ELMO

VISUAL PRESENTER

MA-1 / MO-2

INSTRUCTION MANUAL

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

■IMPORTANT SAFEGUARDS

■ Read Instructions
  All the safety and operating instructions should be read before the appliance is operated.
■ Retain Instructions
  The safety and operating instructions should be retained for future reference.
■ Heed Warnings
  All warnings on the product and in the operating instructions should be adhered to.
■ Follow Instructions
  All operating and use instructions should be followed.
■ Cleaning
  Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
■ Attachments
  Do not use attachments not recommended by the product manufacturer as they may cause hazards.
■ Water and Moisture
  Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
■ Placement
  Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
■ Ventilation
  Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
■ Power Sources
  This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home consult your appliance dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
■ Grounding or Polarization
  This product may be equipped with either a polarized 2-wire AC line plug (a plug having one blade wider than the other) or a 3-wire grounding type plug, a plug having a third (grounding) pin. If the 2-Wire polarized plug will not fit in the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. The 3-wire grounding type plug will fit into a grounding type power outlet.
  This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.
■ Power-Cord Protection
  Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
■ Lightning
  For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

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■ Overloading

Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

■ **A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.**

■ Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

■ Servicing

Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

■ Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

• When the power-supply cord or plug is damaged.

• If liquid has been spilled, or objects have fallen into the product.

• If the product has been exposed to rain or water.

• If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

• If the product has been dropped or damaged in any way.

• When the product exhibits a distinct change in performance - this indicates a need for service.

■ Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

■ Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

■ Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

CAUTION
RISK OF
ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO REDUCE THE RISK OF
ELECTRIC SHOCK, DO NOT
REMOVE COVER (OR BACK).
NO USER-SERVICEABLE
PARTS INSIDE.
REFER SERVICING TO
QUALIFIED SERVICE
PERSONNEL.

SA 1965

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

SA 1966

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.
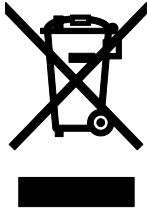
This symbol [crossed-out wheeled bin WEEE Annex IV] indicates separate collection of waste electrical and electronic equipment in the EU countries.
Please do not throw the equipment into the domestic refuse.
Please use the return and collection systems available in your country for the disposal of this product.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification or Declaration of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

FOR UNITED STATES USERS:
INFORMATION
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.

USER-INSTALLER
CAUTION:
Your authority to operate this FCC verified equipment could be voided if you make changes or modifications not expressly approved by the party responsible for compliance to Part 15 of the FCC rules.

BEFORE YOU USE

- Be sure to use the AC adapter.
- The supplied AC adapter is designed for exclusive use with this product. Do not use it with other products.
- Do not press the panel strongly by finger or sharp objects. This can cause damage or malfunction.
- Be careful not to pinch your finger when you move the monitor.
- A protective sheet is attached to the surface of the touchscreen. Remove it before you use the product.
- The AC adapter appropriate for the country where it is used is supplied with the product. If the product was sold in Japan, use the AC adapter sold with the product with 100 VAC and 50 or 60 Hz.
- When storing the product, do not leave it under direct sunlight or by heaters. It may be discolored, deformed, or damaged.
- Do not place the product in any humid, dusty, salt bearing wind, or vibrating locations.
- Use it under the following environmental conditions:
  Temperature : 0℃～ 40℃　Humidity : 30%～ 85%(No condensation)
- Do not use the product in an environment where the temperature of the product becomes too hot, such as under direct sunlight or by heaters. The product will automatically stop the operation to protect the battery when the internal temperature reaches 65℃.
- Use a soft, dry cloth for cleaning. Do not use any volatile solvent such as thinner or benzene.
- Luminescent and Black Spots
  There may be some pixels that do not properly operate due to the use of CMOS Area Image Sensors made-up of many pixels.
  Though luminescent or black spots may be found on the screen, it is a phenomenon peculiar to the CMOS Area Image Sensors and is not a malfunction.
- Follow the guidelines below to prevent the product from dropping or overturning.
   - Use the product on a stable base, desk, or table. Do not place the product on an unstable base or slanted location.
  - Place or wire the product so as to prevent the cables from being pulled or drawn.
- Do not point the lens directly to the sun. It could degrade the imaging capability.
- Do not look directly into the LED light. If you look directly into it at pointblank range, your eyes may be injured.
- Some type of SD card/USB flash drive can be used.
- Transfer the data from the SD card onto a device such as a PC to save a backup copy. Malfunction of the product or repairs to it may cause the data saved in the SD card to be deleted.
- Disposal of battery
  This product uses Lithium Ion rechargeable and recyclable battery.
  When disposing of the battery, contact the dealer from whom you purchased the product. Do not try to remove the battery by yourself.
- If this product is used for longer than the warranty period, its performance and quality may deteriorate due to the lifetime of its parts. For parts replacement (on chargeable basis), consult the dealer from whom you purchased this product or our branch/office near your location.
- Copyright
  Unless used for personal use, it is prohibited strictly under copyright law to use any photo files without the prior consent of the copyright holder. Even if using for personal use, be careful that there could be a situation where video or audio recording is restricted or illegal.

■ Wireless LAN (WiFi) radio wave

  ・ This product uses 2.4GHz radio waves. This product and the wireless device in this
    product have been certified under the Radio Law. Using this product in countries other
    than the country where you purchased it may infringe the radio wave laws of the
    country where it is used.
  ・ In case of communication problem change location. Depending on the using
    environment (e.g., there are many obstacles) the wireless communication may be
    adversely affected. Especially the wireless communication is not available under the
    following conditions.
   - There are metal and/or concrete between the product and monitor.
  ・ Do not use this product under the following conditions.
   - Near industrial, scientific, and medical devices, such as a pacemaker
   - Near in-plant radio station for mobile equipment identifier (license required and being
     used in factory line; etc.)
   - Near low power wireless base station (license not required)
  ・ Electromagnetic interference caused by using Bluetooth devices
   Bluetooth devices and this product use the same band of frequency (2.4GHz). So using
   these devices in the same area may cause electromagnetic interference and it may cause
   lower communication speed or connection failure.
   Turn off the device which is not currently using if the communication problem occurs.
  ・ There are conditions to be met before using 5GHz wireless LAN outdoor.
■ This product shares a frequency band with a wide range of equipment (e.g. industrial,
  scientific, and medical equipment such as microwave ovens), in-plant radio station for
  mobile equipment identifier (radio stations requiring licenses), and specified low-power
  radio stations (radio stations not requiring licenses) used for factory production lines as
  well as amateur radio stations (radio stations requiring licenses).
  ・ Before use, confirm that no in-plant radio station for mobile equipment identifier and
  specified low-power radio stations or amateur radio stations operate in your vicinity.
  ・ In the event that this equipment causes harmful interference to any in-plant radio
  station for mobile equipment identifier, immediately change frequencies or halt radio
  wave emission and contact the dealer from whom you purchased the product for
  consultation on interference avoidance measures (e.g., partition installation).
  ・ Please contact the dealer from whom you purchased the product if this equipment
  causes harmful interference to any specified low-power radio stations or amateur radio
  stations, or if other problems arise.
■ Connectivity with all wireless LAN (WiFi) compatible devices is not guaranteed.
  Bluetooth and wireless LAN (WiFi) use the same band of frequency. So using them in the
  same area may cause electromagnetic interference and it may cause lower
  communication speed or connection failure.
  Turn off either Bluetooth or wireless LAN (WiFi) if the communication problem occurs.
■ Changing SSID and Key
  ・ We recommend to change the default SSID and Key in order to prevent unauthorized
  use by third parties. The changed SSID and Key can be reset to the factory setting.
■ The contents of this document are subject to change without notice. The latest version is
  available from the following official website:
  https://www.elmousa.com   https://www.elmoeurope.com
■ It is prohibited under copyright law to use or copy any part or the whole of this document
  without our prior written consent.
■ ELMO shall not be liable for any claim for damage or loss of earnings or any claim raised
  by a third person due to the use, malfunction or repair of this product.

HANDLING PRECAUTIONS

The followings are special precautions against mishandling of the product. Pay close attention to them.

①Installation
Do not place the product on an unstable place or slanted surface

②Setting up
When setting up the product, hold the body around the operating panel.
Be careful not to pinch your fingers

③Carrying the product
Carry the product by folding the arm so as not to damage the camera.
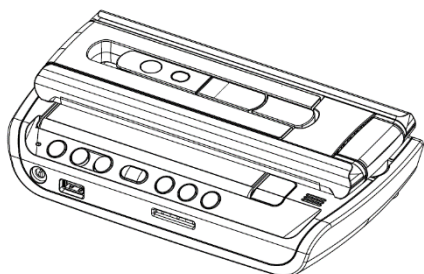Do not carry by holding the arm or camera head.

■ TABLE OF CONTENTS

❶ PREPARATION

◆PACKAGE CONTENTS

The items below are included with the product. If any item is missing, contact the dealer from whom you purchased the product.

MA-1   MO-2
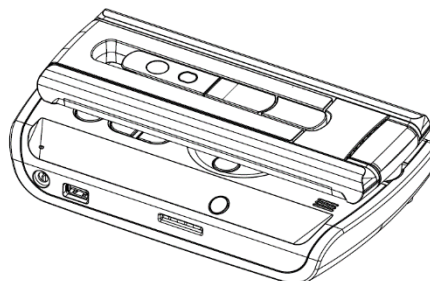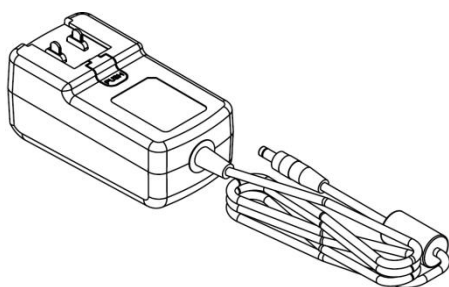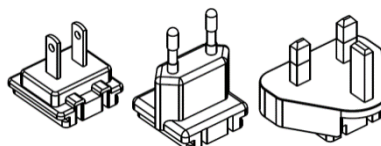
(For Australia)
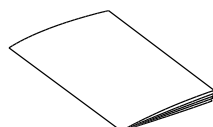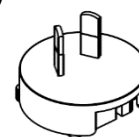
AC adapter
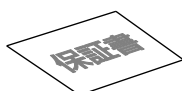
Quick Start Guide   Warranty Card   IMPORTANT SAFEGUARDS
                     (For Japan/ North
                     America only)
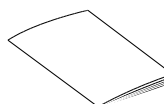
●About AC adapter

Press and slide the plug into the groove of the AC adapter
as shown in the drawing.
※Slide it until it clicks.
※Choose the correct plug according to the outlet.
When removing the plug from the AC adapter, slide and pull
the plug in the opposite direction while pressing the lock button

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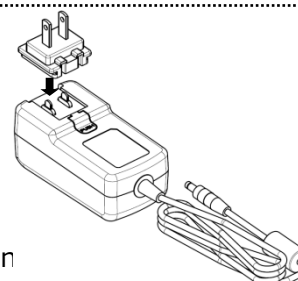
CAUTION

Do not wrap the power cable tightly around the AC adapter while the power cable is connected to the AC adapter. The cable could be damaged (disconnected) or the inside of the cable could be exposed and result in an accident.

