **Properties** window appears.

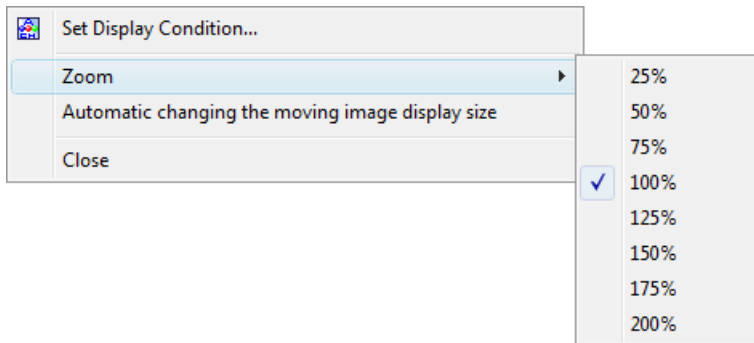
Set resolution (Output Size) and Frame Rate on the **Properties** window.



MEMO

Available resolution (Output Size) and Frame Rate varies with every webcam. Refer to the webcam Instruction Manual and set the properties.

Point to the **Zoom** on the pop-up menu and check the target display size of the moving image as follows.
For changing the display size of the moving image, release a check mark in the box next to **Changes the moving image display size according to the window size**.

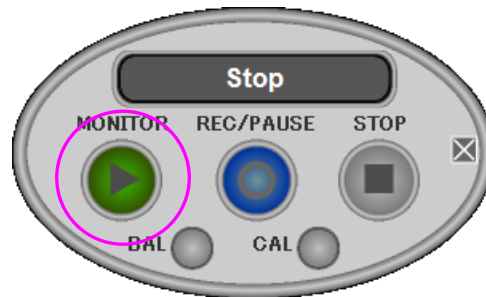
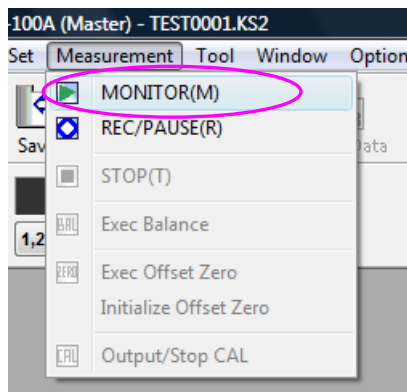


MEMO

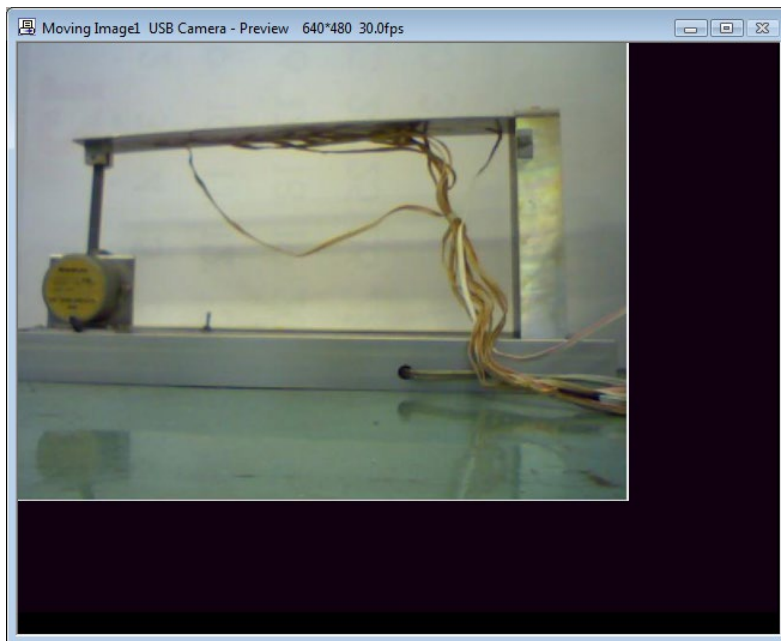
- Capable of changing the display size of the moving image even during preview or capture.
- If the display size of the moving image is changed, the Output Size of the actual recording moving image data is not changed. To set the **Output Size** of the recording moving image data, click the **Set Display Condition...** menu on the pop-up menu to display the **Properties** window.

If you accidentally close the **Moving Image Capture** window by clicking the **Close** on the pop-up menu....
Point to **Option** on the menu bar and select **Moving Image – Open Moving Image Capture Window** or select **Open** icon from the toolbar to open the **Moving Image Capture** window again.

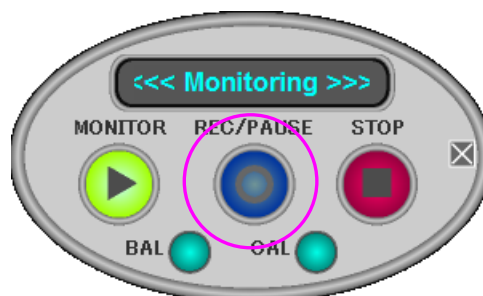
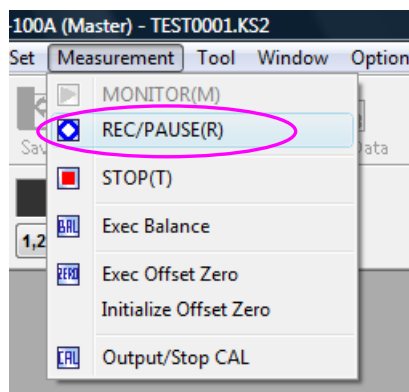
- 5) Point to **Measurement** on the menu bar and select **MONITOR (M)** or click the **MONITOR** button on the **Meas Operation Panel** to start measurement.



