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**SAMSUNG TECHWIN**

# **DIGITAL PRESENTER**

User Manual

SDP-960

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**SAMSUNG**



# Digital Presenter


## User Manual

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### Warranty

If the product does not operate properly in normal conditions, please let us know. Samsung Techwin will resolve the problem for free of charge. The warranty period is 2 years. However, the followings are excluded:

- Malfunction due to user's negligence
- Dismantling or replacement by the user
- Product has been connected to power source that differs from that specified.
- Malfunction due to natural disasters (fire, flood, tsunami, etc.)
- To replace expendable components.

❖ **Design and specifications are subject to change without prior notice.**

## IMPORTANT SAFETY INSTRUCTIONS

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1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



# overview

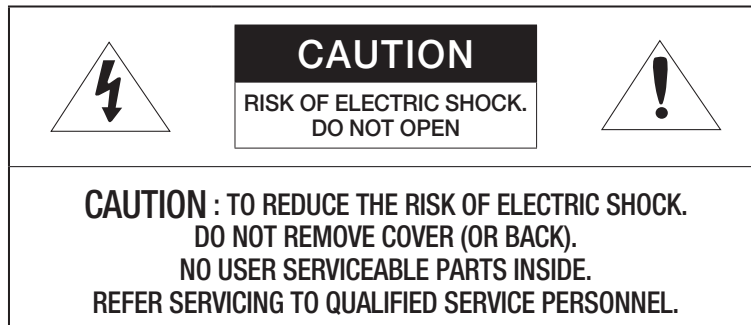
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## WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

## CAUTION



## EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

## CAUTION

These servicing instructions are for use by qualified service personnel only.

To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# overview

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## CONTENTS

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<b>OVERVIEW</b>	<b>3</b>	Important Safety Instructions
	7	Product Features
	8	What's Included
	9	Product at a Glance
	9	Front View
	10	Rear View
	11	Side View
	12	Control Panel
	14	Remote Control
<b>INSTALLATION &amp; CONNECTION</b>	<b>15</b>	Preparations
	16	Getting Started
	16	Start Screen
	17	Connecting the I/O device
	17	Connecting the output device
	19	Connecting the additional device
	22	To connect to a PC that will be used as external input device
	23	To play the video from an external device
<b>SETUP &amp; APPLICATION</b>	<b>24</b>	Setup
	24	Output Resolution
	25	Image Adjustment
	28	Zoom In/Out
	31	To adjust the focus
	32	To adjust the brightness
	32	To capture the image/video
	38	Preset
	39	Miscellaneous Setting
	43	SYSTEM INFO. Setting
	46	Various Screen Settings
<b>APPENDIX</b>	<b>48</b>	Troubleshooting
	49	Menu Settings & Default
	51	Specifications

## PRODUCT FEATURES

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- **1,300k-pixel High-Resolution & High-Definition Image**

Generates real-time video images at 30 frames per second and at 1,300k pixels high-resolution for live presentations.

- **2D/3D Dual Noise Reduction Technology**

Equipped with our proprietary ISP chipset and 2D/3D dual noise reduction technology, this presentation system depicts vivid colors even in low light environments.

- **Super-Macro Capacity**

With 6x optical and 8x digital zooms, this system achieves a maximum of a 48x combined zoom for an excellent magnification power equal to a microscope. When equipped with an adapter lens, it also delivers super-close-up images.

- **Convenient Multimedia Options**

The product only saves and plays still images and videos (VGA/30 fps) but also supports audio mixing for more versatile multimedia capabilities.


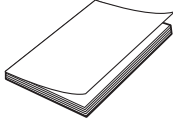


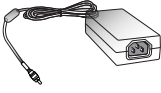
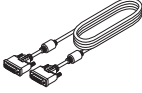
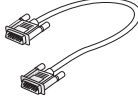

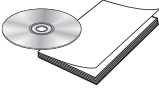
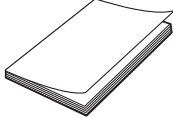
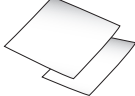

- **Page Detection & Auto Save**

The product not only detects motion of document but also saves still image for use of various application.

# overview

## WHAT'S INCLUDED

Check if the main unit and all the following accessories are included in the product package.

			
SDP-960	User Manual	Remote Controller	Power Cable
			
Power Adapter	DVI Cable	VGA Cable	USB Cable
			
USB Program CD & Manual	RS-232C User Manual	Diffuser Sheet (220x190, 220x307)	Remote Control Battery (AAA)

### Accessories

	
RS-232C Cable	Adapter Lens



- RS-232C cables and adapter lenses from other brands may not be compatible with this product.

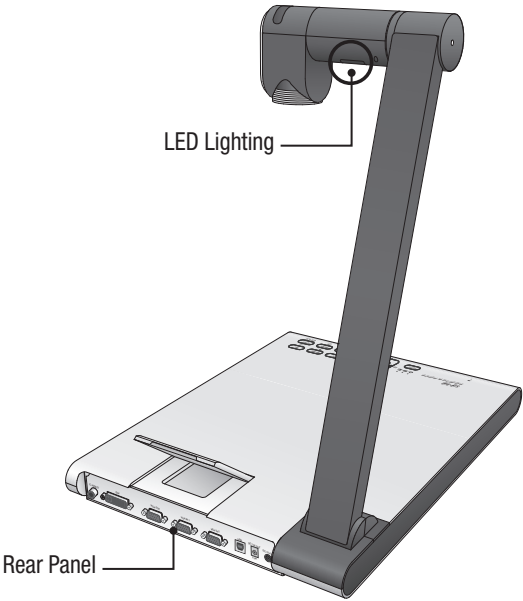
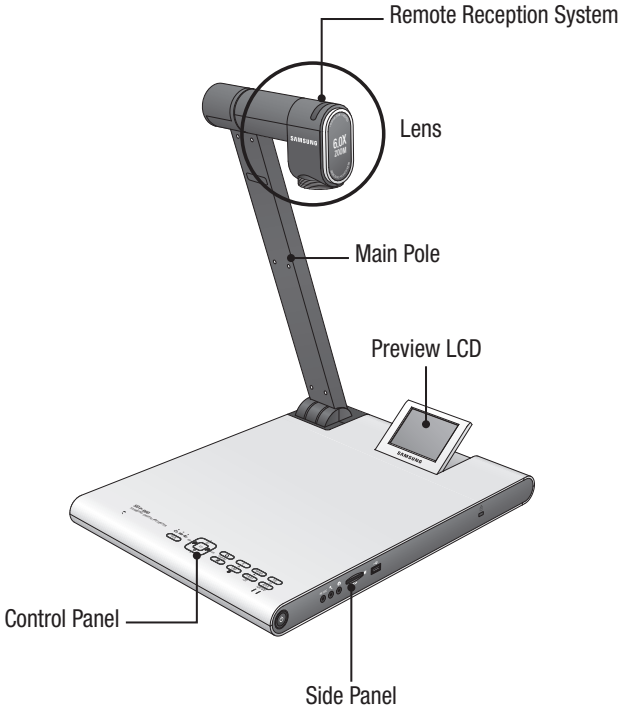


Samsung Techwin cares for the environment at all product manufacturing stages, and is taking measures to provide customers with more environmentally friendly products. The Eco mark represents Samsung Techwin's devotion to creating environmentally friendly products, and indicates that the product satisfies the EU RoHS Directive.



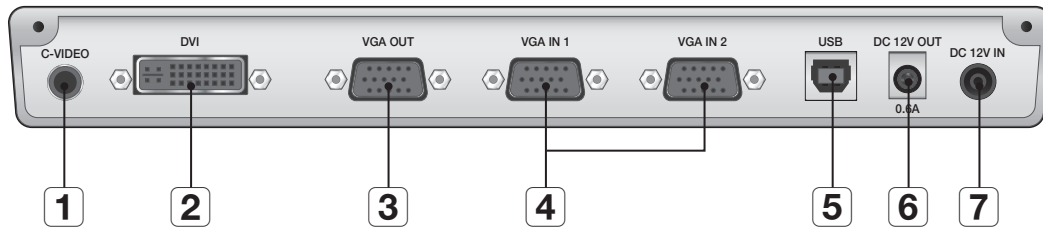
# PRODUCT AT A GLANCE

## Front View



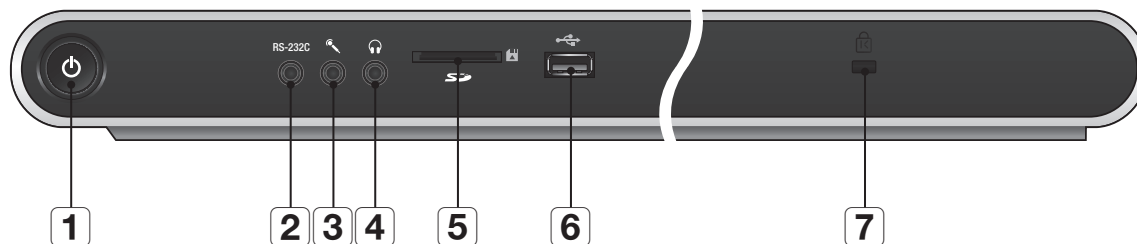
# overview

## Rear View



Item	Description
<b>1</b> C-VIDEO	Connect C-VIDEO to the TV for watching the TV.
<b>2</b> DVI	Connect this port to the LCD monitor or projector that supports DVI connection.
<b>3</b> VGA OUT	Connect this port to a video input device such as PC monitor or projector. Use this port if you want to play the video incoming from the presenter on the monitor or projector.
<b>4</b> VGA IN 1, 2	Connect this port to a video output device such as PC monitor or projector. Use this port if you want to view the video from the presenter and other video source by turns.
<b>5</b> USB	Connect this port to a computer that supports USB communications.
<b>6</b> * DC 12V OUT 0.6A (optional)	You can use this port to supply power to an external device. <ul style="list-style-type: none"><li>▪ The devices offered by Samsung Techwin can only be connected. Otherwise, it may cause a product failure.</li></ul>
<b>7</b> DC 12V IN	Connect the power jack of the DC adapter to this port.

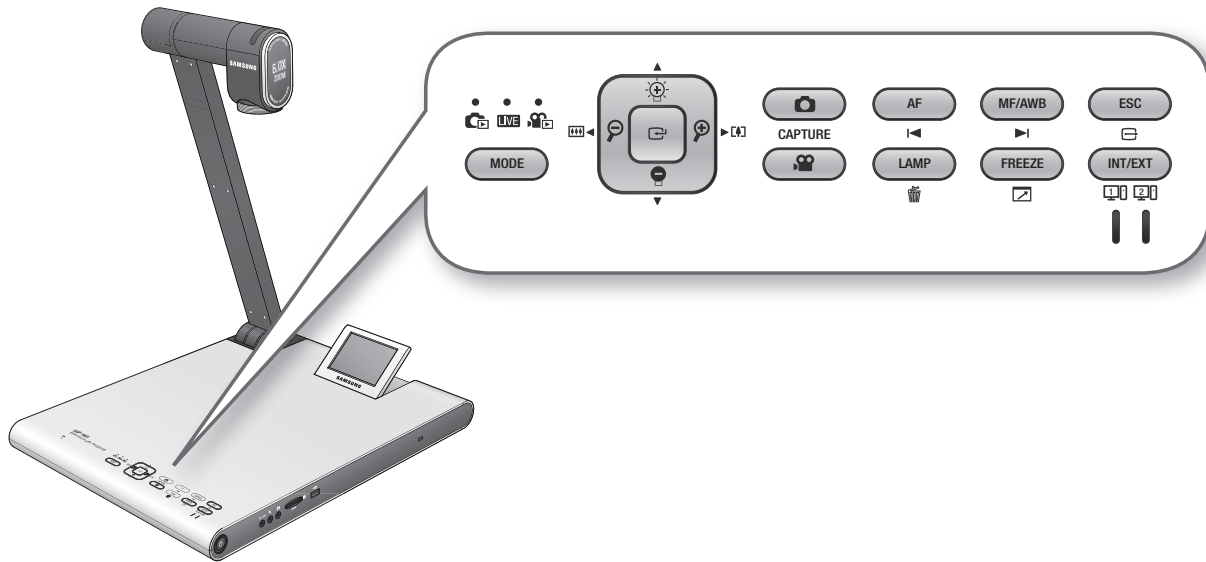
## Side View


























Item	Description
<b>1</b> Power button	Turn on or off the presenter.
<b>2</b> RS-232C	Connect the RS-232C cable to this port.
<b>3</b> External Microphone	Connect an external microphone. However, if you use an external microphone, the internal one will be disabled.
<b>4</b> Earphone	Connect the earphone jack.
<b>5</b> SD(HC) Card Slot	Insert a SD(HC) card for saving a video clip or transferring a photo.
<b>6</b> USB Storage Port	Connect a USB storage device for saving a video clip or transferring a photo.
<b>7</b> Kensington Lock	Insert the Kensington security cable. For preventing a product theft or the security purpose, use the Kensington security cable to tie up this product with a fixed object.