❷ BASIC OPERATIONS

◆THE NAME OF EACH PART

MA-1

MO-2

MA-1／MO-2
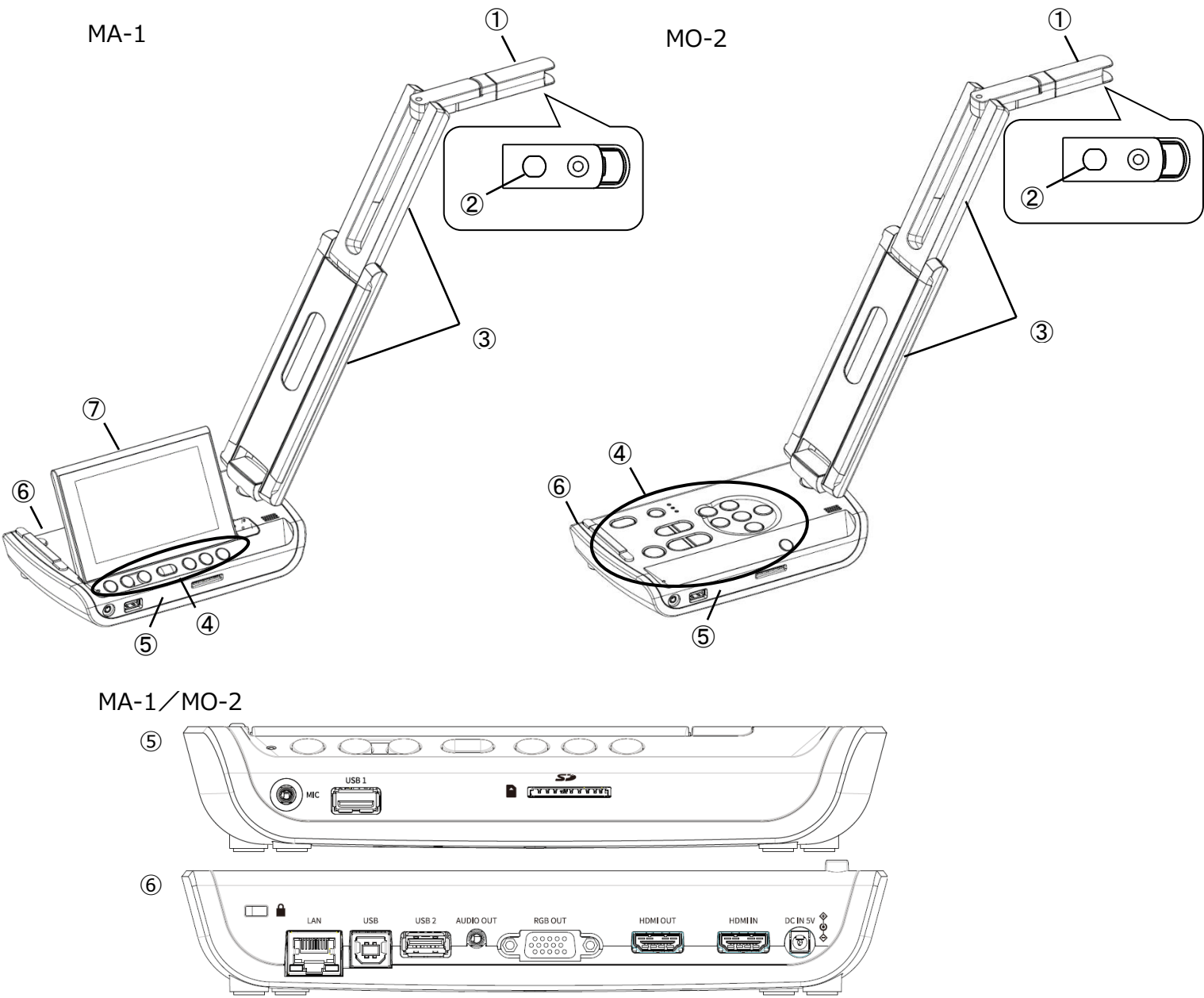
	Name
①	Camera head
②	LED lighting
③	Arm
④	Operating panel
⑤	Front panel
⑥	Rear panel
⑦	Touchscreen

◆OPERATING PANEL

■MA-1
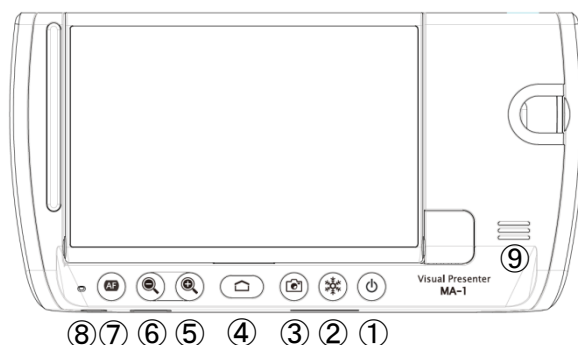
	Name	Description
①	Power	Long press＝To turn on or off the power. Short press＝To enter or cancel the standby mode. <u>Power LED</u> Power on : Turns blue Power off : Turns red（※LED off : when the AC adapter is not connected or when the battery is fully charged）
②	Freeze	To pause the currently displayed image. Press this button again to cancel the pause.
③	Capture	To save the currently displayed image as a still picture.
④	Home	To switch to the Application launcher screen.
⑤	Zoom ＋	To enlarge the image.
⑥	Zoom －	To shrink the image.
⑦	AF	The auto focus works once when this button is pressed.
⑧	Built-in microphone	To record the surrounding audio.
⑨	Speaker	To output the audio.

■MO-2
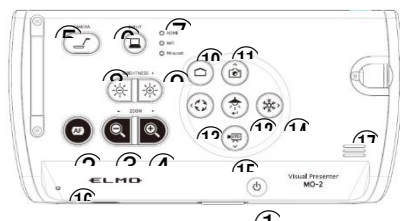
> **NOTE**
>
> Except for when operating the camera image or multi-whiteboard, buttons from 11 to 15 works as the Four-way control keys and the Enter key, as described in (　) in Name field of the table.

	Name	Description
①	Power	Long press＝To turn on or off the power. Short press＝To enter or release the standby mode. <u>Power LED</u> Power on : Turns blue Power off : Turns red（※LED off : when the AC adapter is not connected or when the battery is fully charged）
②	AF	The auto focus works once when this button is pressed. (One-push AF)
③	Zoom ＋	To enlarge the image.
④	Zoom －	To shrink the image.

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⑤	Camera	To display the camera image.
⑥	External input	To switch between the HDMI IN-image and the camera image.
⑦	Status LED	To indicate the status of the external input. (HDMI／WiFi／Miracast)
⑧	Brightness＋	To brighten the image
⑨	Brightness-	To darken the image.
⑩	Home	To switch to the Application launcher screen.
⑪	Capture（Up）	To save the currently displayed image as a still picture.（⇒P.20）
⑫	LED lighting（Enter）	To turn on or turn off the LED lighting.
⑬	Image rotation（Left）	To rotate the camera image.（0°／90°／180°／270°）
⑭	Freeze（Right）	To pause the currently displayed image. Press this button again to cancel the pause.
⑮	Record（Down）	To record the camera image as a video.（⇒P.20）
⑯	Built-in microphone	To record the surrounding audio.
⑰	Speaker	To output the audio.

◆FRONT PANEL
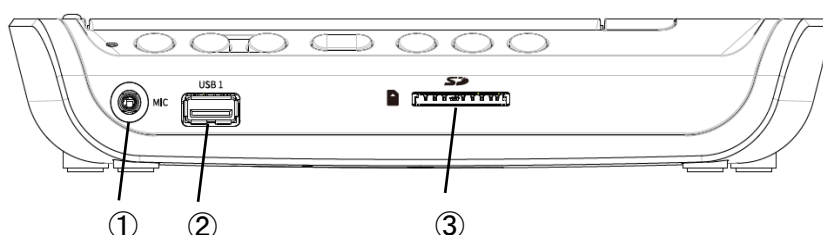
	Name	Description
①	Audio input	To connect the microphone. (The microphone is not included.) ※Use the electret condenser microphone.
②	USB2.0(TypeA)	To connect the mouse, the keyboard or the USB flash drive.
③	SD card	To insert the SD card. (The SD card is not included.)

CAUTION

Connecting the microphone other than the electret condenser microphone (a microphone for a PC) may cause malfunction.

◆REAR PANEL AND CABLE CONNECTION

Bottom

11
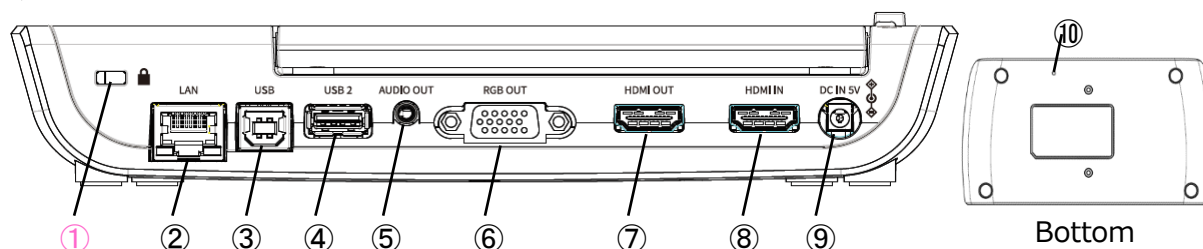
	Name	Description
①	Security slot	To connect a security cable.
②	LAN	To connect the product to the network.
③	USB2.0 (TypeB)	To connect the product to a PC. (Mass storage connection) To playback image files or audio files stored on the SD card.
④	USB2.0 (TypeA)	To connect the mouse, the keyboard or the USB flash drive.
⑤	AUDIO OUT	To output audio. (The Audio cable is not included.)
⑥	RGB OUT	To output RGB images by connecting to a monitor via the RGB cable. (The RGB cable is not included.)
⑦	HDMI OUT (TypeA)	To output digital images by connecting to a monitor via the HDMI cable. (The HDMI cable is not included.)
⑧	HDMI IN (TypeA)	To input HDMI images and audio by connecting the HDMI cable.
⑨	DC IN 5V	To connect the supplied AC adapter.
⑩	Reset	To reset the system and return to the factory settings. Press this button with a sharp object such as a pin.

◆RESOLUTION／FRAME RATE

The output resolution for RGB OUT and HDMI OUT varies according to the respective output settings.

The output setting can be changed from the "Resolution" menu in the Camera Settings. （⇒P.29)

※When setting to "Auto", the output resolution follows the setting of the connected monitor.

※When both HDMI OUT and RGB OUT are used at the same time, HDMI OUT has a priority over RGB OUT.

※When setting to "Auto", the video output is automatically set to 480p if there is no corresponding resolution setting available for the connected monitor.

※Default setting : Auto

RGB	HDMI
Auto	Auto
1920x1080@60	1920x1080@60
1280x720@60	1280x720@60
UXGA	UXGA
XGA	XGA

◆HDMI PASS-THROUGH (DISPLAYING THE EXTERNAL INPUT IMAGE)

The image being input to the HDMI IN port can be output from the HDMI OUT port. The product will indicate as shown below that the image currently displayed on the monitor is the image being input to the HDMI IN port.

MA-1

A message "Now displaying HDMI IN image" will be displayed on the touchscreen.

MO-2

The status will be indicated by the Status LED.

Status	LED
HDMI Pass-Through	Blue
HDMI MO-2 out	Off

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◆LIMIT OF OUTPUT RESOLUTION

■SIMULTANEOUS OUTPUT SPECIFICATION

Priority	Usecase	HDMI/RGB	UVC	Miracast	Touchscreen	Still picture	Video	Aspect ratio
1	HDMI	1080p60 (1920x1080) / 720p60 (1920x1080)	Not connected	(1280x720)	800x480 (1920x1080)	1920x1080 (1920x1080)	1080p (1920x1080)	16:9 4:3
		UXGA (1600x1200) / XGA (1024x768)		(1280x720)	800x480 (1600x1200)	1600x1200 (1600x1200)	UXGA (1600x1200)	4:3
2	UVC	Not connected	1920x1080 MJPEG 1920x1080 YUY2	(1280x720)	800x480 (1920x1080)	1920x1080 (1920x1080)	1080p (1920x1080) 720p (1920x1080)	16:9 4:3
			1280x720 MJPEG 1280x720 YUY2	(1280x720)	800x480 (1280x720)	1280x720 (1280x720)	720p (1280x720)	16:9 4:3
			1600x1200 MJPEG 1600x1200 YUY2	(1280x720)	800x480 (1600x1200)	1600x1200 (1600x1200)	UXGA (1600x1200)	4:3
			1024x768 MJPEG 1024x768 YUY2	(1280x720)	800x480 (1024x768)	1024x768 (1024x768)	XGA (1024x768)	4:3
			640x480 MJPEG 640x480 YUY2	(1280x720)	800x480 (640x480)	640x480 (640x480)	VGA (640x480)	4:3
3	Miracast	Not connected	Not connected	(1280x720)	800x480 (1920x1080)	1920x1080 (1920x1080)	1080p (1920x1080) 720p (1920x1080)	16:9 4:3
4	Touchscreen	Not connected	Not connected	Not connected	800x480 (1920x1080)	1920x1080 (1920x1080)	1080p (1920x1080) 720p (1920x1080)	16:9 4:3

※Resolution inside (   ) indicates the actual resolution.
※The HDMI signal and the RGB signal will be output simultaneously.
※The HDMI signal and the UVC signal will not be output simultaneously.
（※The HDMI signal has a priority over the UVC signal.）

■Limit of UVC
UVC streaming is possible only when the Camera app is running.
UVC streaming is not possible when the camera image is not displayed, such as in the Whiteboard mode.
It is not possible to move from the Camera app to other mode in which the camera image is not displayed.