- 6) Measurement starts, the measured data is monitored on the numerical window or graph window and the movie from the webcam is monitored on the Moving Image Capture window synchronized with the measuring action.



- 7) Point to **Measurement** on the menu bar and select **REC/PAUSE (R)** or click the **REC/PAUSE** button on the **Meas Operation Panel** to start measurement.



- 8) Recording starts, the measured data is saved in the data file (Extension: KS2) and the movie from the webcam is saved in the following moving image file (Extension: AVI) as the moving image data synchronized with the measuring action.

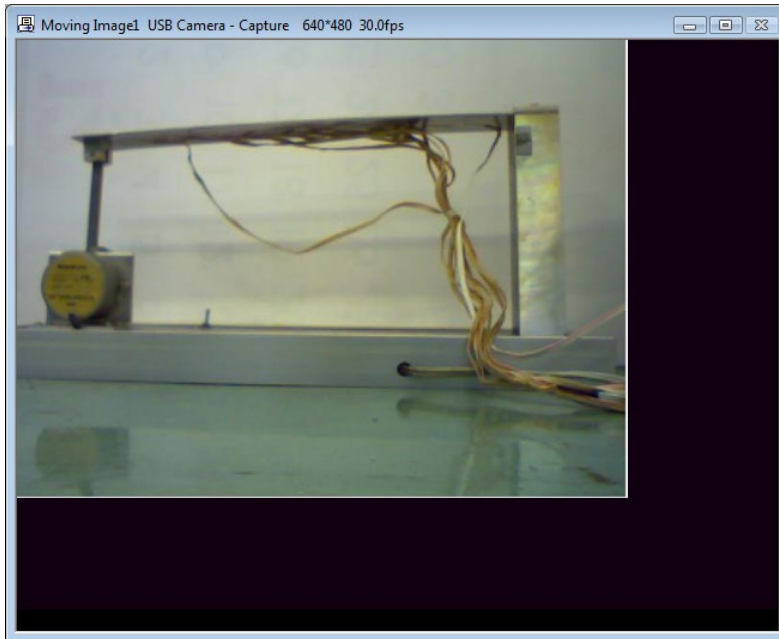
Moving image file name: Data file name + “_” + “001”. AVI

(Example)

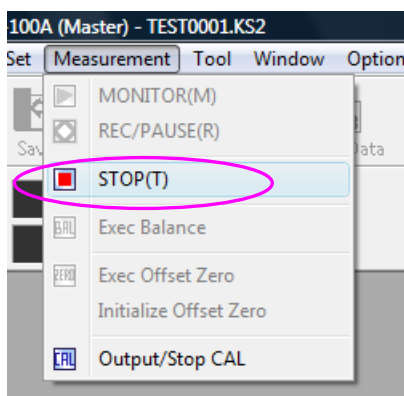
Suppose the measured data to be saved is TEST0000.KS2...

Moving images of the webcam to be monitored on the **Moving Image Capture** window are saved in the TEST0000_001. AVI.

Moving image save folder: Same folder as the data file of the measured data



- 9) To end recording, point to **Measurement** on the menu bar and select **STOP (T)** or click the **STOP** button on the **Meas Operation Panel**. (Automatically ends when the number of recording data/CHs is satisfied.)

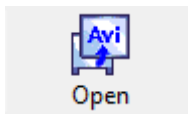
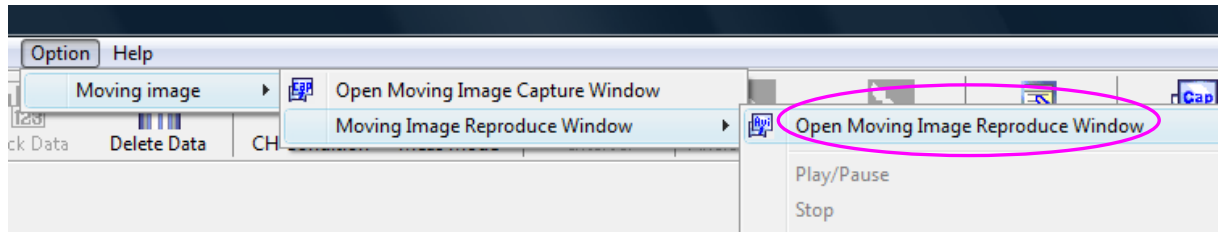


- 10) Saving the moving image data also ends when the recording ends.