# overview

## Control Panel



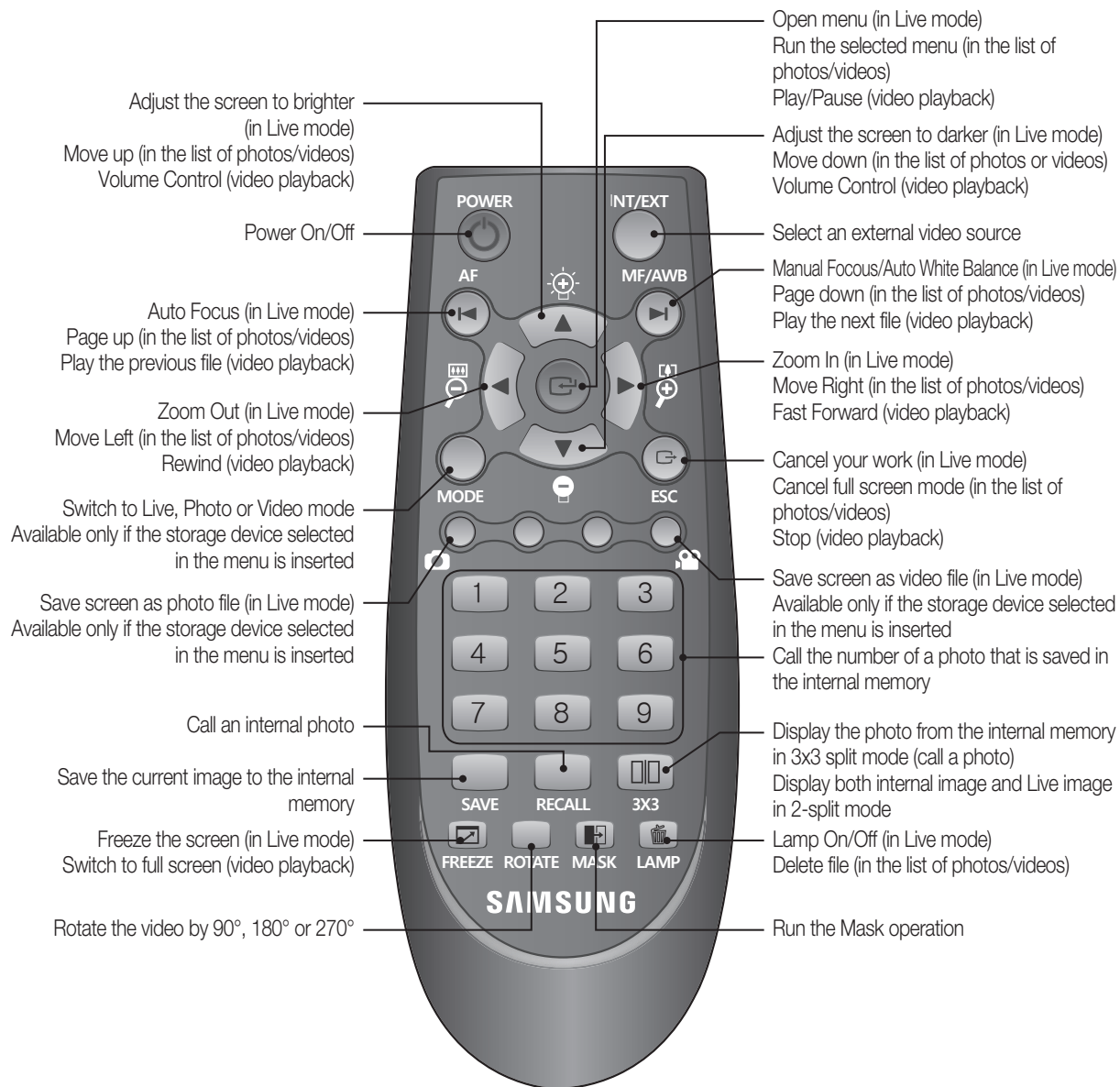
Item	Description		
	LIVE	  LIST	Video
 <b>LIVE</b> 	The indicator for each mode turns on in blue.		
<b>MODE</b>	Switch to a selected mode <ul style="list-style-type: none"> <li>However, you can switch to Photo () or Video () mode only if the storage device that you selected in the menu is inserted in the product.</li> </ul>		
 	Adjust the screen brightness	Move up or down	Volume Control
 	Zoom In/Out	Move left or right	Rewind/Fast Forward
	Open the menu	Run the selected menu	Play/Pause

Item	Description		
	LIVE	 /  LIST	Video
 CAPTURE 	Save the image as a photo (  ) or a video (  ) file <ul style="list-style-type: none"> <li>However, this is available only if the storage device that you selected in the menu is inserted in the product.</li> </ul>	-	-
	Auto Focus	Page Up	Play the previous file
	Manual Focus / Auto White Balance	Page Down	Play the next file
	Cancel your work		
	Lamp On/Off	Delete a photo or video	-
	Freeze	-	Switch to the full screen mode
	Select an internal or external video source. Each time you press this button, the video source will switch in the order of: EXT1 > EXT2 > INT. If you select to display an external source, the applicable indicator will turn on in blue.		


-  The text on the button will be active in Live mode.  
The icon under the button will be active in multimedia mode (video, still image).

# overview

## Remote Control



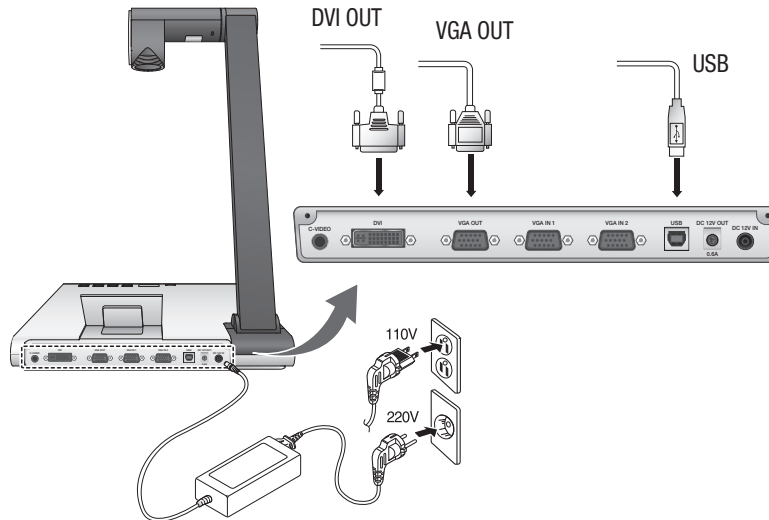
- 
 The buttons of [ **SAVE** ], [ **RECALL** ], [ **ROTATE** ] and [ **3X3** ] are used to save an image to the internal memory or make search, which will be activated only using the remote control.

- 
 To prevent a risk of explosion when replacing the batteries, use only the batteries of the same specification with the default one.  
Separate the waste battery for the disposal purpose. Otherwise, it can be a cause of environment pollution.

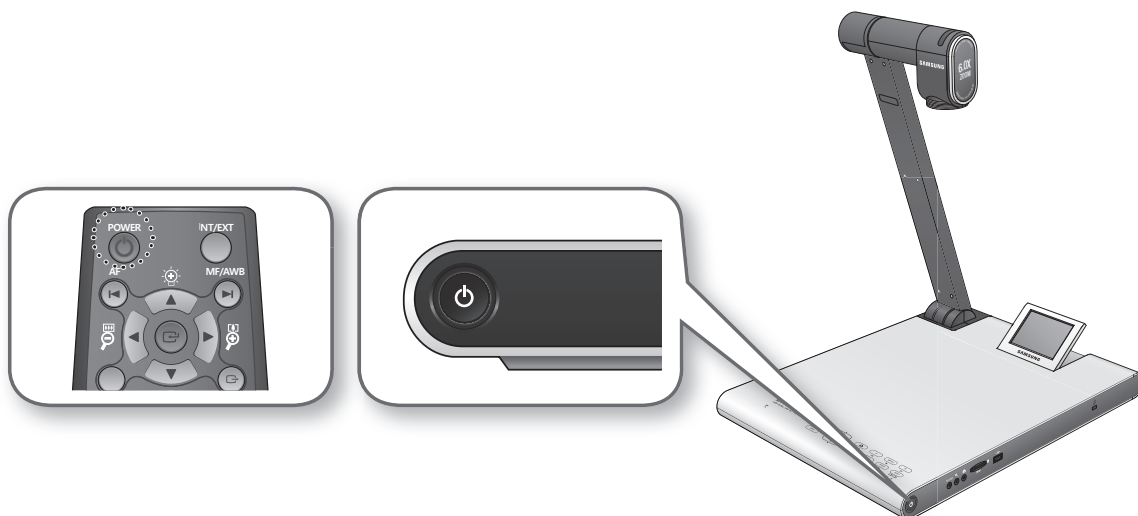
# installation & connection

## PREPARATIONS

1. Connect the necessary cables: VGA OUT, DVI OUT, USB and POWER.



2. Press  on the side panel of the presenter or on the remote control to turn on the digital presenter.



# installation & connection

## GETTING STARTED

If you press **[ON]**, both power indicator and status indicator around the **[ON]** button will turn on in blue.

### Start Screen



**1** Display the current settings of the digital presenter

**2** Display the current settings of capture

Display the status of SD(HC) card and the system operation status

- SD(HC) CARD DETECTED : SD(HC) card is inserted.
- SD(HC) CARD DOES NOT EXIST : SD(HC) card is not inserted.
- 3** - CAMERA SYSTEM INITIALIZING : Initializing the system.
- SYSTEM FIRMWARE FILE EXISTS : The SD(HC) card contains the system update file.
- PLEASE WAIT FOR UPDATE PROCESS : Updating the system firmware.
- UPDATE PROCESS DONE! : System update is completed.

**!** Do not unplug the power cable or remove the SD(HC) card during the update process. Otherwise, it may cause a product failure.

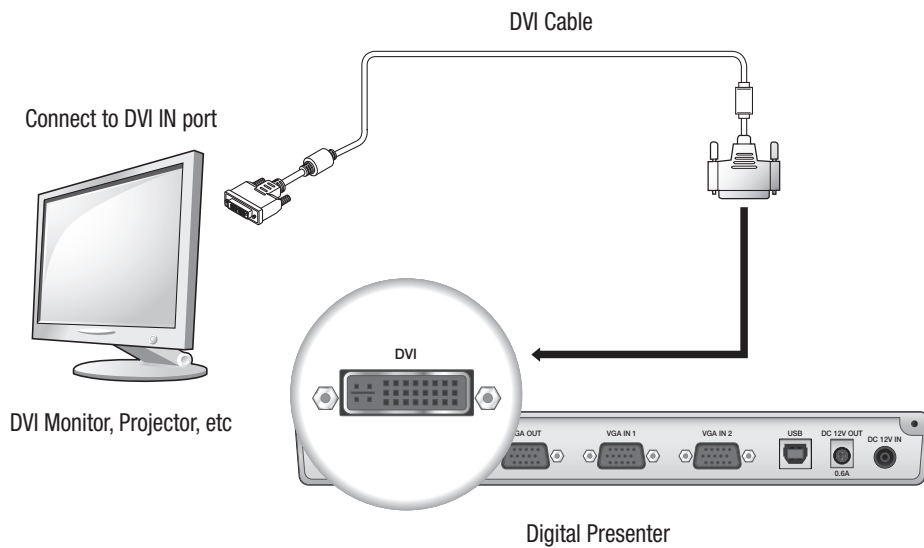
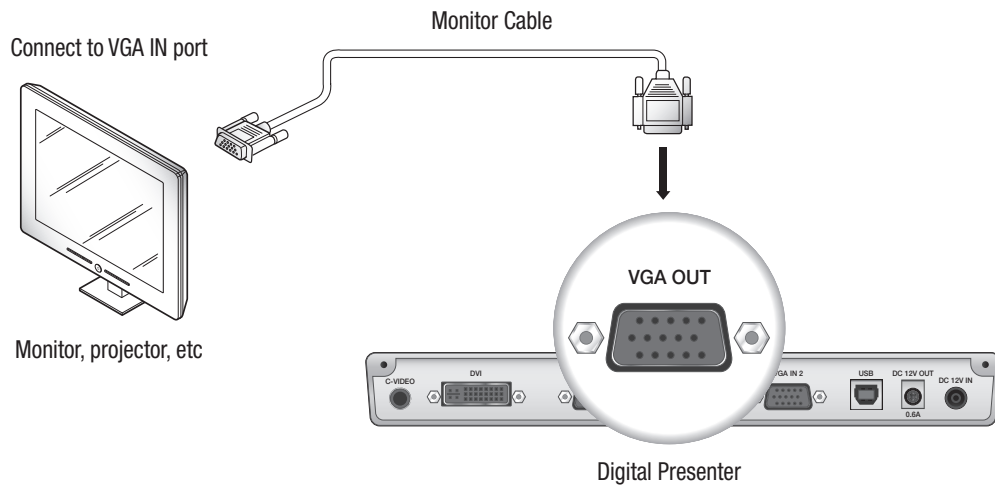


## CONNECTING THE I/O DEVICE

### Connecting the output device

If you want to play video on the common PC monitor or DVI monitor, use the monitor cable or DVI cable to connect the monitor or DVI-compliant device to the digital presenter.