■Limit of Miracast
There is no limit concerning Miracast. The UVC signal and the HDMI signal can be output at the same time.

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❸ PREPARATION AND CONNECTION

◆SETTING UP

STEP1. Raise the camera head while holding the operating panel.
STEP2. Raise the arm as indicated by an arrow.
STEP3. Raise the camera head. Set it horizontally.
STEP4. Raise the touchscreen monitor as indicated by an arrow. (For MA-1 only)
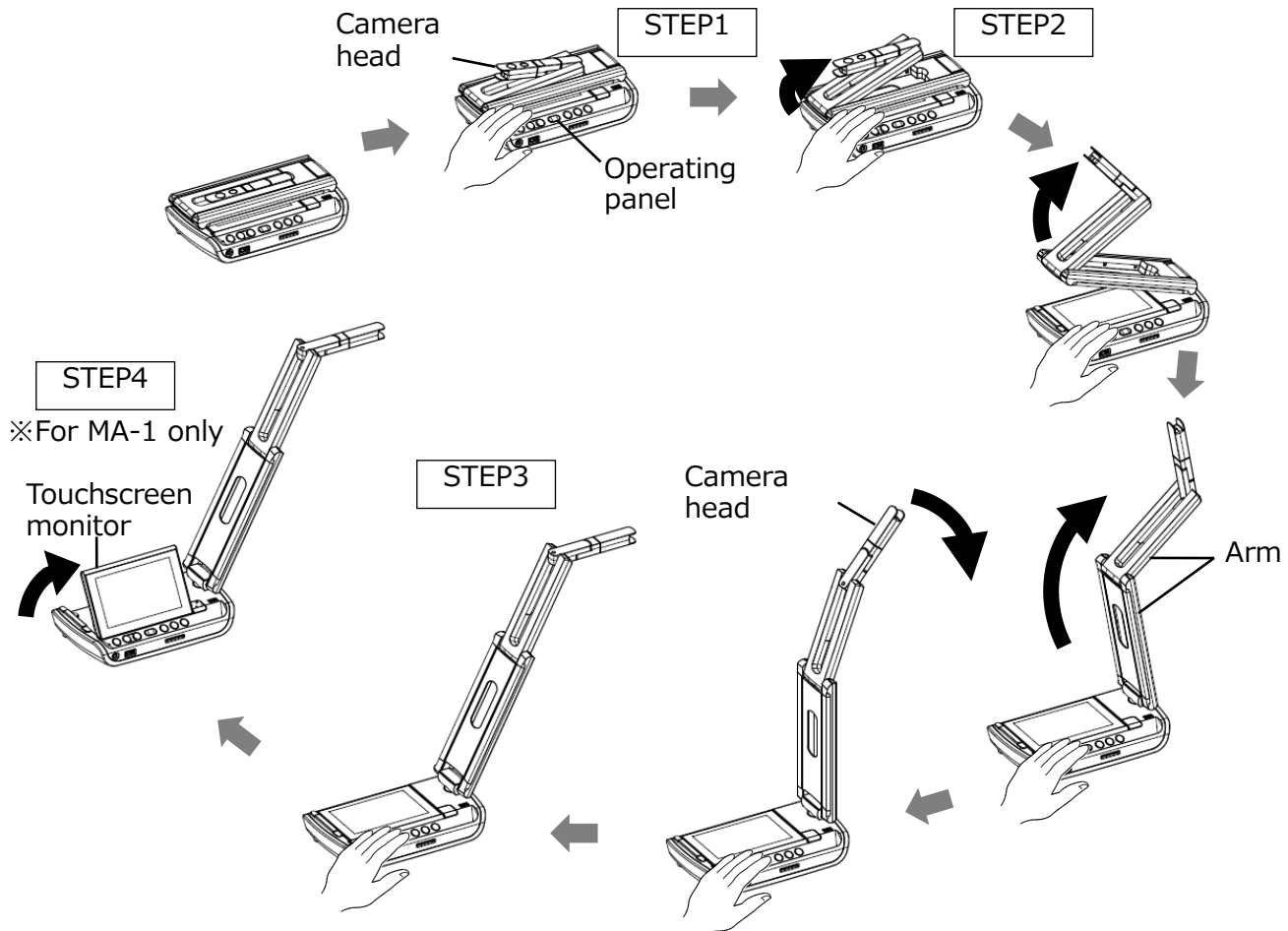
STEP5. Rotate the camera head according to the shooting direction.
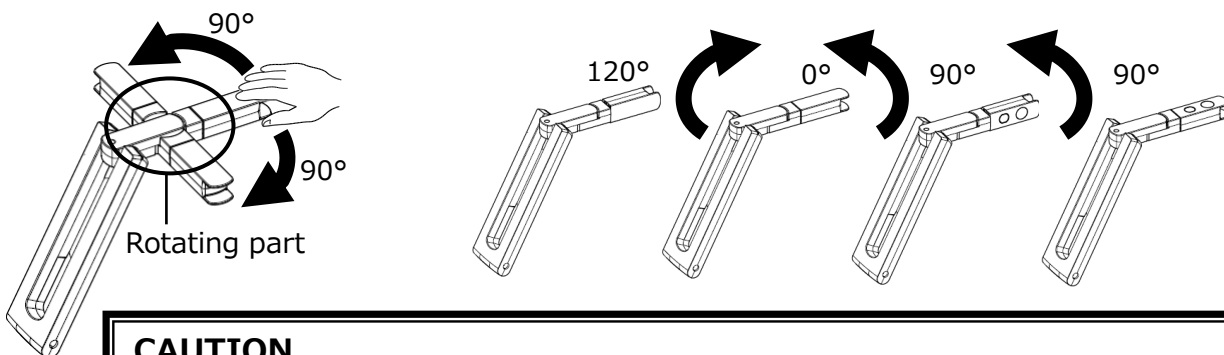
CAUTION

・Be careful not to pinch your fingers when moving the arm.
・Do not hold the arm or camera head when carrying the product.
・Be careful not to give an impact to the camera head.
・This product uses static electricity sensitive components.
  In order to avoid malfunction from static electricity, hold the edge of the camera head
  to rotate the camera head.
  Do not touch the rotating part.

◆MOVING PARTS OF THE PRODUCT

This product can be moved as shown below.

350°

CAUTION
Be careful not to let the top of the camera head hit the camera arm.

90°

90°

270°

90°
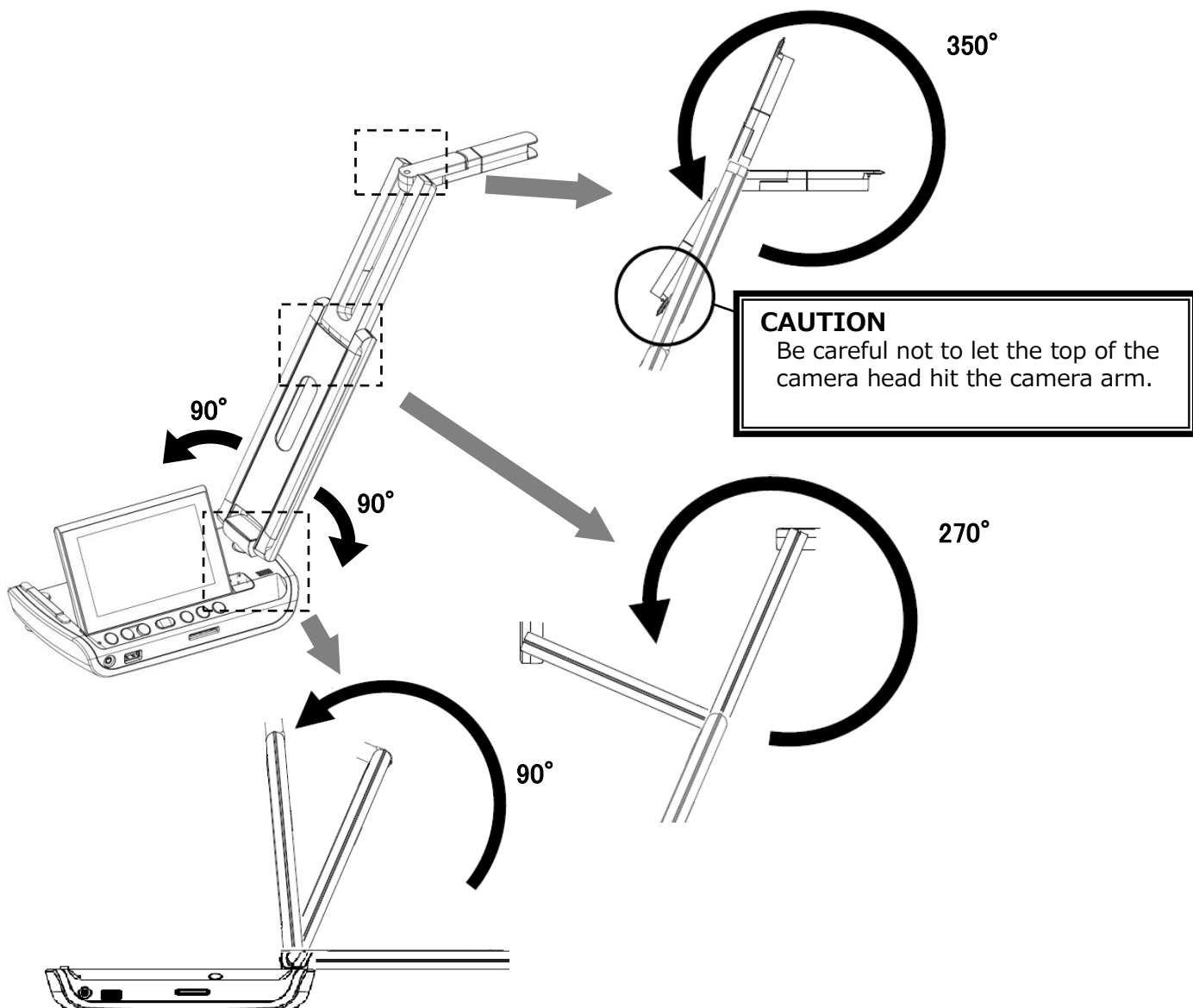
Touchscreen monitor
(For MA-1 only)

90°
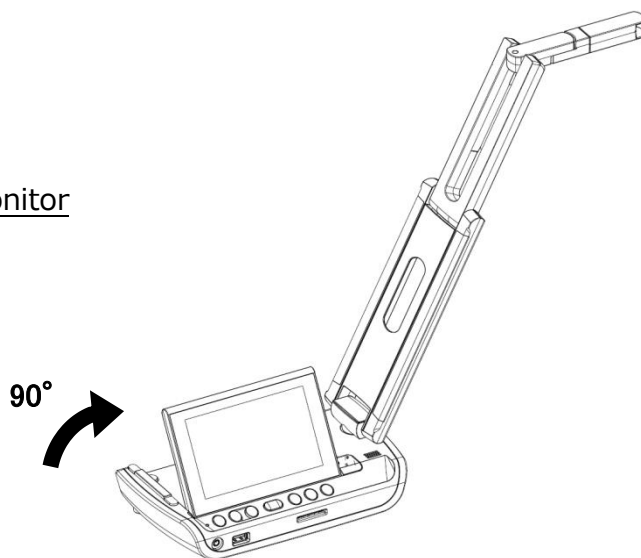
◆CONNECTING TO A PROJECTOR OR MONITOR
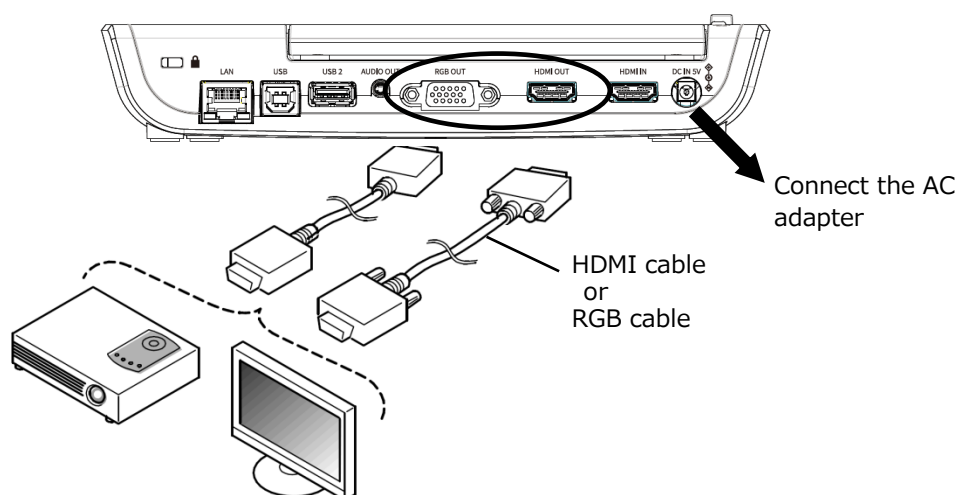
1. Connect the product to a projector or monitor with the HDMI cable or the RGB cable.
2. Connect the supplied AC adapter to [⬚]. Then connect the plug to a wall outlet.
3. Long press the Power button to turn on the product. (Power LED : blue)