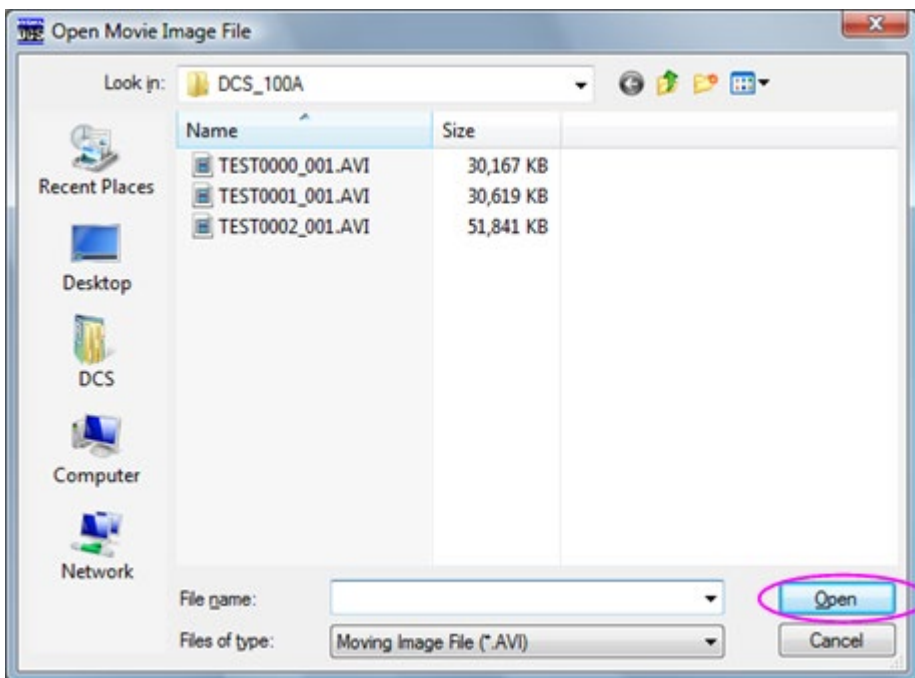
3-3 OPERATING METHOD OF MOVING IMAGE

3-3-1 Moving Image Reproduce Window

- 1) Point to **Option** on the menu bar, **Moving image**, **Moving Image Reproduce Window**, and click **Open Moving Image Reproduce Window** or click the **Open** icon from the toolbar.



- 2) **Open Movie Image File** window appears. Then select the target moving image file and click the **Open** button.

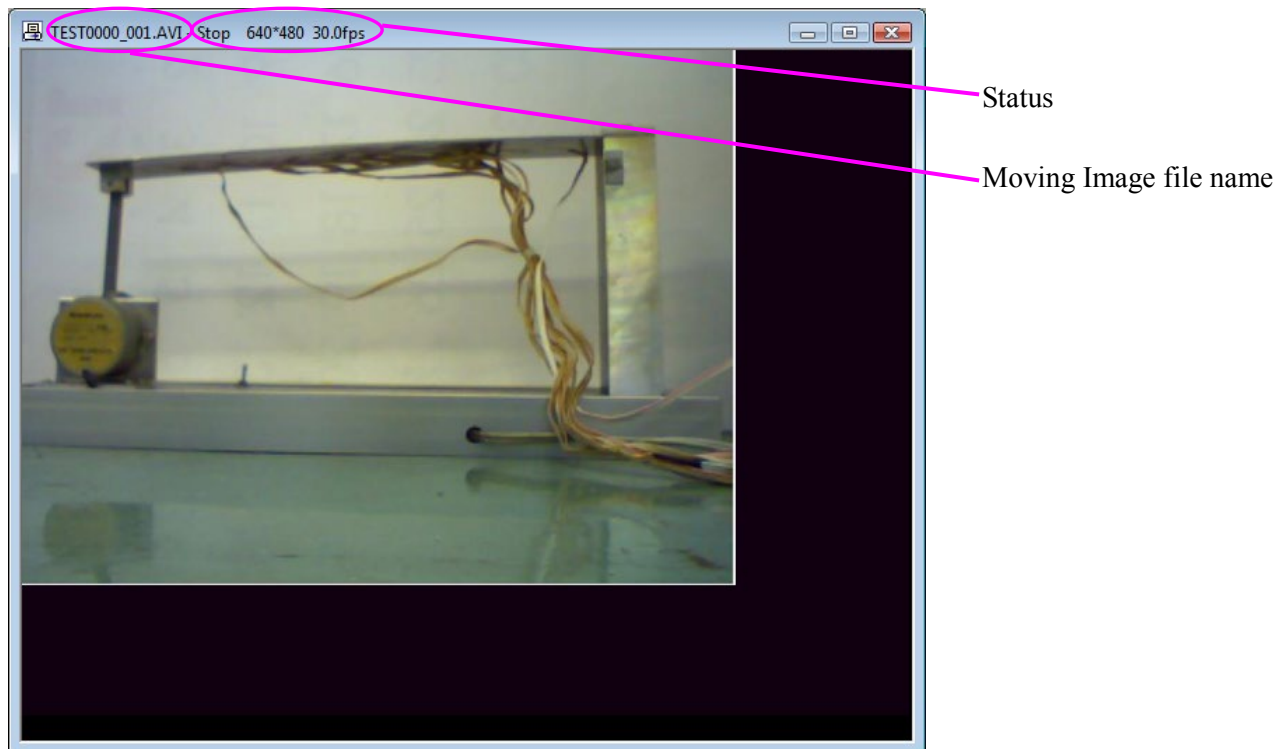


NOTE

Capable of displaying 1 **Moving Image Reproduce** window per 1 moving image file.
In addition, only 1 moving image file can be opened at one time.

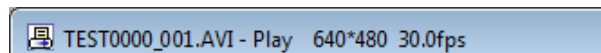
3) The following **Moving Image Reproduce** window appears.

On the title bar of the **Moving Image Reproduce** window, the status indicating a moving image file name, action state of the reproducing moving image and conditions (resolution and frame rate) is displayed

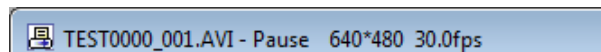


The display of the status varies with the action state of the reproducing moving image as follows.