#### ❖ How To Connect

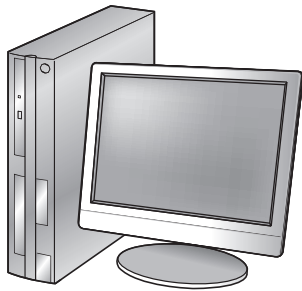


- Depending on the D/A converter of SDP-960 or the A/D converter of the monitor, the colors of RGB and DVI output may differ.

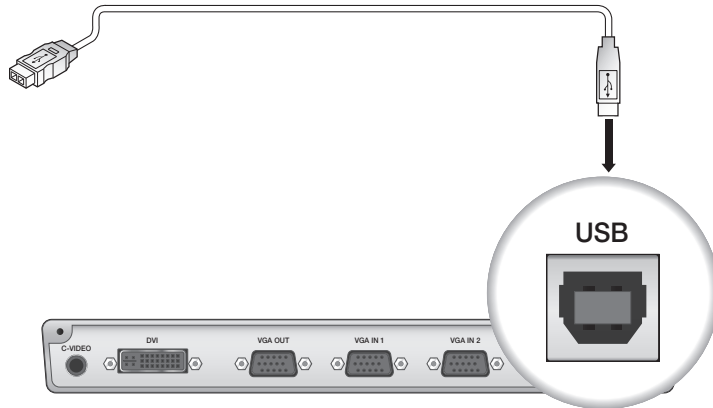
# installation & connection

## ❖ To connect to a PC that will be used as output device

Use the USB cable to connect between PC and digital presenter. You can view the video from the digital presenter on the PC monitor.

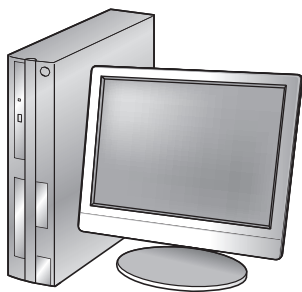


Connect the cable to the USB port of the PC.

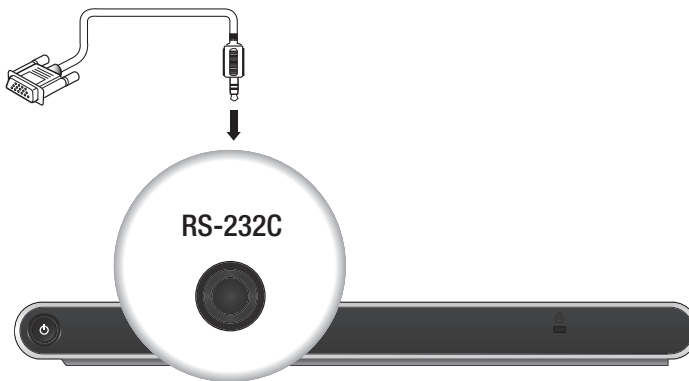


Digital Presenter

- ! It is recommended to connect the USB cable to the USB port on the main board of your PC. (Using an extension front port or the bus-power USB hub may cause a problem, depending on the manufacturer.) Use only the USB cable of less than 4.0m in length.



Connect the cable to the RS-232C port of the PC.



Digital Presenter

- ! The RS-232C cable is optional that is not included in the product package. Purchase it if needed. However, a third-party RS-232C cable (manufactured by other than Samsung Techwin) may not guarantee a proper operation.
- ✍ If using the USB cable for the connection, install the provided USB driver and SDP-960 Viewer on your PC. For more information, refer to the provided program manual. If using the RS-232C cable, no specific driver is provided. Obtain the necessary programs on your own.

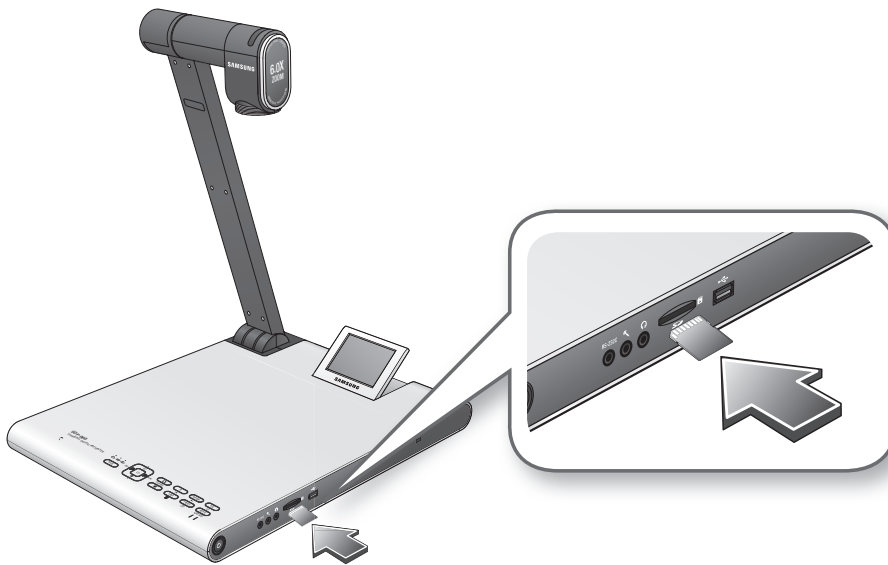
## Connecting the additional device

### ❖ SD(HC) Storage Device

You can connect the SD(HC) storage device.

If using SD(HC) or USB storage device, you must set **CAPTURE SETTING → MEMORY SEL.** to SD(HC) or USB.

1. Face the metal side (golden finger) of the SD(HC) card upward before inserting it.



2. You will see a message of “**SD(HC)CARD DETECTED PLEASE WAIT..**”. Now you can use the photo or video capturing menu.

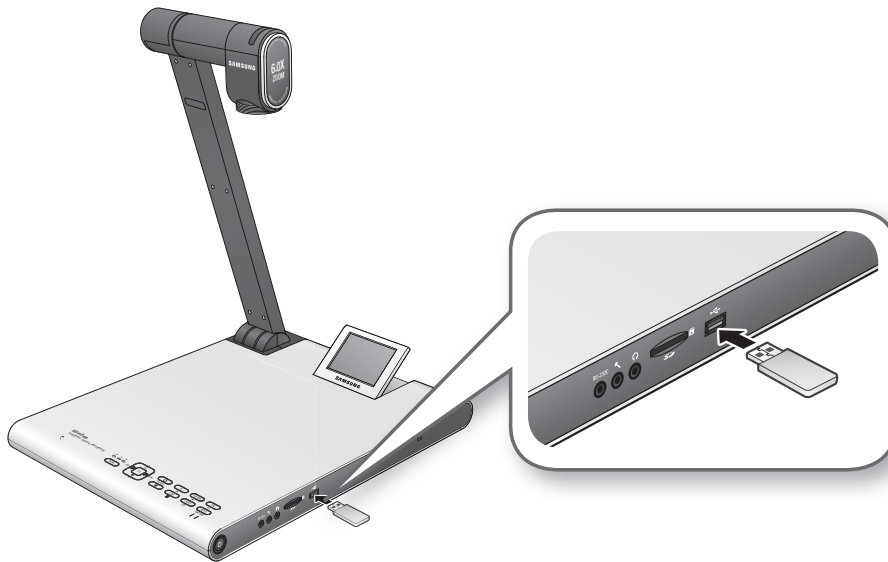
- ! ■ If the SD(HC) card is locked, the video capture will be disabled.
- If the SD(HC) card does not save the video properly, format the SD(HC) card and try again.
- Other memory cards than SD(HC) may not be supported. (MMC, RS-MMC, etc)
- Some SD(HC) memory cards may not be compliant.
- It is recommended to use SanDisk SDHC CLASS 2 (4GB, 8GB) or SanDisk SDHC Video HD Extreme 16GB for the SD memory card.
- The presenter supports up to 32GB of SD(HC) storage device.

# installation & connection

## ❖ USB Storage Device

You can connect the USB storage device.

1. Face the bottom side of the USB storage device downward before inserting it.

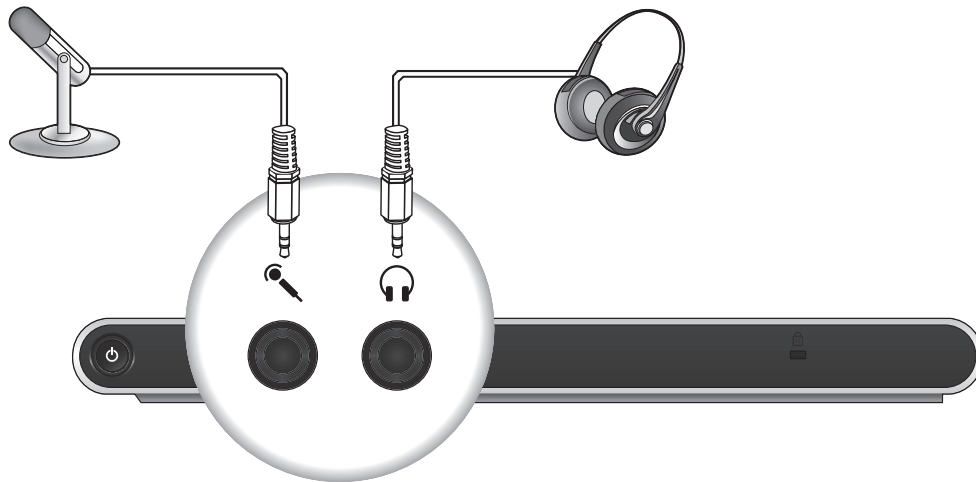


2. You will see a message of **"USB MEMORY READY"**. Now you can use the photo or video capturing menu.

- ! You can capture and save up to 1 hour of video to the USB storage device.
- Some USB storage devices may not be supported by the presenter.  
If the USB storage device does not operate properly, format it and try again.
- It is recommended to use Transcend Jetflash 500/530-series (8GB/16GB) for the USB memory.
- A USB memory that supports recognizing multiple storage devices or partitions is not compliant.  
(ex: Multi Memory Reader, USB memory with CD or Drive partition, etc)
- The presenter supports up to 16GB of USB storage device.
- The USB HDD is not guaranteed to operate properly.

### ❖ Audio/Microphone

The audio or microphone jack is 3.5Ø in diameter.



- ❗ If you use an external microphone, the internal one will be disabled.
- LINE INPUT is not supported.

### ❖ Kensington Lock

Kensington lock is a theft-proof device that you can use to tie up the presenter to a fixed object such as showcase using a wire cable.



- 🔒 Kensington lock is an optional accessory (unbundled). Purchase it for you.

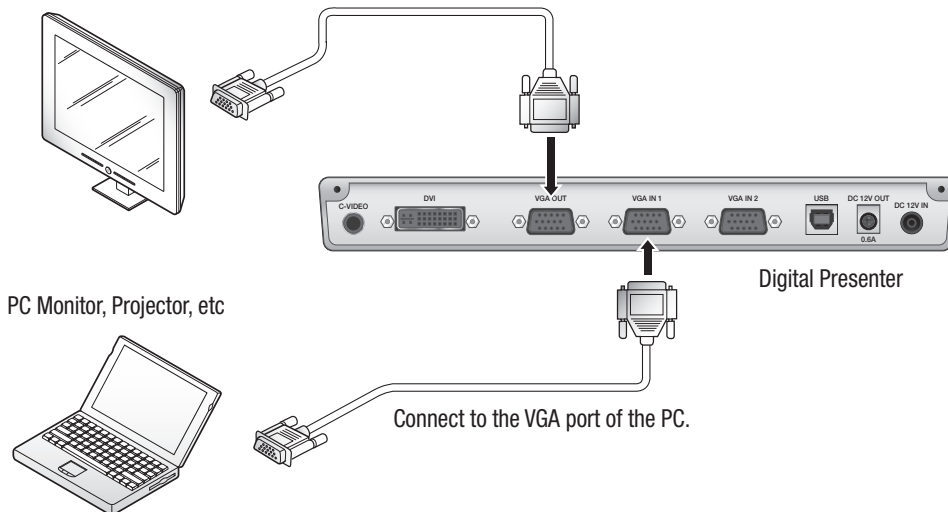
# installation & connection

## To connect to a PC that will be used as external input device

If you want to display the video from VGA on the PC monitor, connect the PC monitor cable to the digital presenter, then to the PC monitor. You can display the video from either presenter or VGA on the PC monitor.