◆CONNECTING TO A PC

The product is compliant with UVC (USB video class) standard. You can transfer the image via USB.
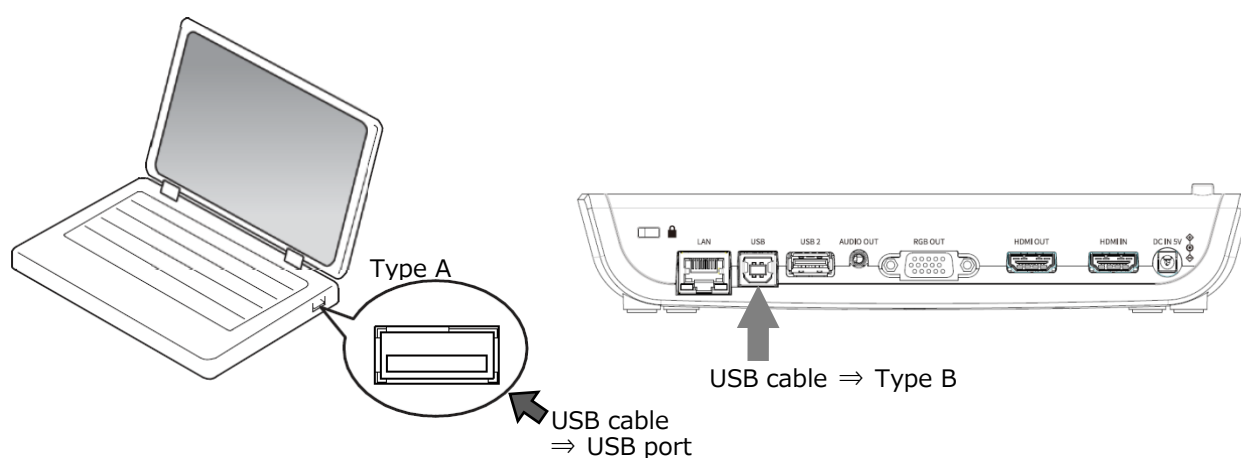
1. Connect the typeB terminal of the USB cable to [⬚] connector in the back of the product.
2. Connect the typeA terminal of the USB cable to the USB port of a running PC.
3. Turn on the product. (Power LED : blue)

CAUTION
　・This product does not support USB power supply. Be sure to supply power by
　　connecting the AC adapter to a wall outlet.
　・When using the USB cable, no video will be output from the RGB/HDMI ports.
　・The frame rate may be decreased depending on the PC used.

---

❹ USING THE PRODUCT
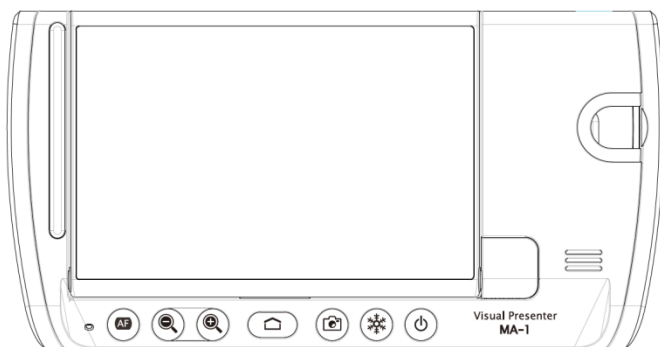
MA-1   MO-2
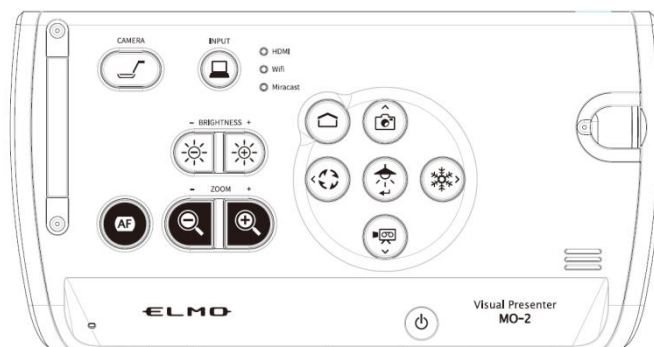
◆TURNING ON OR OFF THE POWER

Connect the AC adapter to the product. Connect the AC adapter to a wall outlet.

Long press the Power button [⏻] to turn on the power.

When the Power button [⏻] is long pressed again while the power is on, the power will go off.

※The color of the Power LED changes to blue from red after the power is on.

※When the Power button is short pressed while the power is on, the product will enter the standby mode. The standby mode will be cancelled when the Power button is short pressed again.

※The functions of the product will be off or paused in standby mode.
   (LED lighting, touchscreen, HDMI, RGB, External input pass-through, audio output)

※The Destination select screen will be displayed over the camera image when the power is turned on for the first time. Select the country where the product is being used.

※(The Destination select screen will also be displayed when the power is turned on after the initialization is performed.)

   ※The product can be turned on without connecting to a wall outlet when the battery is fully charged.

POWER LED STATUS

Model	Status	AC adapter	Charging status	LED		Image output			
						HDMI/RGB	Touchscreen	USB	Miracast
MA-1	Power OFF	Not connected	-	Off		×			
		Connected	Charging	On	Red				
			Fully charged	Off					
	Power ON	Not connected	-	On	Blue	○	○	○	○
		Connected	Charging	On	Blue	○	○	○	○
			Fully charged	On	Blue	○	○	○	○
	Standby	Not connected	-	On	Blue	×			
		Connected	Charging	On	Blue				
			Fully charged	On	Blue				
MO-2	Power	Not	-	Off		×			

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OFF	connected								
	Connected	Charging	On	Red					
		Fully charged	Off						
Power ON	Not connected	-	On	Blue	○	-	○	○
	Connected	Charging	On	Blue	○	-	○	○
		Fully charged	On	Blue	○	-	○	○
Standby	Not connected	-	On	Blue	×	-	×	×
	Connected	Charging	On	Blue	×	-	×	×
		Fully charged	On	Blue	×	-	×	×

※The image can be displayed after the power is turned on without connecting the AC adapter when the battery is fully charged.

◆ ADJUSTING THE SIZE

The size of the image can be adjusted using [$\ominus$ / $\oplus$] buttons on the operating panel.

$\oplus$: To enlarge the camera image.

$\ominus$: To shrink the camera image.

> NOTE
>
> ・The maximum zoom ratio is 16x (digital zoom). The image quality will be degraded when using the digital zoom.
> ・The zoom ratio can also be adjusted by performing a pinch gesture on the touchscreen.
>   Enlarge : Pinch out＝ Spread the distance between two fingers
>   Shrink : Pinch in＝ Shorten the distance between two fingers

◆ADJUSTING THE BRIGHTNESS

MA-1

The Brightness adjustment slider [▬▬] will be displayed when the Brightness icon [☀] in the Menu area is tapped.
The brightness of the image can be adjusted by moving the slider left and right.

The sub menu will be closed when outside area of the Brightness adjustment slider is tapped.

※Brightness adjustment slider : 7 levels（-3～+3）
※Default value : 0

Brightness adjustment slider

MO-2

The brightness of the image can be adjusted
using [☼ / ☼] buttons on the operating panel.

◆ADJUSTING THE FOCUS

（MA-1／MO-2）
Press the AF button [🔘] on the operating panel to automatically focus on the subject.

◆PAUSING THE IMAGE

Pressing the Freeze button [❄] on the operating panel to pause the camera image.
Press the button again to restart.
※The Freeze icon will be displayed in the Status area during freeze.

※Long press ⇒ To perform the Automatic Deskew function.
(The product will automatically detect the skew angle of the document such as a printing paper and a textbook in the shooting area and correct it to fit the screen.) （⇒ P.45）
※If the product is turned off during freeze, the setting will not be saved the next time the product is turned on.

Status	Icon
Live	－
Freeze	❄

◆ROTATING THE IMAGE

MA-1
Tap the Image rotation icon [🔄] in the Menu area to rotate the image.
The image will rotate by 90° each time the icon is tapped. （0°／90°／180°／270°）

　※The rotation angle can be selected between 90° and 180°. (⇒P.29 Camera settings "Image rotation angle".)
　※The camera image with annotation does not rotate.
　※Default value : 0
　※The Image rotation icon will be displayed in the Status area during image rotation.

The image can also be rotated by performing a pinch gesture on the touchscreen
Rotating two fingers on the touchscreen will rotate the image in the same direction.

Rotation status	Icon
0°	－
90°	🔄90
180°	🔄180
270°	🔄270

MO-2
Press the Image rotation button [🔄] to rotate the image.
The image will rotate by 90° each time the button is pressed. （0°／90°／180°／270°）
※The rotation angle can be changed from the menu.

◆TURNING ON OR OFF THE LED LIGHTING

MA-1
Tap the LED lighting icon [ ] in the Menu area to turn on the LED lighting.
(ON:)
Tapping the icon again will turn off the LED lighting.

MO-2
Press the LED lighting button [ ] to turn on the LED lighting.
Pressing the button again will turn off the LED lighting.

CAUTION
- To take shots of people, turn off the LED lighting.
- Make sure that the light from the LED lighting does not shine directly into your eyes.
- This product is equipped with a high-brightness LED. You can safely use it to light up the subject. The brightness will gradually decrease with long-term use. This is not a malfunction but a characteristic of the LED.
- Do not touch the LED lighting while it is on as it may become very hot.

◆CAPTURING STILL PICTURES

The camera image can be captured at the set resolution. (Captured still pictures will be saved as JPEG file in the recording media.)
　※The annotation on the image can also be saved.
　※The image capture can be performed on any image displayed.

MA-1
Press the Capture button [ ] on the operating panel or tap the Capture icon [ ] in the Menu area on the touchscreen to capture the camera image.

※To temporarily change the destination for captured still pictures, long press the button or icon. The sub menu will be displayed and you can change the destination.
The image capture will be performed once the destination is changed.

MO-2
Press the Capture button [ ] on the operating panel to capture the camera image.

※To temporarily change the destination for captured still pictures, long press the button. The sub menu will be displayed and you can change the destination.
The image capture will be performed once the destination is changed.

Captured still pictures can be saved in the following destination: Google Drive / SD card / USB flash drive / internal storage
(Active devices will be displayed as destination.)

◆RECORDING VIDEOS

The camera image and the added annotations can be recorded as video.
　※The recording will be performed at the set recording quality. (⇒P.29 Camera settings "Recording quality".)

MA-1
Press the Record icon [ ] in the Menu area to start the recording of the camera image.
To stop the recording, press the icon again. (Recording:)
　※To temporarily change the destination for recorded videos, long press the button or icon.

MO-2
Press the Record button [ ] on the operating panel to start the recording of the camera image.
To stop the recording, press the button again.
　※To temporarily change the destination for recorded videos, long press the button or icon.
　※To switch the image source to the image being input to HDMI IN, press the External input button.

Recorded videos can be saved in the following destination: Google Drive / SD card / USB flash drive / internal storage

Recording status

Not recording	----
Recording	◼️📹

NOTE

No matter whether the destination storage is external or internal, recorded videos will be saved with the following file name:
　MOV_record date_record time（MOV_yyyyMMdd_hhmmss_fff.mp4）

◆SELECTING THE IMAGE SOURCE

The source of the image to be displayed can be switched easily.

MA-1
Camera image :
Press the Home button [⌂] to open the Application launcher screen. Then tap the Document camera icon [⬛].