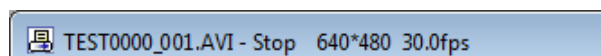
Play: Playing the selected moving image file on the **Moving Image Reproduce** window.



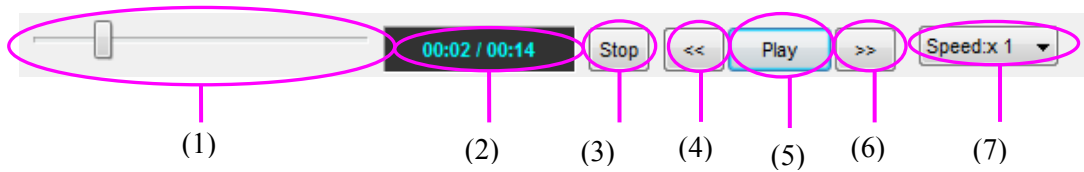
Pause: Pausing during reproducing the moving image file.



Stop: Stopping the reproducing.

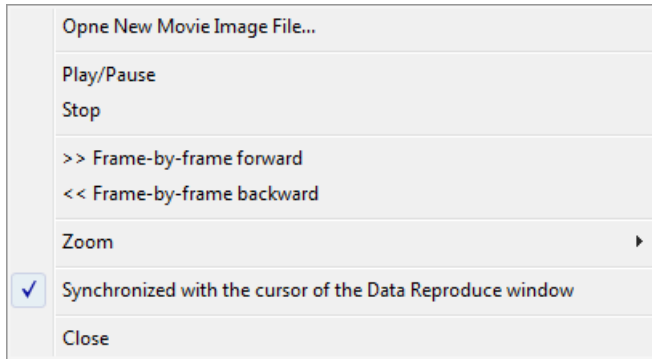


- 4) At the same time when the **Moving Image Reproduce** window appears, the following Moving Image Reproduce Operation bar appears at the bottom of the main window.



- | | |
|---|--|
| <p>(1) Slider</p> <p>(2) Current display position</p> | <p>Displays the current display position. By dragging the knob of the slider with a mouse, the display frame can be changed.</p> <p>Displays the current display frame time and total time of the moving image file.</p> <p>By double clicking the (2), the display can be changed from the current display position to current display frame No. and the total number of frames of the moving image file.</p> |
| | <p>The diagram shows two dark rectangular boxes. The left box contains the text '00:02 / 00:14' in green. The right box contains the text '41 / 210 Frame' in green. A pink double-headed arrow points from the left box to the right box, indicating a toggle or transition between the two display modes.</p> |
| <p>(3) Stop button</p> <p>(4) << button</p> <p>(5) Play button</p> <p>(6) >> button</p> <p>(7) Reproduce speed changing control</p> | <p>Stop the Moving Image Reproduce window.</p> <p>Move backward the current display frame for 1 frame.</p> <p>Play or pause the moving Image Reproduce window.</p> <p>Move forward the current display frame for 1 frame.</p> <p>Changes the moving image reproduce speed.</p> <p>($\times 1/20$, $\times 1/10$, $\times 1/5$, $\times 1/2$, $\times 1$, $\times 2$, $\times 5$, $\times 10$, and $\times 20$)</p> |

Right click on the **Moving Image Reproduce** window and the following pop-up menu appears.

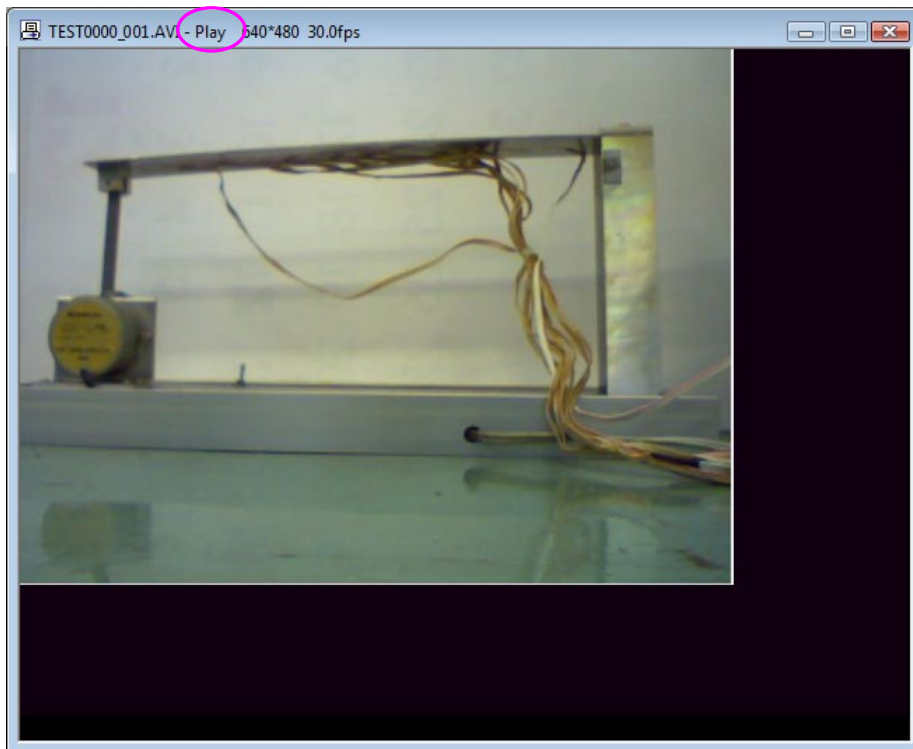
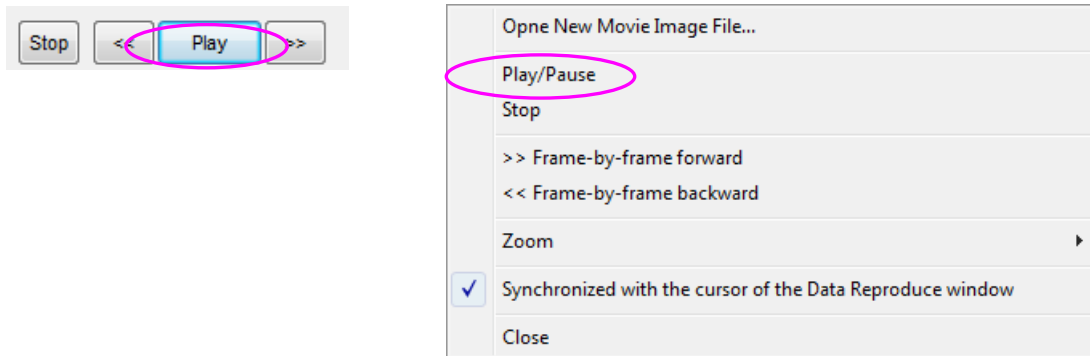