However, DVI output is not supported.

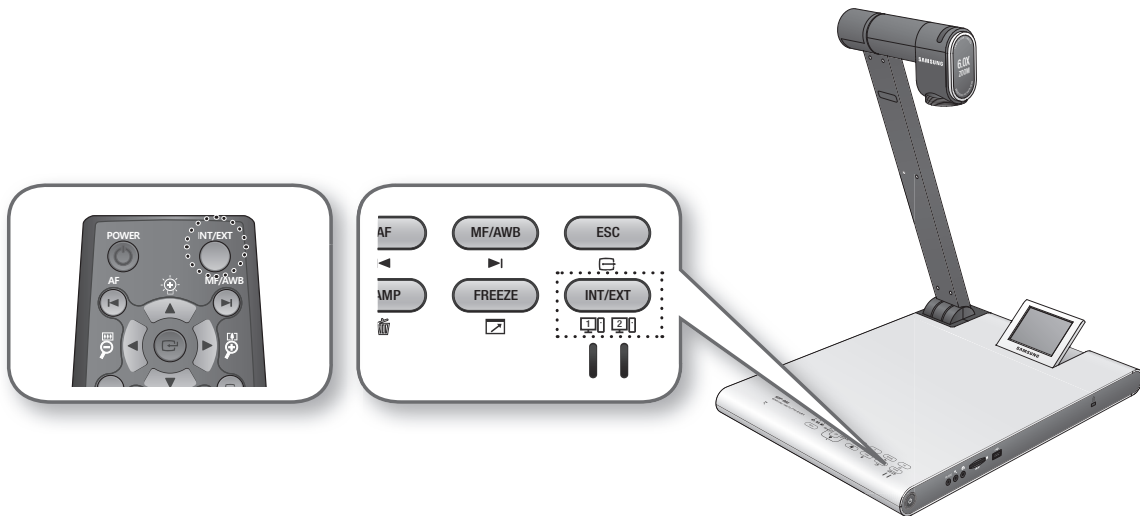
Connect to VGA IN port



- SDP-960 supports the bypass function. If you connect the power cable of the digital presenter, the video source from VGA IN 1 will be displayed automatically even if you do not turn on the presenter. (The bypass function is not available in VGA IN2.)

## To play the video from an external device

1. Install the digital presenter in an appropriate position.
2. Select an input source. Press [**INT/EXT**] on the control panel or on the remote control to select a desired source.  
Each time you press [▶] the presenter plays the video source from between the external source and digital presenter.



- External Video  
You can play the video from an external VGA output device on the monitor or projector.  
If you select to play an external source, the applicable indicator will turn on in blue.
  - Digital Presenter  
Select this if you want to play the video from the lens of the presenter.
- ! ■ You will see the black screen if no external device is connected.  
Ensure that the external input device is connected properly.
- If you press [**INT/EXT**], the status information will not be displayed.

# setup & application

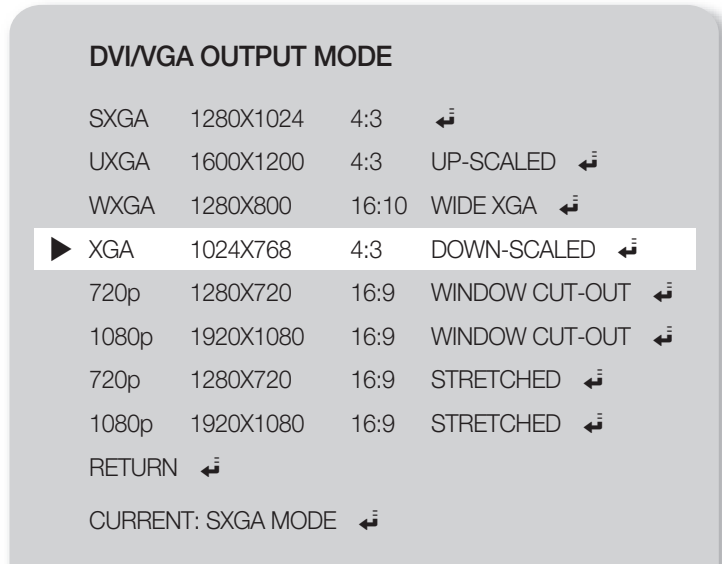
## SETUP

### Output Resolution

You can set a different resolution according to the output device (monitor, projector).

- Resolutions available:
  - SXGA (1280x1024) 4:3
  - UXGA (1600x1200) 4:3 UP-SCALED
  - WXGA (1280x800) 16:10 WIDE XGA
  - XGA (1024x768) 4:3 DOWN-SCALED
  - 720p (1280X720) 16:9 WINDOW CUT-OUT
  - 1080p (1920X1080) 16:9 WINDOW CUT-OUT
  - 720p (1280X720) 16:9 STRETCHED
  - 1080p (1920X1080) 16:9 STRETCHED

1. Press the **[G]** button.
2. Select **DVI/VGA OUTPUT** from the menu.
3. Move the cursor (▶) to a desired resolution and set the output resolution of the digital presenter.



- If the changed resolution is not applied
  1. Press [ESC (**[G]**)] to return to the previous resolution.
  2. Wait 15 seconds before restoring the previous resolution.

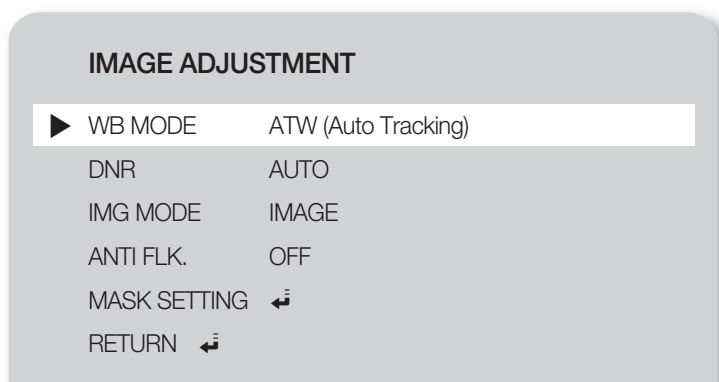


## Image Adjustment

### ❖ White Balance (WB MODE)

You can adjust the color tones of the image automatically in Live mode.

1. From the menu, select **IMAGE ADJUSTMENT → WB MODE**.



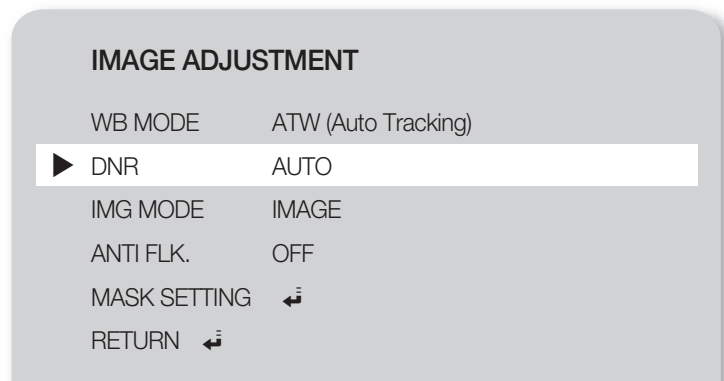
2. Each time you press [▶] the white balance mode will switch to in the order of: <ATW(Auto Tracking) → AWB(KEY) → MANUAL WB>.
  - Auto color adjustment 1: ATW(Auto Tracking)  
This will perform the white balance function according to the change of the color temperature of a light source.
    - Select **ATW(Auto Tracking)**.
    - When done, return to the Live screen.
  - Auto color adjustment 2: AWB(KEY)  
You can adjust the color tones of the color tones automatically in Live mode each time you press [MF/AWB].
    - Select **AWB(KEY)** and press [MF/AWB] on the Live screen.
    - Select **AWB** from **MF** and **AWB**.
      - You can press [C] or [MF/AWB] to activate the function.
    - Press [MF/AWB] to adjust the color tones automatically.
  - Manual color adjustment: MANUAL WB  
You can adjust the settings of **RED GAIN** and **BLUE GAIN** manually before performing the white balance.
    - Select **MANUAL WB**.
    - Use the [◀▶] button to change the settings to your preference.
    - When done, return to the Live screen.

# setup & application

## ❖ Noise Reduction (DNR)

DNR stands for Digital Noise Reduction that provides a clear image through 2D/3D filtering.

1. From the menu, select **IMAGE ADJUSTMENT** → **DNR**.



2. The Noise Reduction mode will switch to <OFF → AUTO → MAX> each time you press [▶].

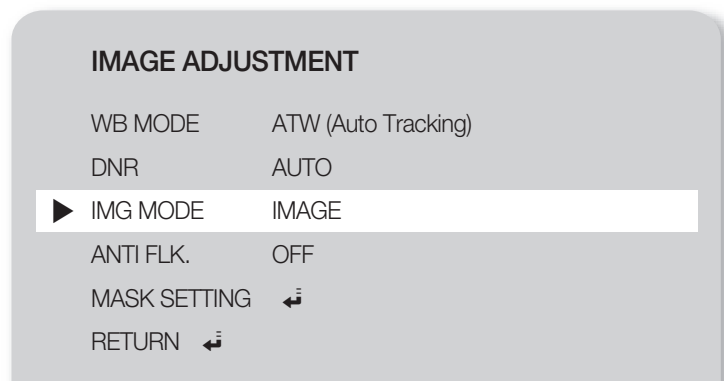
- AUTO : Control the NR(Noise Reduction) level according to the illumination.
- MAX : Increase the NR(Noise Reduction) level to the maximum.

! ▪ A faster moving object may cause an afterimage.

## ❖ Image Correction (IMG MODE)

This will optimize the display of the image.

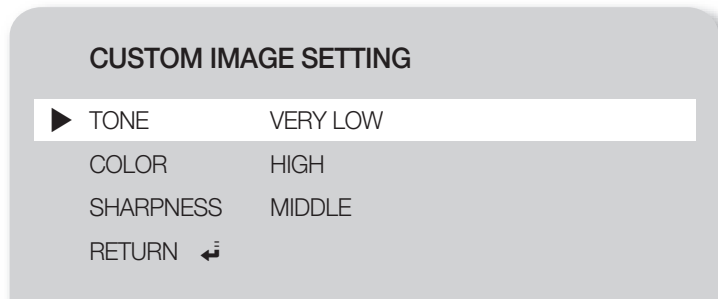
1. From the menu, select **IMAGE ADJUSTMENT** → **IMG MODE**.



2. Each time you press [▶], the IMG mode will switch to <TEXT → IMAGE → CUSTOM> in this sequence.

- TEXT : Optimize the display of a manuscript containing a large volume of text.
- IMAGE : Optimize the display of a photo or picture.

3. If you select **CUSTOM**, you will see the following sub menu items.



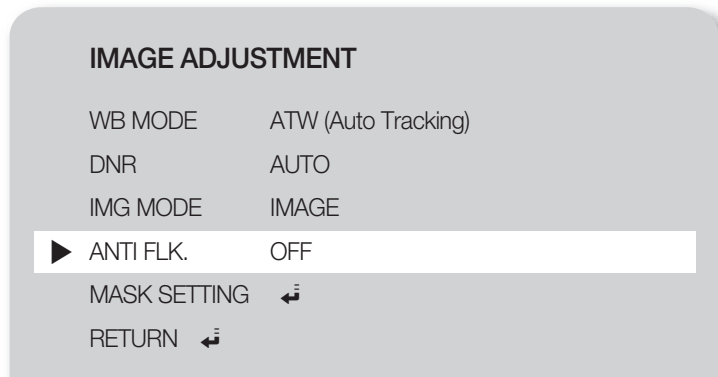
- **TONE** : Select a gamma setting of luminance.  
Each time you press [▶], the tone setting will switch to <VERY LOW → LOW → MIDDLE → HIGH → VERY HIGH>.
- **COLOR** : Select a gain setting.  
Each time you press [▶], the gain of color will switch to <LOW → MIDDLE → HIGH → B/W>.
- **SHARPNESS** : Select a level of sharpness (image correction).  
Each time you press [▶], the sharpness level will switch to <LOW → MIDDLE → HIGH>.

! ■ If you increase the sharpness level, the image may be displayed abnormally or it can cause a noise.

### ❖ ANTI FLK. Mode

You can use this feature if you encounter a flickering screen due to a frequency mismatch with the ambient lighting.