Images being input to HDMI IN :
Press the Home button [⌂] to open the Application launcher screen. Then tap the External input select icon [⬛].

Images saved in the SD card or the USB flash drive :
Press the Home button [⌂] to open the Application launcher screen. Then tap the Gallery icon [▶] to display a list of content items.

MO-2
A display device needs to be connected to the product to check the switched image source.

Camera image :
Press the Home button [⌂] to open the Application launcher screen. Then click the Document camera icon [⬛].

Images being input to HDMI IN :
Press the Home button [⌂] to open the Application launcher screen. Then click the External input select icon [⬛].

Images saved in the SD card or USB flash drive :
Press the Home button [⌂] to open the Application launcher screen. Then click the Gallery icon [▶] to display a list of content items.

❺ CONFIGURING THE SETTINGS

Various settings of the product can be configured by using the menu (texts and icons) displayed on the touchscreen (for MA-1) or a display device (for MO-2). (MA-1 = touch operation, MO-2 = operation using the mouse connected to the USB port.)
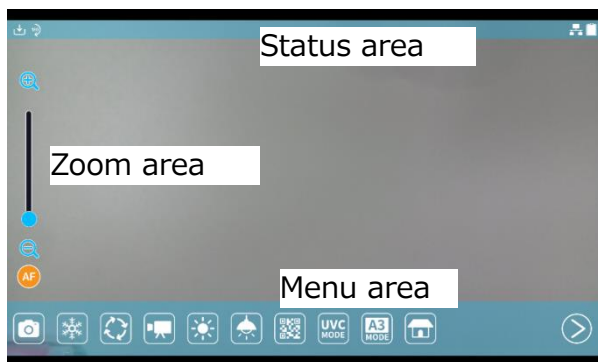
◆START SCREEN

At start up, the camera image will be displayed full screen. Press the left tab or the right tab to display the Annotation menu icon. (The same Annotation menu icon will be displayed no matter which tab is pressed. Use the tab you like according to the subject.)

Home screen

Document camera screen

Left tab

Right tab

Tab
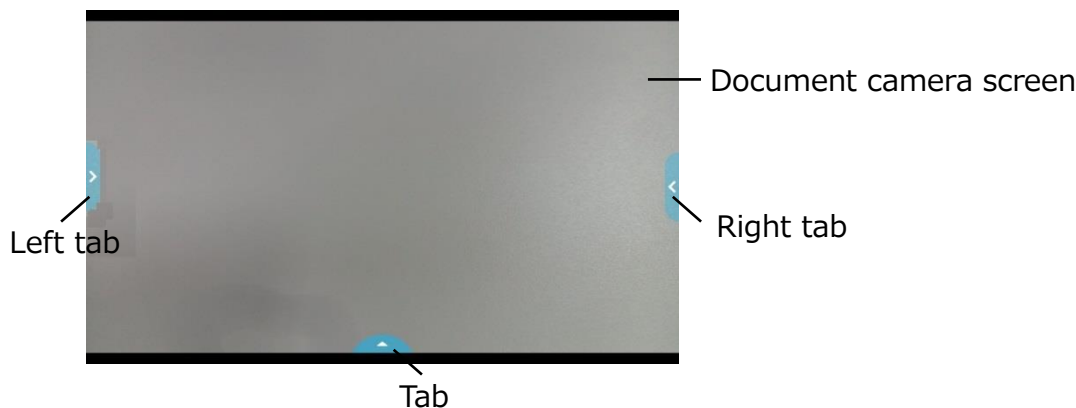
Flick from bottom to top or tap the tab.

Status area

Zoom area

Menu area

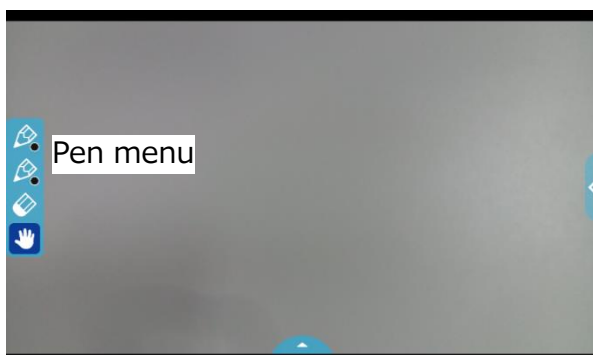The Menu area, the Status area and the Zoom area will be displayed.
Press the Home button on the operating panel to open the Application launcher screen.
 (⇒P.23)
If you want to open other app after start-up, select the app from the Application launcher screen.
The Menu area can be hidden by swiping it down. (The Annotation screen will be displayed.)

Annotation screen

Pen menu

The Pen menu will be displayed either at the left-end or the right-end. Select the Pen to perform the annotation on the Multi-board area.
※The bottom menu will not appear while the Pen menu is displayed. Close the Pen menu to display the bottom menu.

For details, refer to "◆DESCRIPTIONS OF EACH MENU" (⇒P.26)

◆HOW TO CONFIGURE THE SETTINGS

MA-1
Press the Home button [△] on the operating panel to open the Application launcher screen. Select the item to operate.

MO-2
Press the Home button [△] on the operating panel to open the Application launcher screen.
Move the cursor by using the Four-way control buttons as shown to the right. Press the LED lighting button to execute.
Press the Home button [△] to return.

Up（Still picture）

Left
（Image rotation）

Right
（Freeze）

Enter
（LED lighting）

Down（Record）
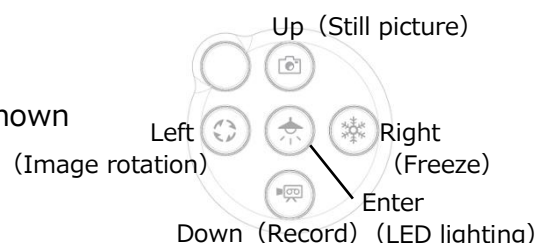
The installed apps will be displayed in the Application launcher screen.
You can select a desired app to launch.
You can hide or display apps from the Application launcher screen.

■Application launcher screen
The icon of the installed app will be added to the list of installed apps.
(Max. 14 icons. Icons will be displayed in the order in which they are added.)
※ If the number of apps becomes large, the icons will be added to the bottom and cannot be displayed in one screen. To view such icons, scroll down the screen.
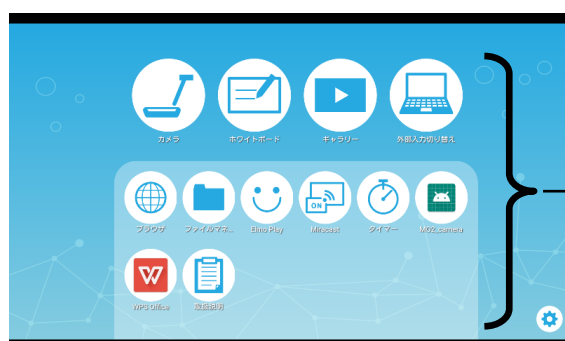
Installed application software

| App. name	Function	Reference
Camera	To display the camera image.	⇒P.22
Whiteboard	To display the last-used whiteboard on the Multi-whiteboard screen. (In case that the Whiteboard app has not been used before, a new whiteboard will be created.)	⇒P.28
Gallery	To display a list of content items on the Multi-whiteboard screen. Files such as still pictures, videos, PDF files and Excel files stored in the internal storage, SD card or USB flash drive can be opened.	⇒P.33
External input select	To switch between the camera image and the HDMI IN image.	⇒P.21
ELMO Play	To access the portal run by ELMO. Apps on the portal can be downloaded.	⇒P.44
Miracast	To connect a device which supports Miracast.	⇒P.42
Timer	To sound an alarm at a set time.	⇒P.43
Browser (Chrome)	To start the browser to access the Internet. （The network configuration needs to be completed in advance.）	⇒P.40

File manager	To open folders of the internal storage, SD card or USB flash drive.	⇒P.44
Digital textbook	To access the server for the digital textbook to open the digital textbook.	⇒P.37
Configuration	To display the Configuration screen.	⇒P.29

■How to uninstall the installed application software
Long press the icon of the app you want to uninstall to display the Trash can icon. Drag and drop the selected icon onto the Trash can icon to delete the app or hide the icon.
※Icons of the pre-installed apps will be hidden.
※ To re-display the hidden icon, press the Recover icon displayed above the Configuration icon at the bottom right of the screen.


Long press
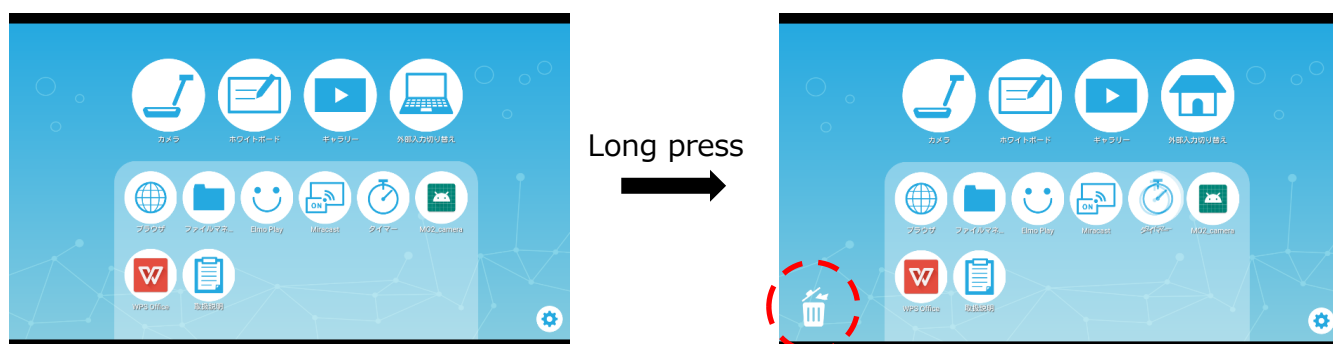
■Status area
The status of the camera will be displayed with icons.

These icons will always be displayed.

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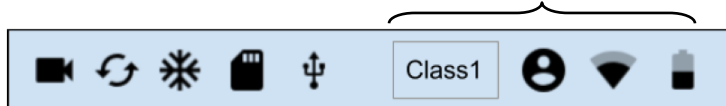
| Icon	Name	Function
Class1	Class	To display the class name selected by a logged-in user. (This icon does not appear when a user is not logged in.)
	Account	To display the account. ※When this icon is pressed, the Login screen for "G Suite for Education" will be displayed.
	WiFi	To display the WiFi status.
	Battery	To display the battery level and the charging status.（⇒P.40）
	LAN	This icon will be displayed when the LAN cable is connected.
	SD card	This icon will be displayed when the recording destination is set to SD card.
	USB host	This icon will be displayed when the writing destination is set to USB flash drive.
	Freeze	This icon will be displayed during freeze.
	Image rotation	This icon will be displayed during image rotation.
	Recording	This icon will be displayed during recording.
	Capture	This icon will be displayed when capturing a still picture.
	Uploading	This icon will be displayed when the recording destination is set to Cloud.
	Speaker mute	This icon will be displayed when the speaker is muted.
	Mic mute	This icon will be displayed when the microphone is muted. (This icon will not be displayed when the microphone is on.)
	Miracast	This icon will be displayed during Miracast communication.

■Zoom area

The Zoom area will be displayed when displaying the Document
camera image or the selected content item.

The Zoom slider and the AF button will be displayed.
　※When a picture is inserted in the Multi-whiteboard Screen,
　the inserted picture will be displayed with the Zoom slider.
　※The position of the Zoom area will change left and right.
　※The Zoom area does not appear during video playback as
　no zoom operation can be performed during video playback.
Zoom slider: Adjust the zoom by moving the round tab up and down.
AF button : Press once.（One-push）
　　　　※The AF button will be displayed only when the camera image is displayed.
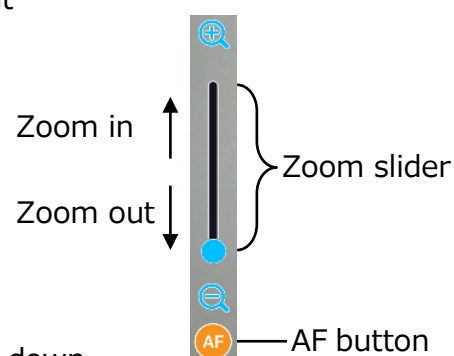
◆DESCRIPTIONS OF EACH MENU

<u>Pen menu for annotation</u>

When the Arrow icon is selected in the Home screen, the Pen menu, the Eraser menu and the Hand tool menu will be displayed. (⇒See "START SCREEN" in page 22.)