- (1) Open New Movie Image File...
Used for changing the target moving image file on the **Moving Image Reproduce** window.
Select the **Open New Movie Image File...**, the **Open Movie Image File** window appears again. Select the target moving image file.
- (2) Play/Pause
Play or pause the **Moving Image Reproduce** window.
- (3) Stop
Stop the **Moving Image Reproduce** window.
- (4) >>Frame-by-frame forward
Move forward the current display frame for 1 frame.
- (5) <<Frame-by-frame backward
Move backward the current display frame for 1 frame.
- (6) Zoom
Select the moving image display size of the **Moving Image Reproduce** window.
(25%, 50%, 75%, 100%, 125%, 150%, 175%, and 200%)
- (7) Synchronized with the cursor of the Data Reproduce window
Put a check mark when displaying the display frame of the **Moving Image Reproduce** window synchronized with the cursor of the **Data Reproduce** window.

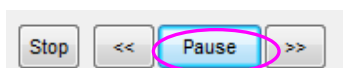
MEMO

By selecting the above menu on the pop-up menu, the same operation can be conducted as the Moving Image Reproduce Operation bar.

- 5) Click the **Play** button on the Moving Image Reproduce Operation bar or click the **Play/Pause** menu on the pop-up menu. The moving image is reproduced on the **Moving Image Reproduce** window.



- 6) During reproducing the moving image, the **Play** button on the Moving Image Reproduce Operation bar changes to the **Pause** button.

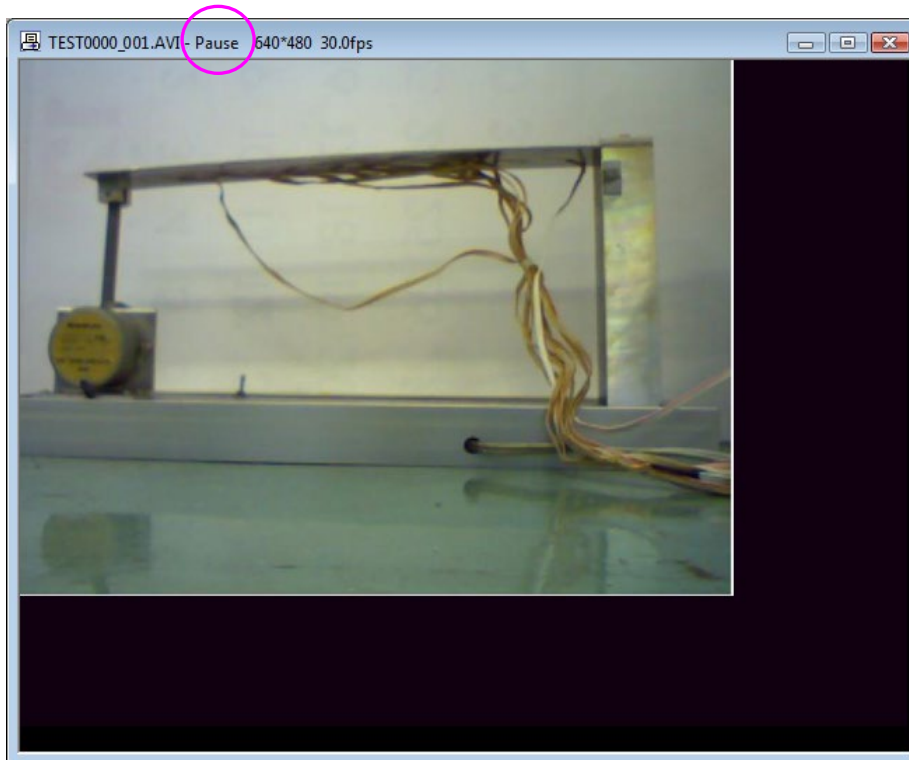


The knob of the slider moves with the display frame and the current display frame time is displayed on the Moving Image Reproduce Operation bar.