1. From the menu, select **IMAGE ADJUSTMENT → ANTI FLK..**



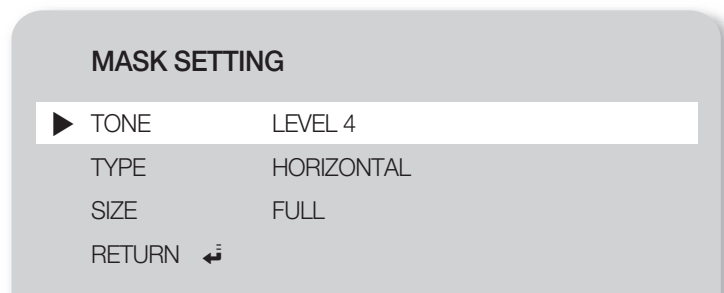
2. Use [▶] to specify the use of **ANTI FLK..**

# setup & application

## ❖ Mask Setting

You can mask a portion or the whole of the screen so that it is hidden.

1. From the menu, select **IMAGE ADJUSTMENT → MASK SETTING**.



2. Select **MASK SETTING** to display the sub menu items.

- **TONE** : Select a tone level.  
Each time you press [▶], the tone value will switch to <LEVEL 1-2-3-4>. The lower the level is, the greater the transparency of the masking area becomes.
- **TYPE** : Select a mask orientation.  
Each time you press [▶], the mask orientation will switch to <VERTICAL - HORIZONTAL>.
- **SIZE** : Select a mask size.  
Each time you press [▶], the mask size will switch to <FULL - 3-QUARTERS - HALF - QUARTER>.

- When the mask setting is completed, press the [MASK] button on the remote control to activate it. Use the left/right buttons to move the masking area.

## Zoom In/Out

You can zoom in/out an object on the screen.

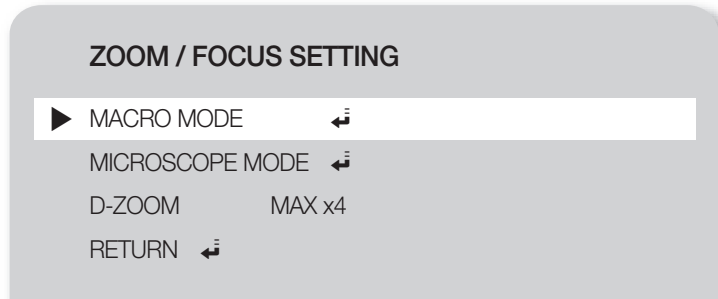
Use [Ⓜ] or [Ⓜ] on the control panel or the remote control to adjust the view.  
(Optical zoom x6, digital zoom x8)

- If you press [Ⓜ] or [Ⓜ], the sky blue area indicates an optical zooming area while the red area indicates a digital zooming area.
- The maximum optical zooming factor is x6. No further zooming will be allowed even if you press and hold [Ⓜ].  
To switch to digital zoom, press [Ⓜ] again.  
To switch from digital zoom to optical zoom, press [Ⓜ] again, too.
- The digital zooming may deteriorate the quality of video.

### ❖ Macro Mode

You can make a short-distance recording (between 1cm and 5cm).

1. From the menu, select **ZOOM/FOCUS → MACRO MODE**.



2. Perform Auto Focus or Manual Focus at a distance of between 1cm and 5cm, and check if the operation is performed properly.
3. Press [ESC (⏏)] to release the macro mode.

- ✎ The optical zooming will be disabled in macro mode. However, the digital zooming still works.

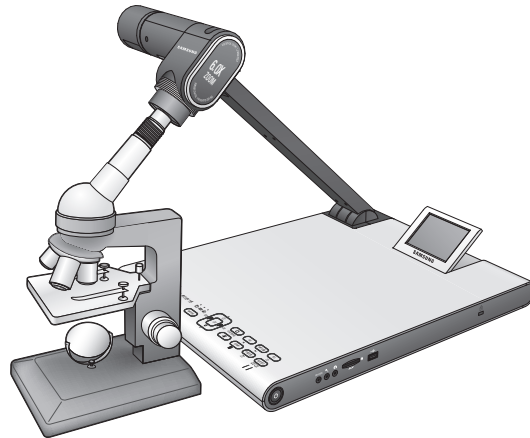
### ❖ Microscope mode

1. Attach the microscopic adapter lens to the lens of the presenter. Turn it to fix.

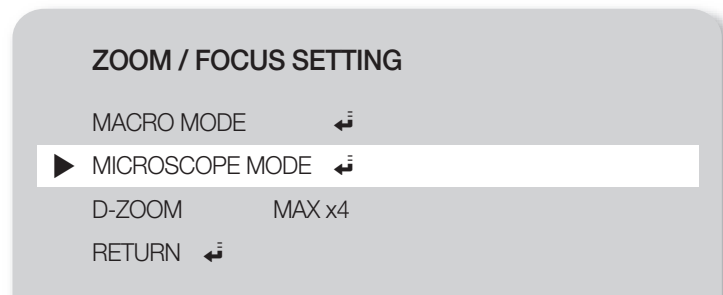


# setup & application

2. Present the microscopic adapter lens as close to the ocular piece of the focus-fixed microscope as possible, and adjust the position of the digital presenter so that the round shape on the screen is positioned at the center of the monitoring screen.



3. From the menu, select **ZOOM/FOCUS → MICROSCOPE MODE**.

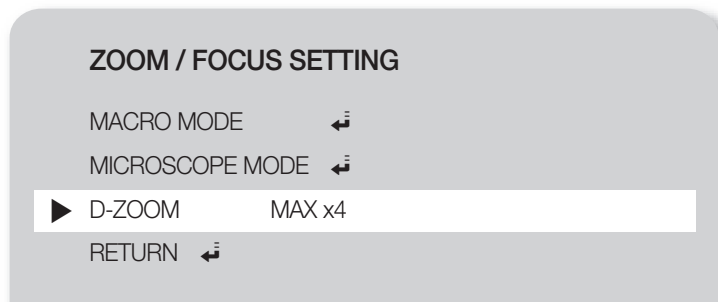


4. Check if the lens fits the focus.  
If it is out of focus, use the micro-motion device of the microscope to fit the focus and try again.
  5. Press [ESC (E)] to release the microscope mode.
- ✍ If a macro mode adapter lens is equipped, you can make a short-distance recording of the minimum of 1cm.
  - ! In microscope mode, the auto exposure function will be performed by adjusting only the center area of the image.

### ❖ Digital-Zoom (D-ZOOM)

Specify the maximum factor of digital zooming.

1. From the menu, select **ZOOM/FOCUS → D-ZOOM**.
2. Each time you press [▶], the D-ZOOM max value is changed to <OFF → MAX x4 → MAX x8>.



3. Select a D-ZOOM MAX value and check if the D-ZOOM max value is applied properly in Live mode by pressing the applicable button.

## To adjust the focus

### ❖ Automatic Focus

You can fit the focus automatically in Live mode.

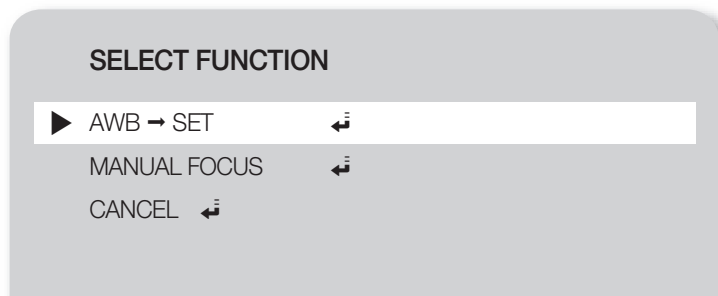
In Live mode, press [AF] on the control panel or the remote control.

### ❖ Manual Focus

You can fit the focus manually in Live mode.

1. Press [MF/AWB] and use the [⊕] [⊖] buttons to fit the focus.
2. Press [MF/AWB] to exit the manual focus mode.

If the white balance is set to **AWB(KEY)**, you can press [MF/AWB] to display the screen setting menu.



# setup & application

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## To adjust the brightness

You can use the iris of the lens to adjust the brightness of the object.  
If the object is dark, adjust it to brighter while if it's too bright, adjust it to darker.

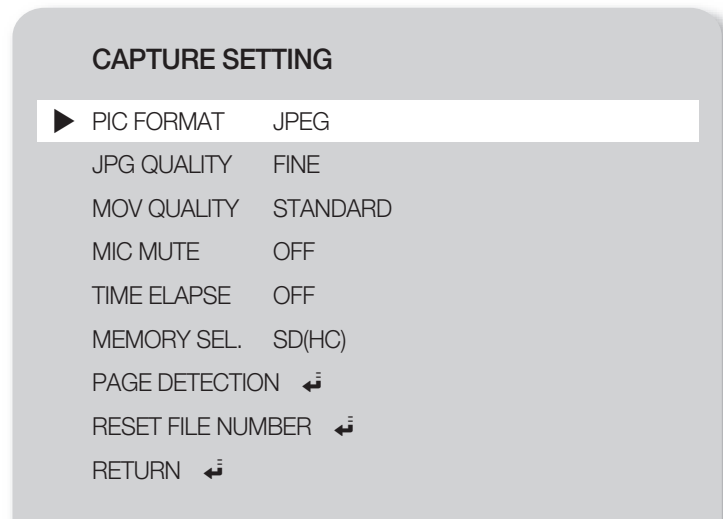
- Brighter : Press [☀] on the control panel or the remote control.
  - Darker : Press [☁] on the control panel or the remote control.
- ✍️ ▪ If you use a high-glossy paper, turn off the upper lighting (-> natural lighting) and use the [☁] button on the control panel or the remote control to adjust the brightness level to lower. Then, move the manuscript for a better view.

## To capture the image/video

### ❖ Capture Setting

You can specify the format and resolution of the video or still image that you have captured.

From the menu, select **CAPTURE SETTING**.



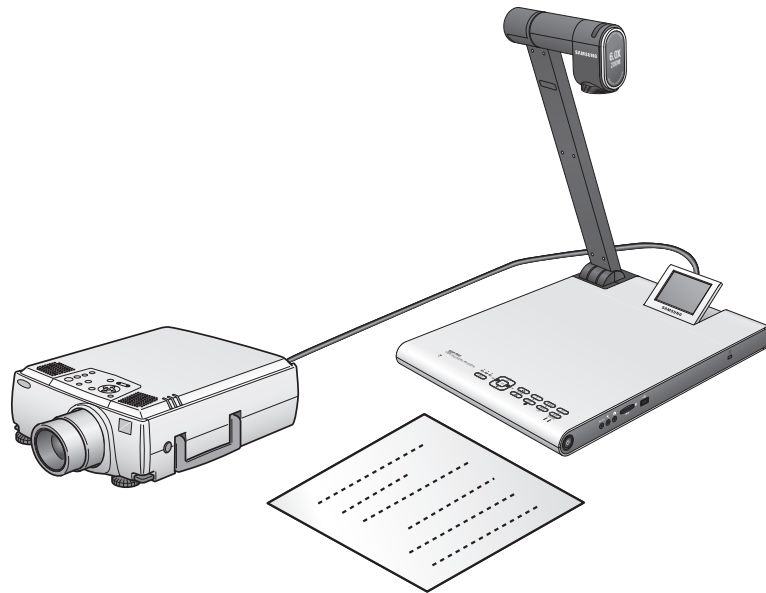
- Format of captured image (PIC FORMAT)
  - Press [▶] to select a desired format. The format of a still image will switch to <JPEG → BMP>.
- Image Resolution (JPG QUALITY)
  - Press [▶] to select a desired resolution. The quality of a still image will switch to <BEST → FINE → NORMAL>.
- Video Resolution (MOV QUALITY)
  - Press [▶] to select a desired resolution. The quality of a video clip will switch to <BEST → STANDARD>.
- Use of microphone (MIC MUTE)
  - Use [▶] to specify the use of the mute function. (ON/OFF)



- TIME ELAPSE
    - Press [▶] to specify the video recording time. (5MIN-1HOUR)
  - Select a storage device (MEMORY SEL.)
    - Press [▶] to select a desired storage device. The storage device will switch to SD(HC) → USB.
  - PAGE DETECTION
    - The presenter can detect a moving book or paper on the screen and save it to SD(HC) card or USB storage device automatically.
  - RESET FILE NUMBER
    - Reset the file name of a captured photo or video to the default.
    - Press [📷] to reset the name of a captured photo or video.
- ! ■ If a file with the same name exists in the SD(HC) card or USB, it will be deleted. Therefore, it is recommended to back up SD(HC) card or USB before resetting the file name.
- **PAGE DETECTION** operates properly only if the object moves in both sides (left/right).