Select the menu you want to use.

Press or long press the menu to display the sub menu. You can change the type of Pen or Eraser from the sub menu.

※The selected icon will be highlighted. (Background: Dark blue)

※Performing a capture operation or recording operation during annotation will record the image with all added annotations.

Sub menu

Pen

Eraser

Hand tool
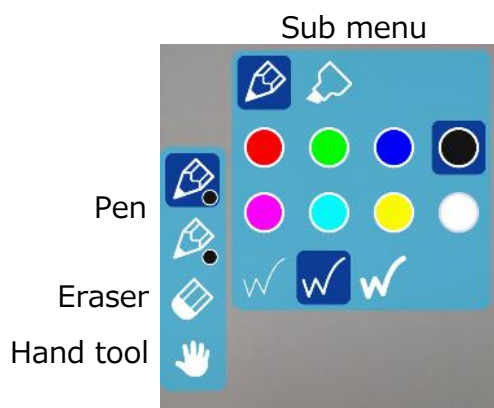
Pen		
Type	Icon	Function
Pen		To draw a line.
Highlighter		To draw a line with opacity 50%.
Pen color		To draw a red line.
		To draw a green line.
		To draw a blue line.
		To draw a black line.
		To draw a magenta line.
		To draw a cyan line.
		To draw a yellow line.
		To draw a white smoke line.
Thickness		To draw a thin line.
		To draw a middle thickness line. (Default setting)
		To draw a thick line. (Default setting for Highlighter)

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| Eraser		
Type	Icon	Function
Eraser		To delete a line drawn by Pen or Highlighter. If you need to erase a part of the line, press on the line to be deleted or move a finger along the line.
Delete all		To delete all the lines that are drawn on the screen.
		The Eraser menu will change after performing "Delete all". To cancel the last "Delete all" action and recover deleted lines. (Only lines deleted by the last action can be recovered.)
※After deleting the selected line, the Eraser becomes deselected and the last selected Pen becomes selected again.		
Hand tool		
Hand tool		To move the display area by dragging when the image is enlarged. ※When displaying the camera image, this function is available only when the USB sync mode is disabled. The display area cannot be moved when the USB sync mode is enabled.

Multi-whiteboard select area

This area will always be displayed when the menu is displayed in the Whiteboard screen. （⇒P.23)

Screen thumbnails in the Camera image select screen and the Content item playback screen will be displayed.

By selecting the thumbnail, you can switch between screens in the Multi-whiteboard area. Press the "Add new board" button to add a new whiteboard.

Delete board

Add new board

Multi-whiteboard select area
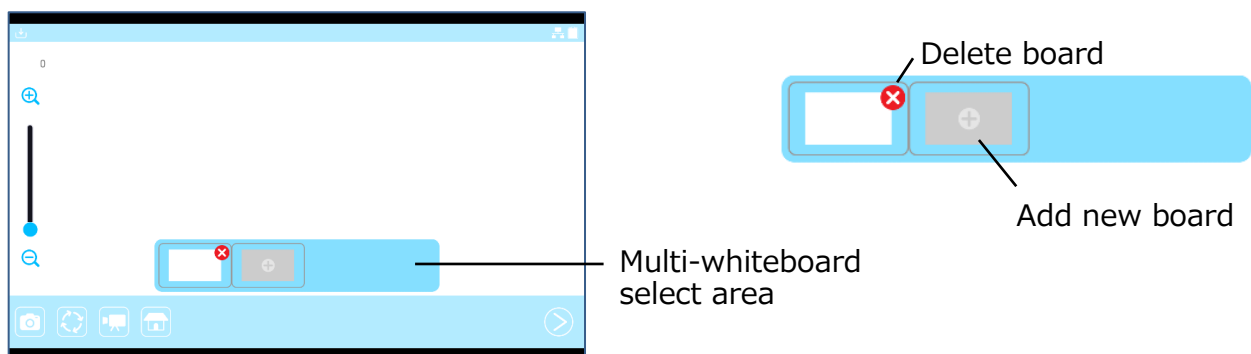
※The selected whiteboard is indicated by the cursor.
※Press the "Delete" button [X] to delete the whiteboard.
Be careful: No confirmation message will be displayed.

Menu area

The Menu area will be displayed by swiping a finger inward from outside the screen or by clicking the tab at the bottom center of the screen.
The Menu area will be hidden by swiping a finger from inside the screen to the outside.
※There are sub menus for some menu items. The sub menu will be displayed by long pressing the menu item or by pressing the menu item.

Icon	Main menu	Sub menu	Function
	Capture	-	To capture the camera image and save it as a still picture.
		○(Long press)	To select the destination media.
	Freeze ※1	-	To pause or restart the camera image.
	Image rotation	-	To rotate the camera image. （0°／90°／180°／270°）
	Record	-	To record a video to the specified media.
		○(Long press)	To select the destination media.
	Brightness ※1	○(Short press)	To display the Brightness adjustment menu. The brightness can be adjusted by moving the Brightness adjustment slider.
	LED lighting ※1	-	To turn on or turn off the LED lighting.
	QR code reader ※1	-	To enter the QR code reader mode.（⇒P.32）
	Home	-	To display the Application launcher screen.（⇒P.23）
	Menu position change	-	To change the position of the menu between left and right.

※1 The Freeze menu, the Brightness menu, the QR code reader menu and the LED lighting menu will only be displayed on the camera image.

Whiteboard
A white blank screen will be displayed on the Multi-whiteboard screen.
Select the Pen icon to open the Pen menu to start drawing.
For details, refer to "Pen menu for annotation" (⇒P.26)

The drawings (annotations) added to each whiteboard will be maintained while the Camera app is running.
 ※A new whiteboard will be displayed when the product is turned on for the first time. From next time, the last used whiteboard will be displayed when the product is turned on.

・MA-1
Add drawings or annotations on the touchscreen. The drawn content will also be displayed on the connected display device.
Drawings or annotations can also be added on the connected display device by using the mouse.

・MO-2
Add drawings or annotations on the connected display device by using the mouse.

When the Whiteboard app is opened from the Application launcher screen, you can return to the Application launcher screen with the Home button [🏠].
When the List of content items screen is displayed from the Gallery app, you can return

to the Gallery with the Return icon.

Screen transitions by using gesture（for MA-1's touchscreen only）
When there are multiple whiteboards, you can switch between whiteboards by using gesture.
Swipe the screen left and right while touching more than 3 points at the same time to change the whiteboard.
　Swipe to the right : Board⑤→Board④→Board③→Board②→Board①
　Swipe to the left : Board①→Board②→Board③→Board④→Board⑤

Configuration
Select the Configuration ico[⚙️　] in the Application launcher screen. The Configuration screen will be displayed and you can change various settings. (⇒P.23)

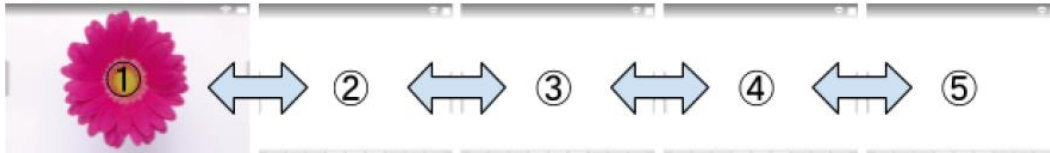| Camera settings			
⊡	Resolution	Auto	To set the output resolution.
		FullHD 1920x1080	
		HD 1280x720	
		UXGA 1600x1200	
		XGA 1024x768	
⠿	RGB mode	Disable	The image will be displayed with normal angle of view (16:9).
		Enable	The image will be displayed with full angle of view (4:3).
🔔	Speaker volume	0~15	To adjust the volume of the speaker.
📺	Flicker mode	50Hz	If flickering occurs due to indoor lighting, set this mode correctly according to the area where the product is being used.
		60Hz	
		Auto	
		Off	
🖼	Recording quality	High	To set the recording quality of the video.
		Normal	
		Low	
↻	Rotation angle	90	To set the rotation angle during image rotation.
		180	
📶	Automatic Miracast connection	Enable	To set whether to perform the Miracast connection automatically.（⇒P.42）
		Disable	
📖	Digital textbook	Server URL	To set the URL of the server for the digital textbook.

Camera quality			
☀	Brightness	0〜6	The brightness of the camera image can be changed. It does not follow the brightness change of the shooting environment.
◑	White balance	Auto	The white balance adjustment constantly works. To ensure a more natural color, the white balance is adjusted automatically according to the shooting environment.
		Cloudy	The white balance is adjusted for shooting indoor.
		Sunny	The white balance is adjusted for shooting outdoor.
		Fluorescent light	The white balance is adjusted for shooting under fluorescent lighting.
		Incandescent light	The white balance is adjusted for shooting under incandescent lighting.
		Shade	The white balance is adjusted for shooting in dark environment.

Product information		
▬	Application Version	To display the application version of the product.
🤖	Android Version	To display the Android version of the product.
📖	License	To display the license information of the product.
📅	Serial number	To display the serial number of the product.
ⓘ	Product version	To display the version information of the product.

■System settings

The System settings menu will be displayed when the System settings icon [⚙] is pressed.

To return to the previous screen, press either the Return icon [←] or press the Home button [⌂] on the operating panel.

Icon	Name	Selection item		Function
WiFi and network				
▼	Wi-Fi	ON	-	A list of network will be displayed. Select the SSID for the network to be connected. Enter the password as requested.
		OFF	-	To disable the WiFi connection.
○	Data usage	Overview	-	To display the data usage. (Today / al)
		Wi-Fi	-	To display the data usage. (Date can be specified.)
✤	Eth	dhcp	ON	A unique IP address will be assigned automatically.
			OFF	To set the IP address manually. The following settings can be configured if this item is set to OFF.
		static ip	-	To set the IP address manually.
		gate way	-	The following information can be entered if this item is selected.
		mask	-	※Operation procedure for MO-2:
		dns	-	⇒Enter the information using the keyboard displayed on the touchscreen or

				on the connected display monitor. For typing the keyboard on the connected display, use the mouse.
Device				
	Storage	Total capacity of internal storage	Available capacity	To display the total capacity for each item.
			Apps (Data and content item)	
			Still picture and video	
			Audio (Music, ringtone, podcast etc.)	
			Download	
			Cache data	
			Other	
			Mount the SD card	To insert the SD card.
	Battery	-	-	To reduce the battery consumption by restricting certain function or to check the battery usage.
	App	-	-	To display a list of downloaded apps, list of running apps, RAM usage and list of all apps.

User settings				
	Language and input	Language	Japanese	To set the display language.
			English	
			German	
			French	
			Chinese	
		Spelling correction	Language	To select the language subject to the Spelling correction.
		Word list	-	To display a list of words added to the user dictionary. Words can be added with the "Add" icon.
		Current keyboard	-	To display the currently selected keyboard. Type of the keyboard and input method can be selected.
		Gboard	Language	To select the language to be used for the keyboard and its layout.
			Settings	To configure details of keys, layout and operation method.
			Theme	To change the design of the Input screen.
			Text correction	To configure how to display word suggestions during text input or to configure how to perform the spelling correction to the word being input.
			Glide typing	To configure details of Glide typing which a user can input words by sliding a finger across the letters.
			Word list	To add words or shortcut letters to the word list.

			Search	To configure whether to display suggestions for Google search during typing.
			Advanced settings	To configure the display of pictograms on the keyboard or to configure whether to display app icons in the launcher.
		Pointer speed	-	To set the pointer speed using the slider.
	Backup and reset	DRM reset	-	To delete all DRM license. The confirmation window will be displayed. Select "OK" to delete.
		Data initialization	-	To delete all data stored in the internal storage, such as Google account, system data, app data and setting information. The confirmation window will be displayed. Select "Reset" to initialize the system.

System				
	Date and time	Automatic date and time setting	To select the source to receive time information. ・Use the time received from the network. ・Use the time received from GPS. ・OFF ※If this item is set to OFF, the Date setting and Time setting will be enabled.	
		Date setting	To select a date from the calendar displayed.	
		Time setting	To select a time from the clock displayed.	
		Timezone	To select the area where the product is used from the list of timezone names.	
		24-hour display	To select the way to display the time.	
		Date format	To select the way to display the date.	