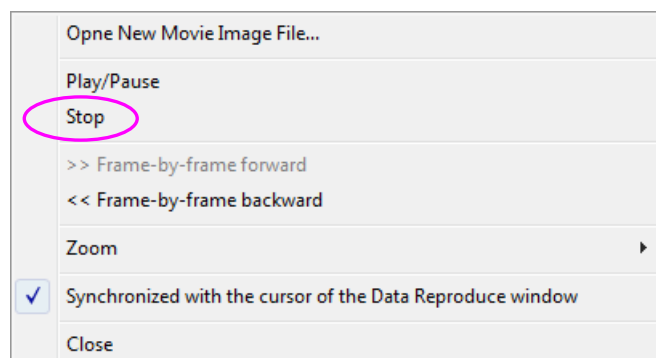
In the following figure, the knob of the slider is at the 2 seconds position.



- 7) When reproducing the moving image on the **Moving Image Reproducing** window is finished, the status becomes **Pause** as follows.

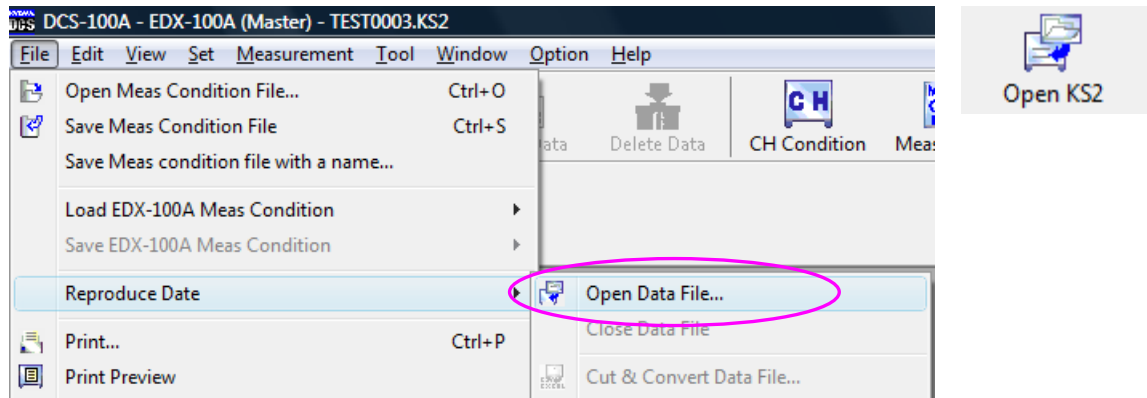


- 8) For reproducing the moving image again, click the **Stop** button on the Moving Image Reproduce Operation bar or click the **Stop** menu on the pop-up menu and change the status display to **Stop** as item 3).