### ❖ Image Capture

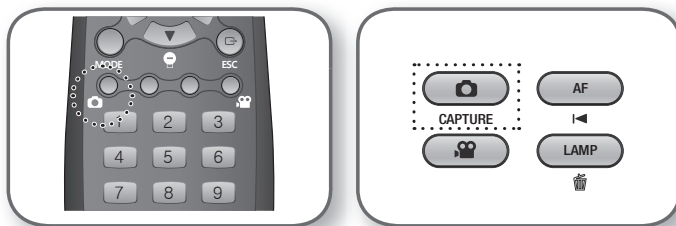
1. Install the digital presenter in an appropriate position.



2. Insert a selected storage device (SD(HC)/USB).

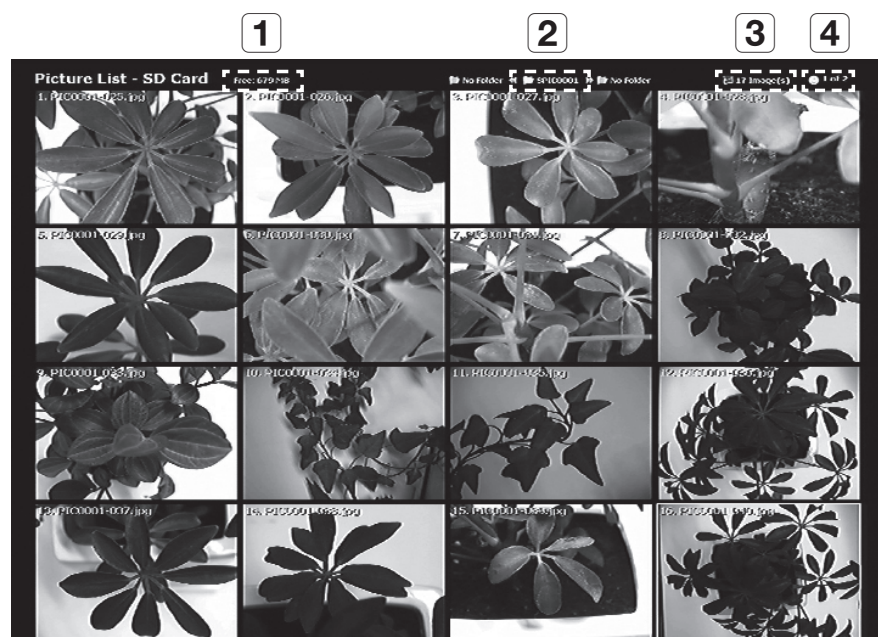
# setup & application

3. To capture the image, press [  ] on the control panel or the remote control.



4. To check the captured image, press [ **MODE** ] to enter Still Image mode.

5. Still Image Mode



1 Show the remaining free space of the inserted storage device.

2 Show the current folder.

3 Display the number of photos stored in the current folder.

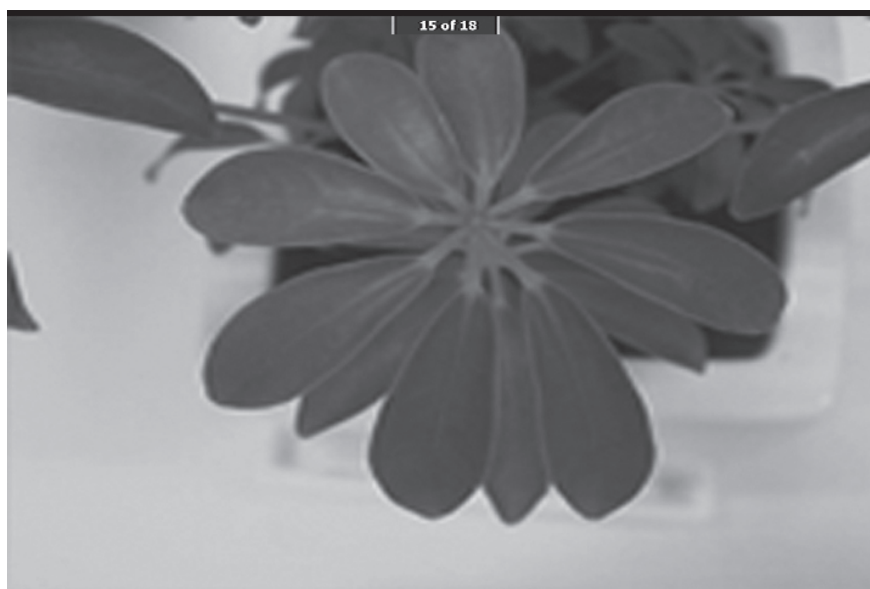
4 Show the current page/total pages in the current folder.

6. Press [     ] to select a desired video.

Use the [   ] button to page up or down.

7. Press [  ] or [  ] to check the captured video.

- Full Screen



- In full screen mode, you can use the [◀▶] buttons to move to the previous or next picture.
- Press [⏪] to move to the top-listed file in the folder.  
Press [⏩] to move to the last-listed file in the folder.
- To switch from full screen to still image mode, press [E].

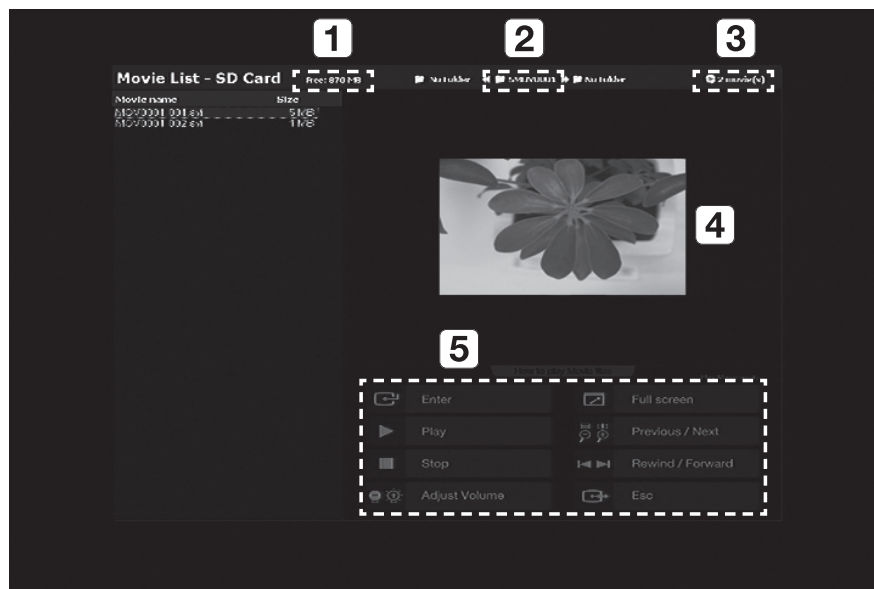
8. To delete an image, select the image and press [🗑️].

### ❖ Video Capture

1. Install the digital presenter in an appropriate position.
    - Connect the microphone if you want to make recording using an external microphone. However, if you use an external microphone, the internal one will be disabled.
  2. The video will be played in Live mode (LIVE) when turning on the power button of the presenter or the remote control.
  3. Insert a selected storage device (SD(HC)/USB).
  4. To capture the video, press [📹] on the control panel or the remote control.
    - The file name and time elapsed will be displayed in the bottom of the capture screen. However, if you have specified the capturing time, the remaining time will be displayed instead.
  5. To exit the capturing, press [📹].
- ! ▪ If you perform the zoom In/Out operation during the video capture, the captured video may cause a temporary drop frame.
6. To check the captured video, press [MODE] to enter Video mode.
    - ! ▪ An abnormal termination (Power off, disconnected storage, etc) during the screen capture may cause a failure to save data, which leads to a playback failure of the storage device.

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## 7. Video Mode



- 
- 1 Show the remaining free space of the inserted SD(HC) card.

---

  - 2 Show the current folder.

---

  - 3 Display the number of video clips stored in the current folder.

---

  - 4 Display the preview window of the selected video.  
(The thumbnail image is the last image of the capture video.)

---

  - 5 Provide a description (help) for each playback-related button.

---

8. Press [**▲▼◀▶**] to select a desired video.  
Use the [**◀▶**] button to page up or down.
9. Press [**▶**] to play the captured video.

- Playback Screen
  - The playback screen will be displayed in 640x480 (original size).
  - You can use the [◀▶] buttons to move forward or backward by 10 seconds.
  - To exit the play mode and return to the video mode, press [⏏].




---

**1** Display the file name of the current video.

---

**2** Display the playback status (PLAY/PAUSE).

---

**3** Display the play time.

---

**4** Display the volume level.

- For more information, refer to the relevant section of the control panel or remote control.

10. To delete a video, select the video and press [🗑️].

# setup & application

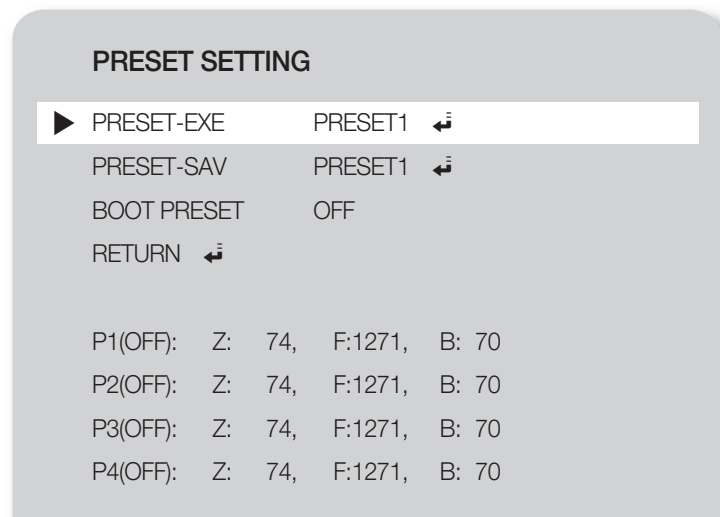
## ❖ Page Detection Setting

1. Expose the book or paper (that you want to auto save) to the screen.
2. From the menu, select **CAPTURE SETTING → PAGE DETECTION**.
3. Align the book or paper with the on-screen guideline.
4. Press **YES** to activate the mode.
5. If you flip a page or place a piece of paper on top of the object, the presenter will detect the motion in both sides (left/right).
6. Wait for 2 seconds to save the image automatically.
7. Press [ESC (E)] to exit the mode.

## Preset

The presenter can memorize the position of Zoom/Focus, brightness of the current image.

1. From the menu, select **PRESET SETTING**.

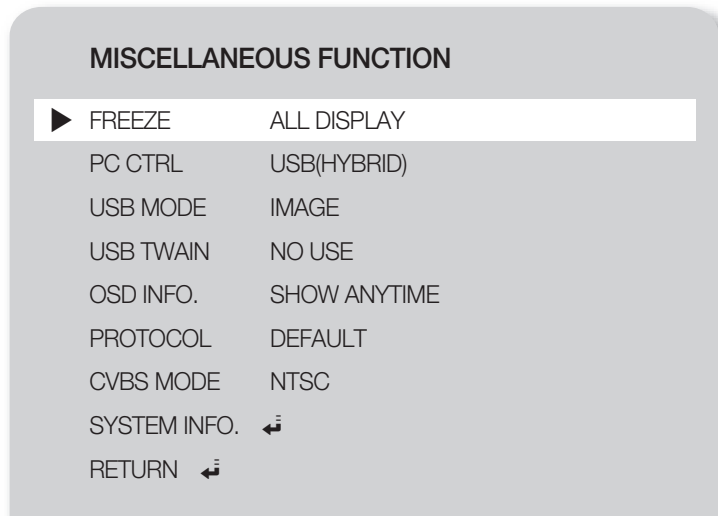


2. From the menu, select **PRESET-NAV** and press [E] to save the current settings to each applicable preset number.
3. From the menu, select **PRESET-EXE** and press [E] to specify the preset number.
4. If you set the **BOOT PRESET** function in the menu, the presenter will retrieve your settings automatically when it turns on.
  - You can specify up to 4 preset numbers.