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◆DETAILS OF EACH FUNCTION

■QR code reader
The QR code reader reads the QR code and starts the browser to access the specified URL.

QR code reader mode   →   Start the Chrome browser

Press the QR code reader icon [ ] in the Menu area. The product will enter the QR code reader mode and the camera image will be displayed. （⇒P.28)
Tap the QR code reader icon again to finish the QR code reader mode and move to the Camera image screen.

CAUTION
・Image annotation cannot be performed during the QR code reader mode.
（Added drawings will be hidden during the QR code reader mode.）

◆LIST OF CONTENT ITEMS

A list of all available content items in the active media (such as the SD card, the USB flash drive and the Google Drive) will be displayed. For information about the supported file extensions, refer to "❽SPECIFICATION".

Press the Gallery icon in the Application launcher screen to display the List of content items screen.（⇒P.23）
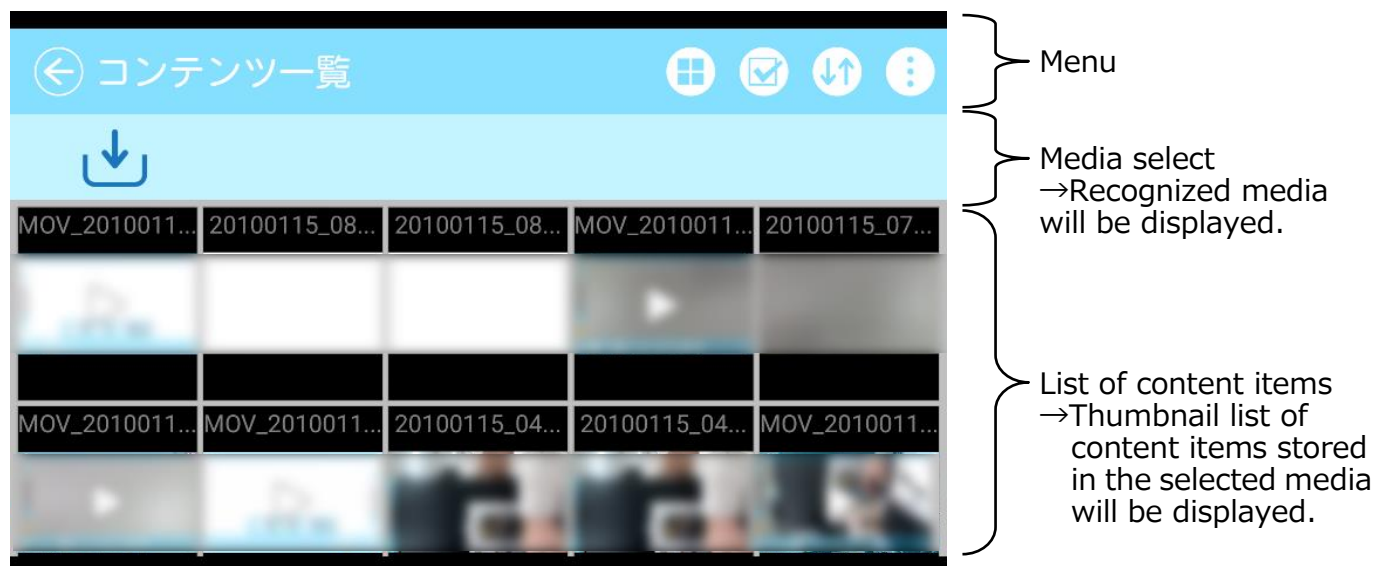
Menu		
Icon	Name	Function
⊞	Split screen	To enter the Split screen select mode. Select the content items to compare.（⇒P.36）
☑	Content item select	To enter the mode that multiple content items can be selected.（⇒ P.34）
↓↑	Change order	To display the sub menu to change the order for displaying content items. [Date / Name]
⋮	Sub menu	To display each function indicated by icons or recognized storage by text.
⊙	Return	To return to the last screen before the List of content items screen.
Media select		
Icon	Name	Function
📱	Internal storage	To display the content items stored in the internal storage in the List of content items screen.
SD	SD card	To display the content items stored in the SD card in the List of content items screen.
🔌	USB flash drive	To display the content items stored in the USB flash drive in the List of content items screen.

The thumbnails of the content items of the selected media will be displayed in the List of content items screen.

If the selected content items cannot be displayed in one screen, scroll the screen by flicking it to see all the content items.

■Content item select

Select a content item by pressing the Content item select menu in the List of content items screen or by long pressing a content item in the List of content items screen.
The menu will change in the Content items select mode.
Press a content item to select.
（A check mark will be displayed at the top right of the selected thumbnail.）

Menu

Media select
→Recognized media
will be displayed.

List of content items
→Check mark will be
displayed over the
selected content
item.

Menu		
Icon	Name	Function
	Share	This icon will be displayed when a content item is selected. Pressing this icon will display a dialog to copy the selected content item to other media or share it with someone. （⇒P.41）
	Trash can	This icon will be displayed when a content item is selected. Pressing this icon will display a dialog "Delete a file". Select "OK" to delete the file completely.
	Sub menu	To display each function indicated by icons or recognized storage by text.
	Return	To return to the List of content items screen.

◆PLAYBACK OF CONTENT ITEM

Pressing a thumbnail in the List of content items screen will display the Content item playback screen to play the selected content item. The Content item playback screen will be displayed on the Multi-whiteboard screen.

■Still picture

To display the Still picture playback screen.
The selected still picture will be displayed in 16:9. You can add annotations to the picture.

※If the aspect ratio of the selected picture is not 16:9, it will be displayed according to the following rules ① or ②.

①For landscape picture, horizontal position will be adjusted and black bars will appear on the top and bottom of the screen.

②For portrait picture, vertical position will be adjusted and black bars will appear on the left and right of the screen.

■Video
To display the Video playback screen. (The paused image of the video will be displayed.)
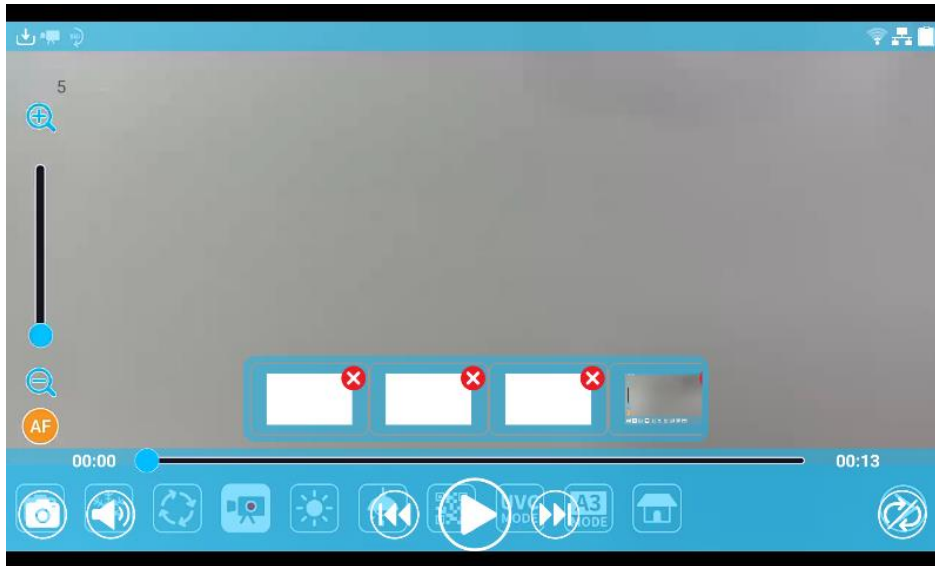
Icon	Name	Function
	Play	To start video playback. This icon will change to the Pause icon during playback.
	Seek bar	To change the playback position as desired by moving this bar.
00:00	Playback time	To display the elapse time during playback.
00:13	Maximum playback time	To display the maximum playback time of the selected video.
	Previous video	To move to the previous video.
	Next video	To move to the next video.
	Capture	To insert a page in the Multi-whiteboard select area to set the displayed image as the background image.
	Speaker	To adjust the speaker volume by using the Volume adjustment bar.
	Repeat	To playback the selected video repeatedly. ON or OFF can be set to each selected video.

■Displaying digital documents
Digital documents such as PDF, Word, Excel and PowerPoint files stored in the memory device such as the internal storage, the SD card and the USB flash drive can also be viewed.
From the List of content items screen, press a desired digital document. The selected document will be displayed by the app installed in the product.

◆SPLIT SCREEN

Press the Split screen icon in the List of content items screen to display the Split screen select screen. Max. 4 selected content items can be displayed in a single screen. (Video content cannot be selected.)

■Split screen select mode
Select the content items to display in the split screen by pressing the thumbnail of the content items. (Number is displayed on the selected thumbnail. To cancel the selection, press the thumbnail again.)
Also, the Camera icon will be added to the left top of the screen. If this icon is pressed, the Camera image will be displayed in the split screen.

※If the Media select icon is pressed while a content item is selected, the list of content items of the selected recording media will be displayed, while the content item selection is maintained.

Check menu

Media select
→Recognized media will be displayed.

List of content items
→Thumbnail list of content items stored in the media will be displayed.

Press the check mark of the Check menu. The selected content items will be displayed in the split screen.

※The check mark does not appear when no content item is selected.
※To cancel the selection and return to the Content item select screen, press the Home button [🏠].

■Displaying the split screen
The selected content items will be displayed in the order selected in the Split screen select mode. (In the order (①～④) as shown below.)
※A portrait content item will be displayed after being adjusted to fit the 16:9 aspect ratio. (⇒P.34"◆PLAYBACK OF CONTENT ITEM : ■Still picture")
※To cancel the split screen, press the Home button [🏠].

4-split screen
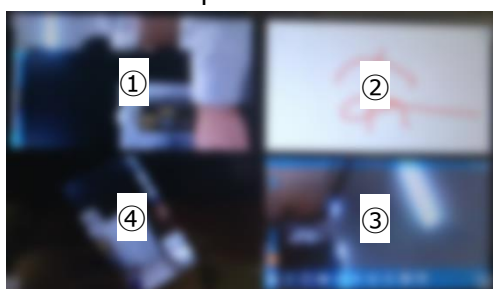
2-split screen
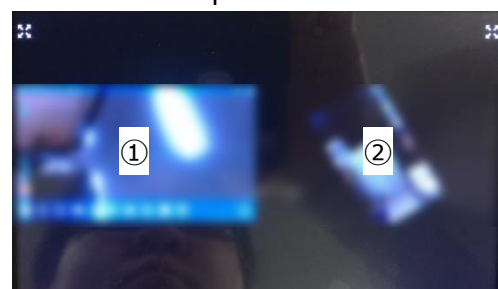
■Maximizing the split screen
In the Split screen view, the Maximize icon [] will be displayed at the corner of each split screen.
Press this icon to maximize the selected split screen.
Press this icon again to return to the previous size.

■Changing screen positions
You can change the positon of the content items in the Split screen view.
Long press the content item and move the selected content item by drag and drop action.

◆DIGITAL TEXTBOOK

You can access the Digital textbook server to read the digital textbook.
Select "Digital textbook" from the Camera settings menu to display the Server URL input screen. Enter the information by using the keyboard. （⇒P.29）
※The Digital textbook app does not appear on the Application launcher screen if the Digital textbook setting is not set. The Digital textbook app will be displayed after the Digital textbook setting is set.

❻ ADVANCED OPERATIONS

◆USING SD CARD OR USB FLASH DRIVE

By using this product, you can save or record still pictures or videos of the camera image onto the SD card, the USB flash drive, the internal storage or the Google Drive. The saved or recorded still pictures or videos can be displayed.

Insert the external memory device (the SD card or the USB flash drive) into the SD slot or the USB connector in the front panel before using it.
After the external memory device (the SD card or the USB flash drive) is properly recognized by the product, an icon of the external device will be displayed in the Status area.