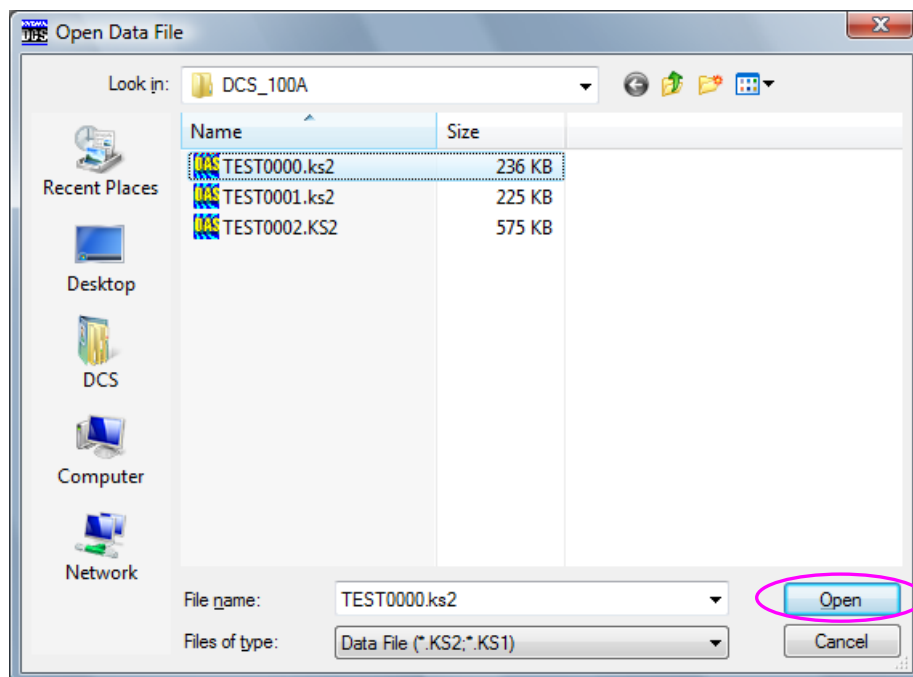


3-3-2 Synchronizing Data Reproduce window and Moving Image Reproduce window

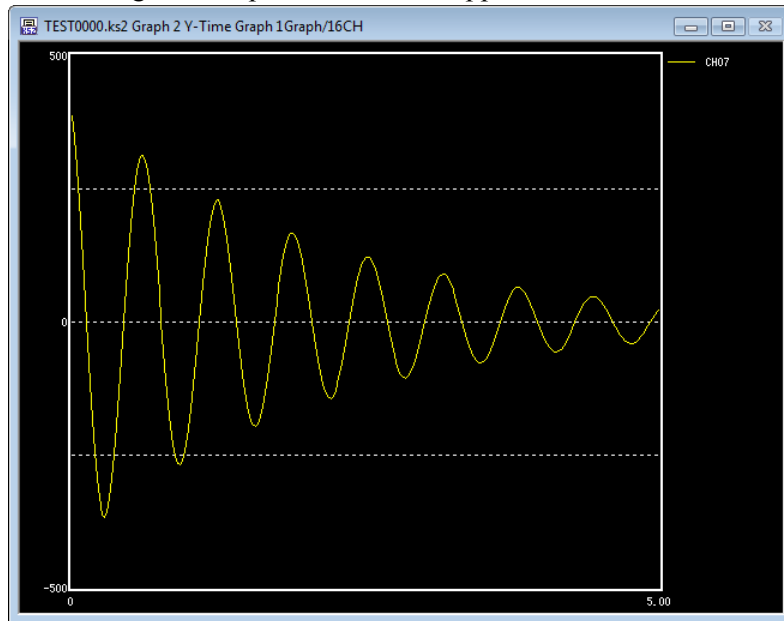
- 1) Point to **File** on the menu bar, **Reproduce Data** and click **Open Data File...** or click the **Open KS2** icon from the toolbar.



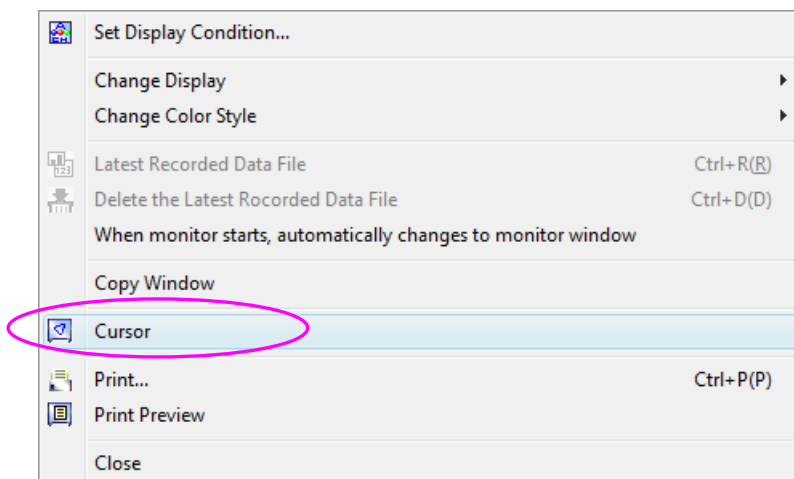
- 2) The following **Open Data File** window appears. Select the target data file and click the **Open** button.



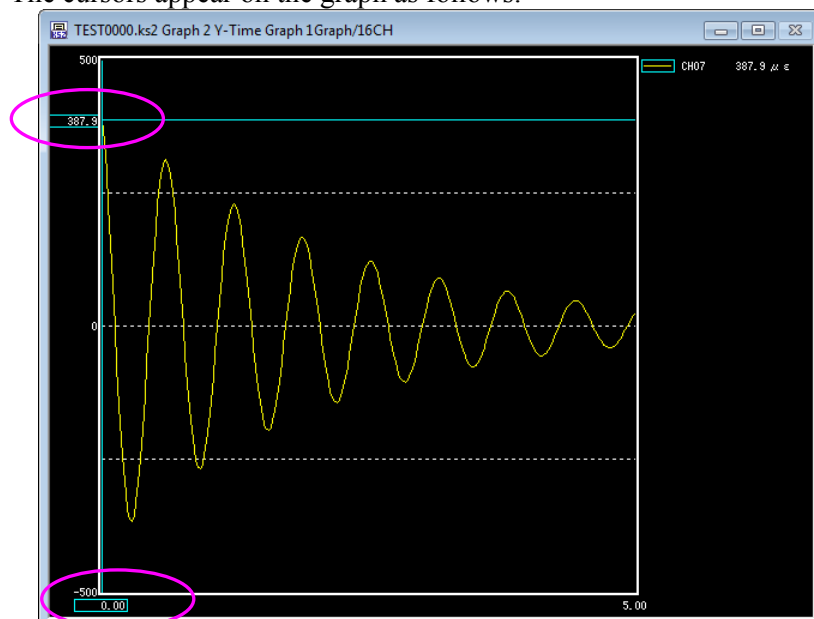
3) The following Data Reproduce window appears.



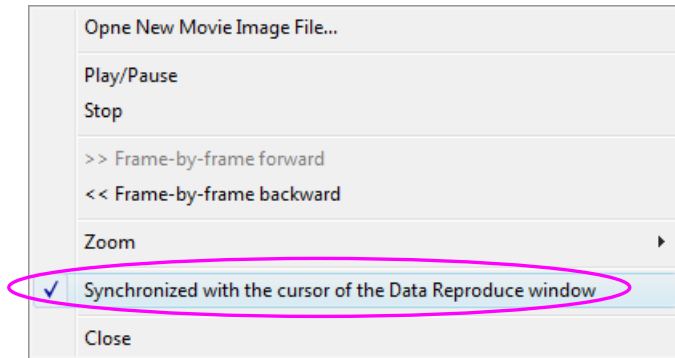
4) Right click on the Data Reproduce window and the following pop-up menu appears. Click the **Cursor** menu to be the cursor indicated state.