## Miscellaneous Setting

### ❖ Freeze Mode

1. From the menu, select **MISC. SETTING** → **FREEZE**.



2. Select a mode from **DVI/VGA/CVBS ONLY** and **ALL DISPLAY**.

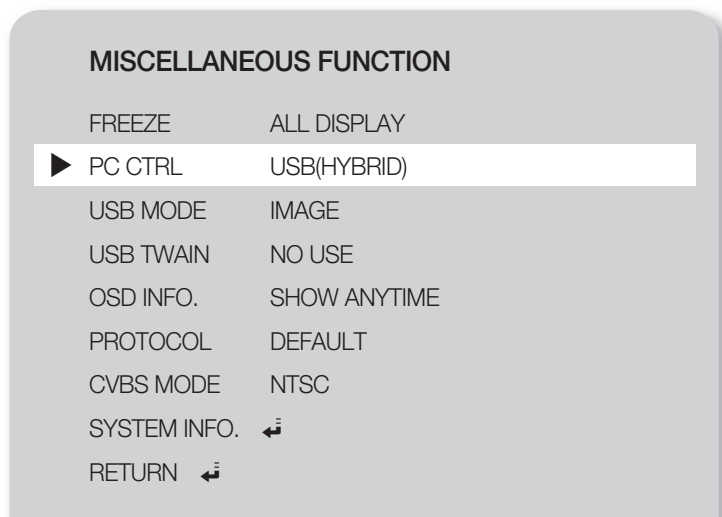
- If selecting <DVI/VGA/CVBS ONLY>
  - If you press [**FREEZE**], the video connected to the DVI/VGA/CVBS output port will be frozen while the video connected to the USB port will be played in Live mode.
- If selecting <ALL DISPLAY>
  - If you press [**FREEZE**], both DVI/VGA/CVBS-connected video and USB-connected video will be frozen. The frozen image will be captured if you select to capture.

- ! ■ Note that If you capture the frozen image, it is a Live screen image that will be saved, not a frozen image.

# setup & application

## ❖ PC CTRL Mode

1. From the menu, select **MISC. SETTING → PC CTRL**.



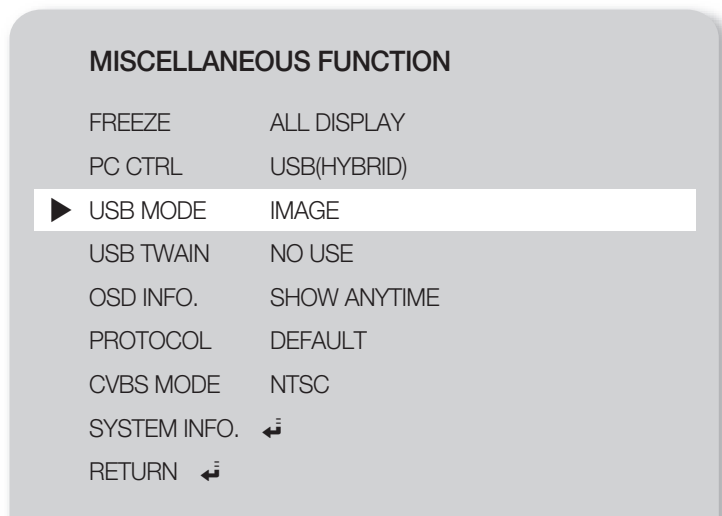
2. Select a mode from **USB(HYBRID)** and **RS-232C ONLY**.

- If selecting <USB(HYBRID)>
  - You can use the USB Viewer to control the PC operation.
- If selecting <RS-232C ONLY>
  - You can use the provided RS-232C protocols to control the PC operation.
    - For more information about the protocols, refer to the user manual of RS-232C communications.

- ! ▪ If you switch from **USB(HYBRID)** to **RS-232C ONLY**, control using the USB Viewer will not be allowed. If you want to use the USB Viewer, select **USB(HYBRID)** mode.

## ❖ USB Mode

1. From the menu, select **MISC. SETTING → USB MODE**.





2. Select a mode from **IMAGE** and **DISK**.

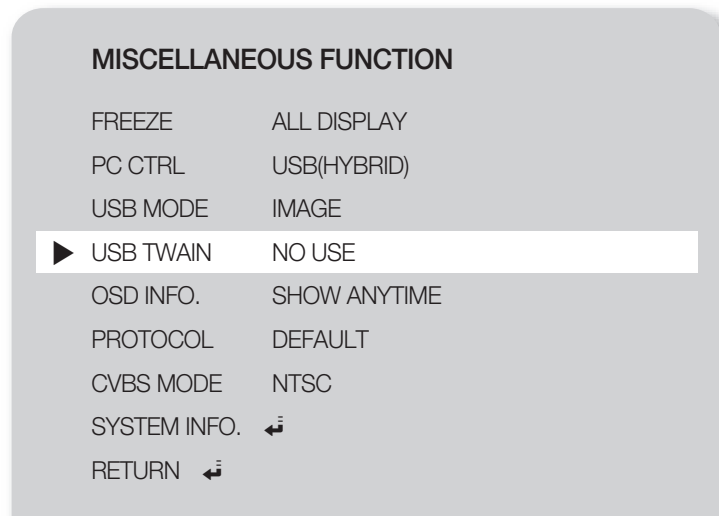
- If selecting <IMAGE>
  - You can use the presenter-inserted SD(HC) card as a storage device in Freeze or Video mode.
- If selecting <DISK>
  - You can use the presenter-inserted SD(HC) card as a removable storage device on your PC.

! ▪ However, the USB memory will not be recognized, in **DISK** mode, as removable disk on your PC.

❖ **USB TWAIN**

The USB TWAIN mode is available if you use the USB cable to connect between presenter and PC that has installed a graphic application in compliance with TWAIN (ex: Photoshop, ACDSEE, MS Office, etc).

1. From the menu, select **MISC. SETTING → USB TWAIN**.



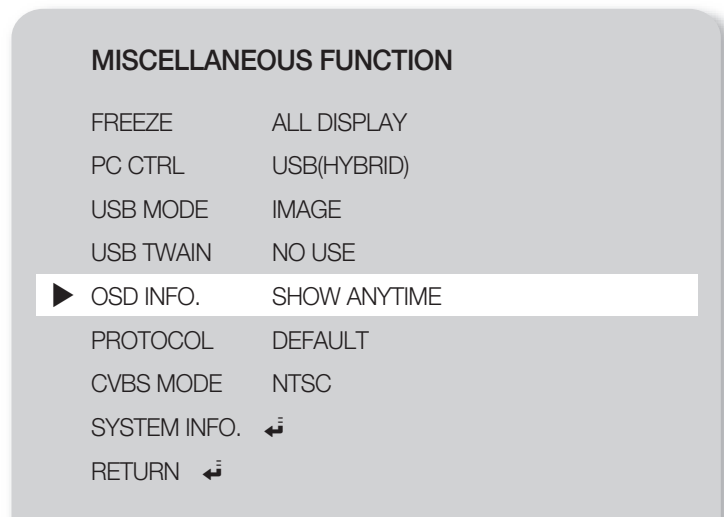
2. To activate TWAIN, set it to **USE**.

- ✍ ▪ For more information, refer to the relevant section of the application program's user manual.
- TWAIN can be performed even if **USB TWAIN** is set to **NO USE**, where only a specific resolution of video can be played properly.  
If you want to use other than 320x240 and 640x480, set **USB TWAIN** to **USE** under the **MISC.SETTING** menu.

# setup & application

## ❖ OSD INFO. Mode

1. From the menu, select **MISC. SETTING → OSD INFO..**



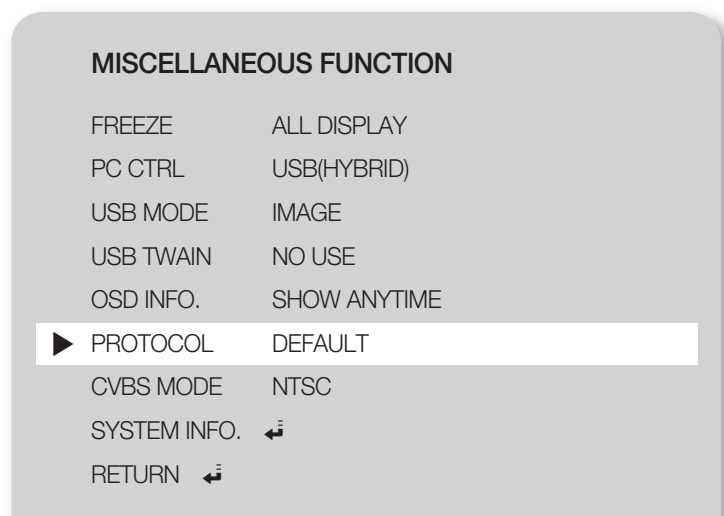
2. Select one from **SHOW ANYTIME** and **HIDE WHEN MOVIE REC.**

- If selecting <SHOW ANYTIME>
  - Display the OSD menus at all times.
- If selecting <HIDE WHEN MOVIE REC>
  - Do not display any of the OSD menu excluding the video recording-related ones.

## ❖ Protocol

You may encounter a conflict across protocols of different devices. To avoid the possible conflict, select an appropriate protocol.

1. From the menu, select **MISC. SETTING → PROTOCOL.**

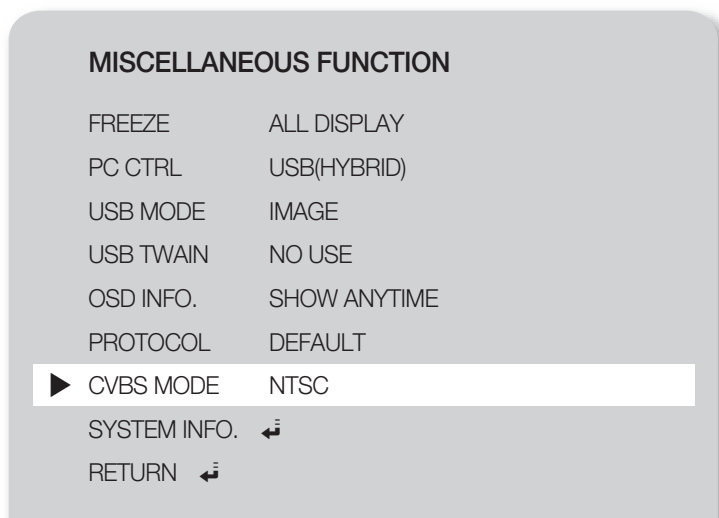


2. Press [**F**] to select **DEFAULT** or **OLD MODE.**

### ❖ CVBS (C-VIDEO) Mode

Use this mode to match the output signal between connected device and CVBS (C-VIDEO).

1. From the menu, select **MISC. SETTING** → **CVBS MODE**.

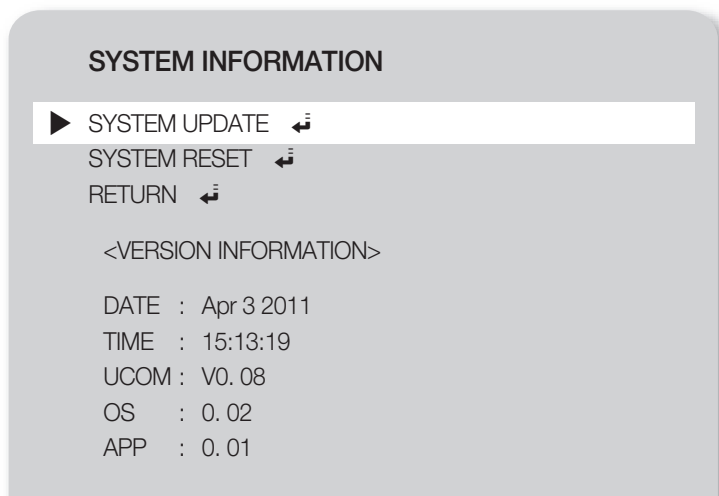


2. Press [**⏪** **⏩**] to select **NTSC** or **PAL**.

## SYSTEM INFO. Setting

### ❖ System Update

1. Download the UCOM update file (SDP960.bin) to the root folder of the SD(HC) card. Insert the card to the device that you want to upgrade.
2. From the menu, select **MISC. SETTING** → **SYSTEM INFO.**



3. Select **SYSTEM UPDATE**.

# setup & application

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4. Select **YES**.

The update progress will be shown on the screen. It will take 5 to 10 minutes.

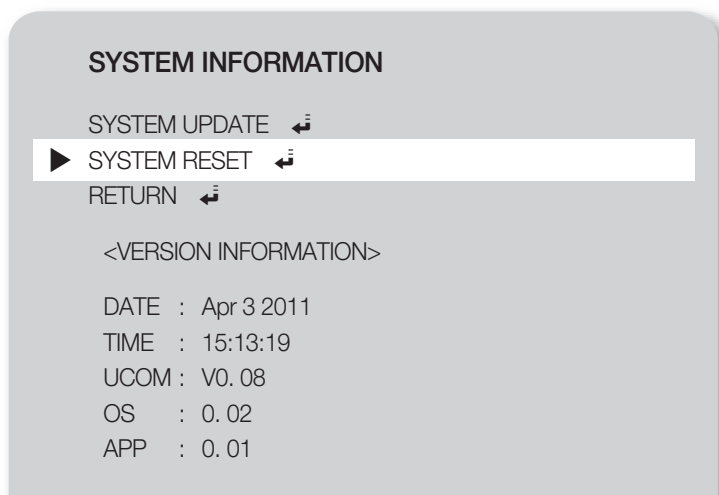


- ! If you unplug the power cable or turn off the device during the update, the device may not operate properly. Do never unplug the power cable before the update is completed.
- ✍ If you want to update the OS, download the update file (NK.NB0) to the root folder of the SD(HC) card. Insert the card to the device and turn it on to perform the update automatically.
  - Some SD(HC) cards may not proceed with the update process normally, depending on the manufacturer. If this is the case, format the SD(HC) card and try again.

## ❖ System Reset

Reset all the settings of the menus and file numbers to the factory default.

1. From the menu, select **MISC. SETTING → SYSTEM INFO..**



2. Select **SYSTEM RESET**.

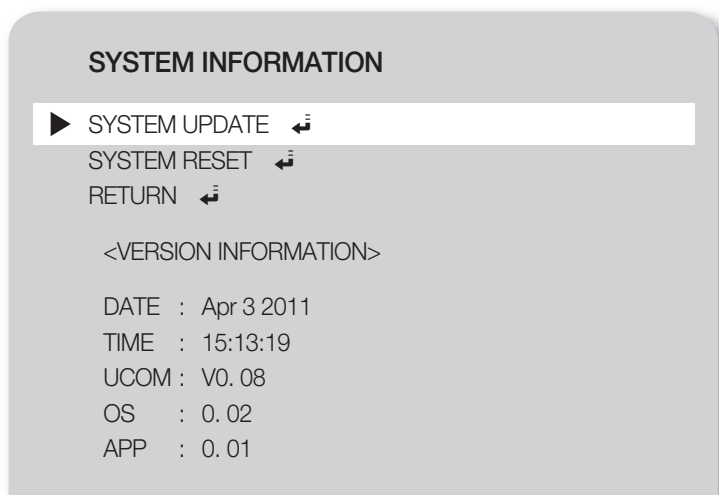
! If you perform **SYSTEM RESET**, the operation of **RESET FILE NUMBER** in **CAPTURE SETTING** will be performed. Back up the data in the SD(HC) card.

3. Press [] to perform the operation.

## ❖ Version Information

You can check the current version information.

From the menu, select **MISC. SETTING → SYSTEM INFO..**



# setup & application

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## Various Screen Settings

### ❖ To rotate the image

You can rotate the image on the screen.

Each time you press the **[ROTATE]** button on the remote control, the image will be rotated by 90°. (90°, 180°, 270°, back to 0°)

**!** In the image rotation mode (90°, 180°, 270°), the OSD information and menus are not displayed.

### ❖ To save and play the image

#### 1. Save

Press the **[SAVE]** button on the remote control and enter a number button (1~8) in less than 4 seconds.

#### 2. Play

- To play an image of your choice

Press the **[RECALL]** button on the remote control and enter a button number (1~8) in less than 4 seconds.

- To play all of the stored images one after the other

If you press and hold the **[RECALL]** button on the remote control, the images will be played one by one in sequence.

**!** The images will disappear automatically if the digital presenter is turned off.  
The saving operation will be disabled in Freeze or Rotate mode.

### ❖ To play both Live image and any of the stored images on the same screen

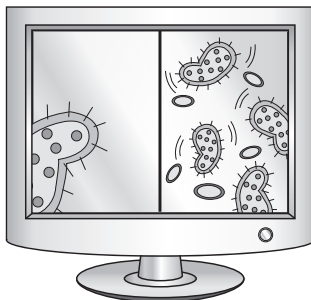
You can split the screen in two: one for the Live screen under monitoring, and the other for the stored image.

- To play in a split mode

Press the **[SPLIT]** button and enter a number button (1~8) in less than 4 seconds.

- To move the stored image

The stored image will be played in the left. As the stored image occupies the left half of the screen, use the **[LEFT]** buttons to scroll through the whole image by 1/3 of the view area.



### ❖ To check all of the stored images and select one from them

You can check all of the images stored in the current memory and select one from them.

- Press and hold the [3X3] button on the remote control for more than 1 second. The whole images stored in the current memory will be listed.
- The images will be listed in the order shown. (Basically, the numbers are not displayed on the actual screen.)
- Select a desired image by pressing the corresponding number button on the remote control. The selected image will be played on the monitor.



# appendix

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## TROUBLESHOOTING

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Problem	Solution
<b>No video is displayed.</b>	<p>Check if the resolution of the output device matches with the presenter. (If the projector supports VGA, for instance, and the presenter has set the resolution to XGA or SXGA, no image will be displayed on the screen.)</p> <ul style="list-style-type: none"><li>• Check if the output device has set a proper input source.</li></ul>
<b>USB communication with the PC fails.</b>	<ul style="list-style-type: none"><li>• Check if the SDP-960 program is installed on your PC properly.</li><li>• Check if there is a problem with your operating system of Windows XP. A lower version of Windows may cause a trouble.</li><li>• For more details, refer to the provided user manual of the software program.</li><li>• Check if the <b>USB MODE</b> is set to <b>IMAGE</b>.</li></ul>
<b>The remote control does not operate properly.</b>	<ul style="list-style-type: none"><li>• Check if the remote control runs out of battery, and replace the battery if necessary.</li></ul>



## MENU SETTINGS & DEFAULT

Menu Item				Default
I	II	III	IV	
DVI/VGA OUTPUT	SXGA 1280X1024 4:3 UXGA 1600X1200 4:3 UP-SCALED WXGA 1280X800 16:10 WIDE XGA XGA 1024X768 4:3 DOWN-SCALED 720p 1280X720 16:9 WINDOW CUT-OUT 1080p 1920X1080 16:9 WINDOW CUT-OUT 720p 1280X720 16:9 STRETCHED 1080p 1920X1080 16:9 STRETCHED			SXGA
IMAGE ADJUSTMENT	WB MODE	ATW(Auto Tracking)/AWB(KEY)/MANUAL WB		ATW (Auto Tracking)
	DNR	OFF/AUTO/MAX		AUTO
	IMG MODE	TEXT		IMAGE
		IMAGE		
		CUSTOM	TONE - VERY LOW/LOW/MIDDLE/HIGH/ VERY HIGH COLOR - LOW/MIDDLE/HIGH/B/W SHARPNESS - LOW/MIDDLE/HIGH	
	ANTI FLK.	OFF/ON		
MASK SETTING	TONE - LEVEL 1/LEVEL 2/LEVEL 3/LEVEL 4 TYPE - VERTICAL/HORIZONTAL SIZE - FULL/3-QUARTERS/HALF/QUARTER			
ZOOM/FOCUS	MACRO MODE			-
	MICROSCOPE MODE			-
	D-ZOOM	OFF/MAX x4/ MAX x8		MAX x8

# appendix

Menu Item				Default
I	II	III	IV	
CAPTURE SETTING	PIC FORMAT	JPEG/BMP		JPEG
	JPG QUALITY	BEST/FINE/NORMAL		FINE
	MOV QUALITY	STANDARD/BEST		STANDARD
	MIC MUTE	ON/OFF		OFF
	TIME ELAPSE	OFF/5MIN/10MIN/15MIN/20MIN/30MIN/45MIN/1HOUR		OFF
	MEMORY SEL.	SD(HC)/USB		SD(HC)
	PAGE DETECTION	-		-
	RESET FILE NUMBER	-		-
PRESET. SETTING	PRESET-EXE	PRESET1/PRESET2/PRESET3/PRESET4		-
	PRESET-SAV	PRESET1/PRESET2/PRESET3/PRESET4		-
	BOOT PRESET	OFF/PRESET1/PRESET2/PRESET3/PRESET4		OFF
MISCELLANEOUS FUNCTION	FREEZE	DVI/VGA/CVBS ONLY ALL DISPLAY		DVI/VGA/CVBS ONLY
	PC CTRL	USB(HYBRID) / RS-232C ONLY		USB(HYBRID)
	USB MODE	IMAGE/DISK		IMAGE
	USB TWAIN	NO USE/USE		NO USE
	OSD INFO.	SHOW ANYTIME/HIDE WHEN MOVIE REC		SHOW ANYTIME
	PROTOCOL	DEFAULT/OLD MODE		DEFAULT
	CVBS	NTSC/PAL		-
	SYSTEM INFO.	SYSTEM UPDATE/SYSTEM RESET		-

## SPECIFICATIONS

For enhanced performance, the product specification is subject to change without prior notice.

Item	Description	
Optical Lens	Recording Lens	F = 2.5(Wide) ~ 3.12(Tele), f = 4.1 ~ 24.6mm
	Effective Range	Max : 420 X 336 mm (16.5"x11.7")
	Zoom	x48 (motorized: 6X / digital: 8X)
	Focus	Auto/Manual
	Exposure	AUTO (fine-tuning)
Video System	Recording Device	1/3" Progressive Scan CMOS image sensor
	Gross pixels	1,384(H)×1,076(V), 1.49M pixels
	Valid pixels	1,329(H)×1,049(V), 1.39M pixels
	Frame Rate	30fps
	VGA Out	Native signal output - SXGA (1,280 x 1,024) WXGA (1,280 x 800) HD (1,280 x 720) XGA (1,024 x 768)
		Converted signal output - UXGA (1,600 x 1,200) Full HD (1,920 x 1,080)
	Video Output	Available (NTSC/PAL)
Resolution	H : 700 TV Lines / V : 700 TV Lines	
Functions	White Balance	ATW / AWB (One-push) / Manual
	Image Correction	Image Mode/Text Mode/Custom Mode
	DNR	Available (Low light presenter with 2D/3D NR)
	Preset	Max of 4 user-defined preset numbers
	Mask	Available
	Freeze	Available
	Rotate	Available (90°, 180°, 270°)
	Save Image	Still Image : JPEG, BMP
Video : MPEG-4 640×480 with Audio(MIC)		

# appendix

Item		Description	
Functions	Play	Still Image : Internal memory - Thumbnail 3 x 3 / External memory (SD(HC) card & USB storage) - Thumbnail 4 x 4	
		Video : Internal Movie Player	
	Screen Division	Available	
	Storage	Internal Memory : 8 pictures (RAW image data), External : SD(HC) card (Max. 32GB), USB storage (Max. 16GB)	
	USB I/F	USB 2.0 protocols supported - UVC for Web Camera - Twain Driver	
	Input Selection	3 channels (internal x1, external x2)	
	Lighting	LED lighting system	
Interface	I/O Port	Input port	VGA In – 15-pin D-SUB connector × 2
			Audio In - Ø3.5 jack × 1 (internal microphone)
	I/O Port	Output Port	VGA Out – 15-pin D-SUB connector × 1
			DVI Output - DVI connector × 1
			AVI out - RCA connector x 1
			Audio out - Ø3.5 jack × 1
	I/O Port	I/F Port	RS-232C - Ø3.5 jack × 1
			USB - USB device port : Type B Connector x 1, USB host port : Type A Connector x 1
			Memory - SD(HC) Slot × 1
	Power port	DC IN	12V DC In × 1
DC OUT		12V DC Out x 1 (Max 0.6A) - optional	
Others	Preview Monitor	Integrated	
	Kensington Lock	Integrated (Kensington lock hole provided)	
	Remote Control	Provided (IR remote control)	
	Microscope Mode	Available (microscope adapter lens – optional)	

Item		Description			
General Operation	Operation Temperature	+5°C ~ +35°C (+41°F ~ +95°F)			
	Operation Humidity	Below 90%			
	Power rating	12V DC, 3.0A			
	Dimension (WXHxD)	- In-use : 340 (W) x 490 (H) x 445 (D) / 13.39" (W) x 19.29" (H) x 17.52" (D) - Off-use : 340 (W) x 66 (H) x 551 (D) / 13.39" (W) x 2.60" (H) x 21.69" (D)			
	Weight	4.8Kg (10.58 lb)			
	Accessories	<table border="1"> <tr> <td>Provided</td> <td>User Manual, Remote Controller, Power Cable, Power Adapter, DVI Cable, VGA Cable, USB Cable, USB Program CD &amp; Manual, RS-232C User Manual, Diffuser Sheet (220x190, 220x307), Remote Control Battery (AAA)</td> </tr> <tr> <td>Optional</td> <td>Microscope adapter lens, RS-232C cable</td> </tr> </table>	Provided	User Manual, Remote Controller, Power Cable, Power Adapter, DVI Cable, VGA Cable, USB Cable, USB Program CD & Manual, RS-232C User Manual, Diffuser Sheet (220x190, 220x307), Remote Control Battery (AAA)	Optional
Provided	User Manual, Remote Controller, Power Cable, Power Adapter, DVI Cable, VGA Cable, USB Cable, USB Program CD & Manual, RS-232C User Manual, Diffuser Sheet (220x190, 220x307), Remote Control Battery (AAA)				
Optional	Microscope adapter lens, RS-232C cable				



## SALES NETWORK

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