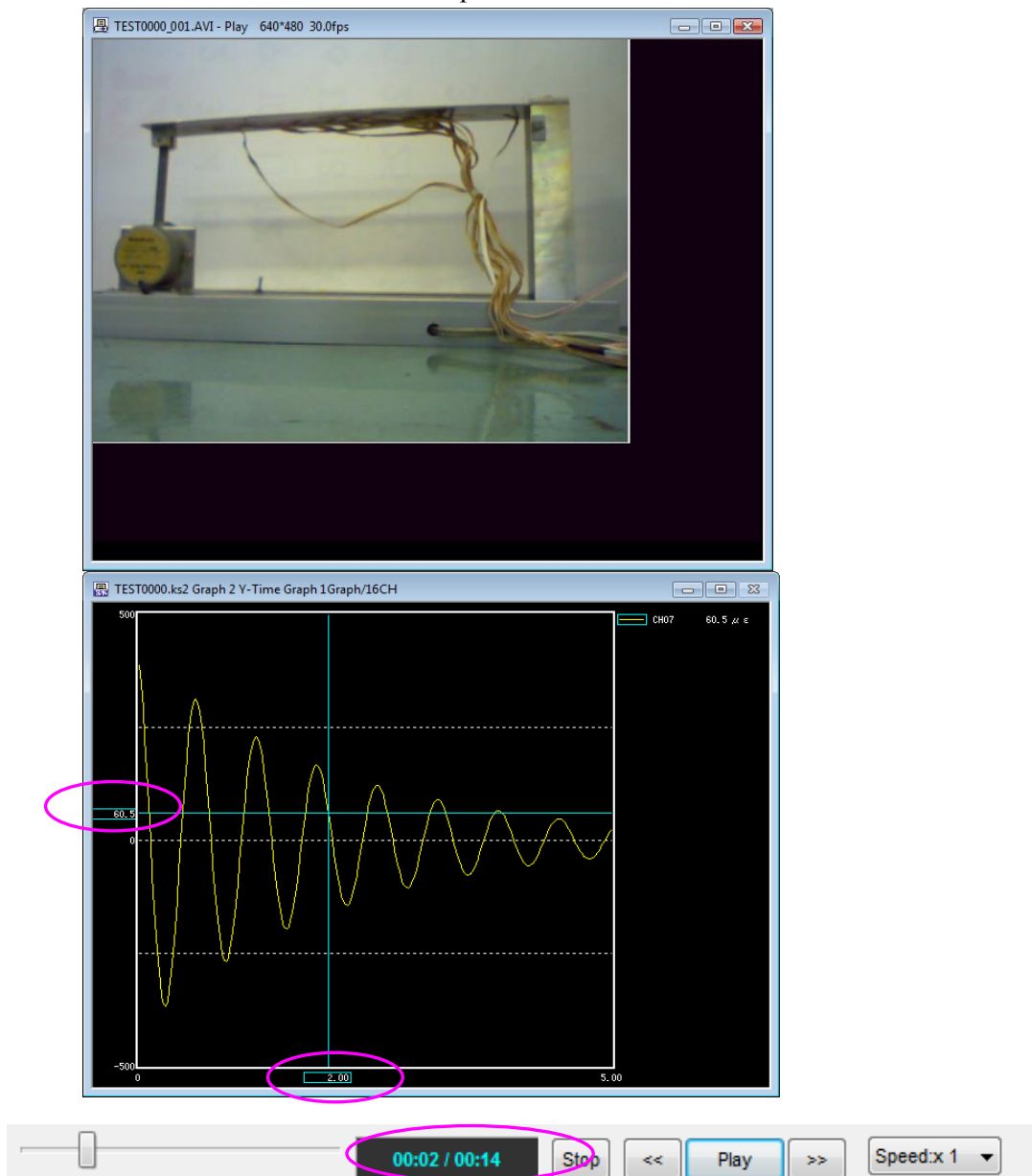
The cursors appear on the graph as follows.



- 5) Right click on the **Data Reproduce** window and the following pop-up menu appears. Click the **Synchronized with the cursor of the Data Reproduce window** menu to be the synchronized state with the cursors.



- 6) Click the **Play** button on the Moving Image Reproduce Operation bar or click the **Play/Pause** menu on the pop-up menu. The moving image is reproduced on the **Moving Image Reproduce** window and synchronized with it, the cursor on the **Data Reproduce** window moves. In the following figure, the knob of the slider is at the 2 seconds position.



4. SPECIFICATIONS

4-1 RECORDING MOVING IMAGE

Using camera	DirectX compatible webcam (Webcam that the OS recognizes it as the imaging device.)
The number of using cameras	1
Resolution	Maximum 640 × 480
Frame rate	Maximum 30 fps
Save file format	AVI file
The number of moving image capture windows available on a single screen	1 window
Action	Capable of monitoring and recording the moving image data synchronized with the measuring operation.
Operation	Zoom
The resolution and frame rate are determined according to the using webcam.	

4-2 MEASURING CONDITIONS WHEN RECORDING MOVING IMAGE

Target measuring instruments	EDX-10A, EDX-100A, EDX-200A, EDX-3000A/B, EDX-5000A, EDS-400A, UCAM-550A, NTB-500A, PCD-300 Series, PCD-400A Series, CTRS-100A
Data save folder	PC data file folder
MEAS mode	Manual, Manual (Set Record Data)

4-3 REPRODUCING MOVING IMAGE

Reproducible file format	AVI file
The number of simultaneously displayed files	1
The number of moving image reproduce windows available on a single screen	1
Operation	Play, Stop, Pause, Frame-by-frame forward, Frame-by-frame backward, Zoom, Changing reproduction speed
Cursor synchronized display	Capable of reproducing the moving image data synchronized with the cursor of the graph waveform.