USB flash drive   SD card
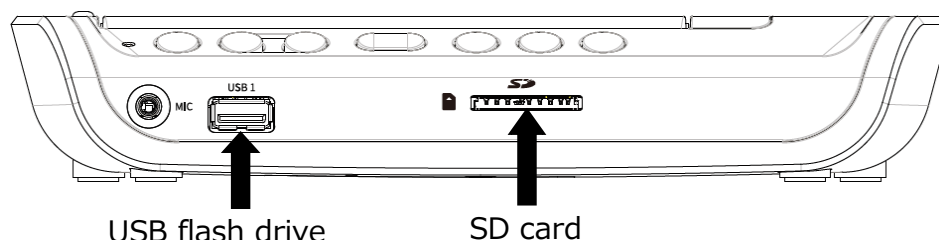
About SD card
Supported format : up to FAT32,SDHC

Status	Icon
Not inserted	–
Properly inserted (When SD is set as the destination to save content)	
Unable to use	

Status	Icon
Not inserted	–
Properly inserted (When USB is set as the destination to save content)	

About USB flash drive
Supported format : up to FAT32
 USB flash drive cannot be formatted with the product.

> **NOTE**
> ・About SD card
> -SDXC card cannot be used.
> -For video recording, we recommend to use the SD card.
> -We recommend to use the SD card class 6 or higher.
> ・About USB flash drive
> -Use the USB flash drive up to 32GB.
> ・It may take some time to recognize the SD card or the USB flash drive when the SD card or the USB flash drive is inserted. It may take some time to record an image file to the SD card or the USB flash drive.
> ・Do not remove the SD card or the USB flash drive while the product is accessing it for recording or playback or operation.

◆USING BY CONNECTING TO A PC WITH USB CABLE

This product is compliant with UVC (USB video class) and troublesome installing of a driver is not required.
You can transfer the camera image to a PC by simply connecting the USB cable to the USB port of the PC.
（Operation is not guaranteed on all application software.）

CAUTION

- Do not disconnect or connect the USB cable during the operation of the operating panel. By doing so may result in malfunction.
- We recommend to use the USB cable compliant with USB2.0.
- While distributing the image from the USB, it is not possible to record the camera image, display thumbnails or playback of still image or video.

TypeA terminal

USB cable
⇒ To TypeB terminal

USB cable
⇒ To USB port
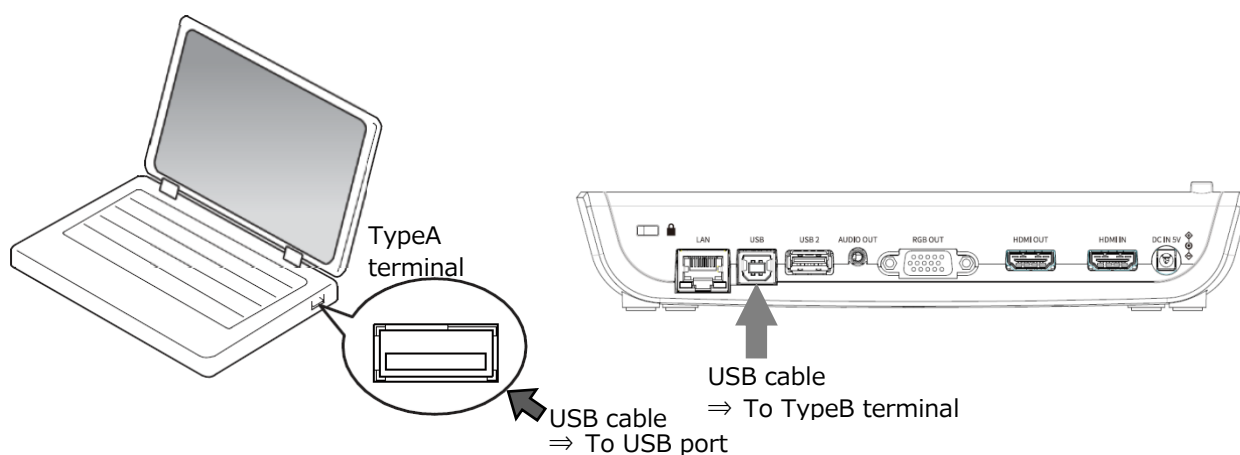
NOTE

・The product will be restarted after the setting is changed. Wait till the restart completes.
・Depending on the USB environment of the PC or due to the influences of surrounding devices, the image transfer may be interrupted.
・Operation is not guaranteed in all environment.

◆CONNECTING TO NETWORK

This product can be connected to the network via WiFi or Ethernet. When the WiFi setting is set at power-on, the product will connect to the network automatically.

  ※WiFi and Ethernet cannot be used at the same time.
    →Ethernet has a priority over WiFi.
      (When the product is connected to Ethernet while it is connected to WiFi, the WiFi connection will be disconnected automatically.

For MO-2 only
The connection status will be indicated by the Status LED during WiFi connection.

Status	LED
WiFi connected	Blue
WiFi connecting	Flash blue
WiFi not connected	Off

Status LED
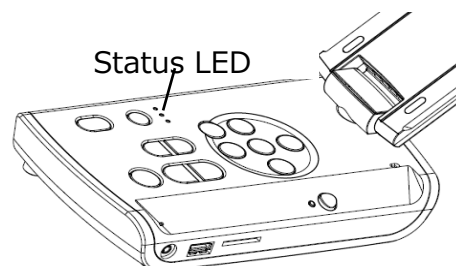
■How to connect to WiFi
Select WiFi[🔻] from the System settings in the Settings menu [⚙].
A list of network will be displayed. Select the SSID and password.
Enter the password using the keyboard.
Press [Connect] to connect to WiFi

◆ABOUT BATTERY

The battery of the product will be charged by using the AC adapter.
You can use the product while charging the battery.

  When power is on : The remaining battery level will be displayed in the Status area.
                    The Charging icon will be displayed during charging.
  When power is off : The status will be indicated by LED. (Fully charged / Charging)

Remaining battery	Icon
Charging	⚡
90% or more	🔋
70% or more	🔋
50% or more	🔋
30% or more	🔋
0% ore more	🔋

・When the product is used for the first time or when the battery level is low, wait for 30seconds after connecting the AC adapter and then press the Power button.

・When the remaining battery level is lower than 30%, the icon to indicate the remaining battery level will always be displayed, even when the Status area is hidden. (The icon will not be displayed during charging.)

・The product will be shut down automatically when the remaining battery level becomes less than 10%. Pay attention to the remaining battery level.

◆USING SHARE MENU

Select the Share menu [ ] from the menu in the Content item select screen to copy the selected content item to other media or share it with someone. (⇒P.34)

Press the Cancel button to return to the list of content items.

Select the media to copy a content item. The Copy screen will be displayed.
Type the file name or select the destination folder.
(Default destination folder: MyDrive)

※Enter the folder name using the virtual keyboard.
※If multiple files are to be copied, you cannot specify the file name.
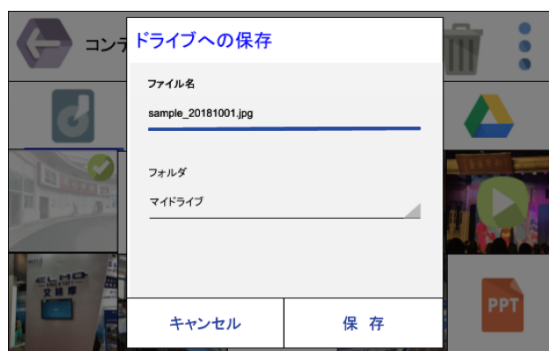
Dialog for specifying the destination folder

Selected folder

Sub folders

Tap the area around the folder to open a dialog for specifying the destination folder.

Select or specify the folder and press "Save".
The selected item will be copied to the specified destination folder with the specified file name.
　※If the entire sub folders cannot be displayed in one screen, scroll the screen by flicking it to view the entire sub folders.

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◆USING MIRACAST

The product can be connected to a device which supports Miracast to perform Miracast output or Miracast input.
By connecting the product to a display device with a receiver attached, you can transmit the image between the product and the display device wirelessly.

　※It is not possible to perform Miracast output and Miracast input at the same time.
　※If either of them is enabled, the other cannot be enabled.

When the Automatic Miracast connection setting is set to "enable", the product will connect the Miracast device automatically after the product is turned on. （⇒P.29）

During Miracast connection, the connection status can be checked with the Status LED.
　（for MO-2 only）

LED	Status
On	Miracast connected
Flash	Miracast connecting
Off	Miracast not connected

■Selecting a device to connect
Before connecting a Miracast device to the product for the first time, you will need to select a device to connect.

①Select Miracast from the Application launcher screen (⇒P.23) .
②A list of available Miracast supporting devices will be displayed.
　※When there is no Miracast device which was connected to the product in the past available near the product, it is not possible to select a device.
③Select a device to connect.
　※If you want to connect the product to a Miracast device automatically at power-on, set the Automatic Miracast setting in the Camera settings to "enable".

■Miracast output
When the Miracast icon in the Application launcher screen （⇒P.23） is tapped, the product will search the Miracast device set in the Connection device select screen and start mirroring automatically.
To finish mirroring, press the Miracast icon again.

When the Connection device selection setting is completed, the product will connect the device automatically.

※In case the connection device is not found during the search, the product will continue the automatic connection process until the device is found, while displaying the camera image.

NOTE

■When the Miracast icon is tapped before the connection device is selected, the Connection device select screen will be displayed automatically.
Then after the connection device is selected, the product will search and connect the device automatically and return to the Miracast image display.

■When no connection device is found after the Miracast icon is taped, an error occurs and the Connection device select screen will be displayed.
Then after the connection device is selected, the product will search again and connect the device automatically and return to the Miracast image display.

■Miracast input
The screen of the Miracast supporting device can be displayed on the screen of the product. (Mirroring)

①Display the Application launcher screen and select Miracast [ ].
②Select "Allow other device to find the product".
③Select the product from the menu of the connected Miracast device after the Connection device search screen is displayed.
④The image of the connected Miracast device will be displayed on the screen of the product once the connection is successfully established.

To finish Mirroring, press the External input button of the product.

◆TIMER

Open the Application launcher screen and select "Timer". (⇒P.23)
You can set the timer at the desired time.
The alarm will sound at the set time.

　※The maximum time that can be set is 99 minutes.
　※The gauge will decrease over time.
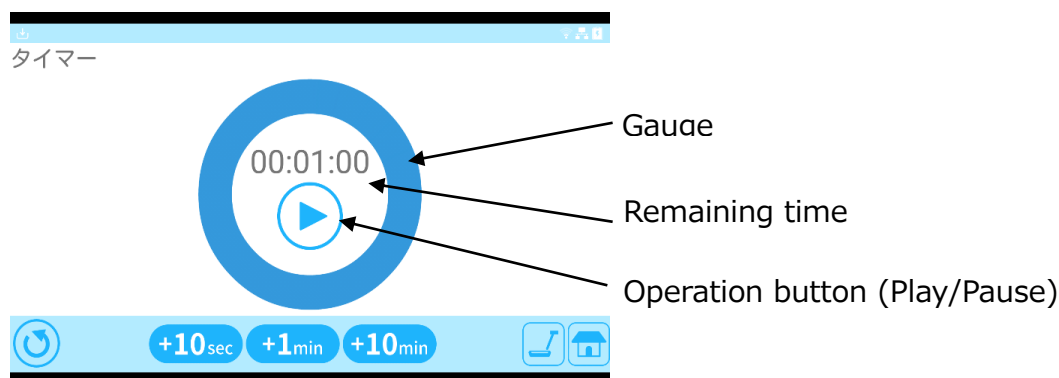
Icon	Name	Function
	Reset	The timer will be reset to [00:00].
+10sec +1min +10min	Time select	To set the time to sound the alarm. Adjust the time by selecting the icon. Time will increase each time the icon is tapped. （+10sec/+1min/+10min）
	Home	To return to the Application launcher screen.
	Document camera	To display the camera image.

＜How to set the timer＞
1. Tap the Time select icon (when using MA-1) or click the Time select icon with the mouse (when using MO-2) to set the time.
2. Press the Operation button (Play). The timer will start counting down and the gauge will decrease.
3. When the set time is elapsed, the timer will sound.

＜How to stop the timer＞
1. Press the Operation button (Pause) to pause the timer.
2. Press the Operation button (Play) again to restart.

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◆ELMO PLAY

You can download the app from the portal run by ELMO.
The selected app will be downloaded and installed automatically, which can be used with the product.
For further information, visit the portal at:

◆USING FILE MANAGER

By selecting the File Manager in the Application launcher screen, you can access the storage devices such as the internal storage, the SD card and the USB flash drive.
You can install the app by inserting the SD card after saving the APK file onto the SD card.
For details about the downloading procedure of the app, refer to "ELMO PLAY".

Select the storage
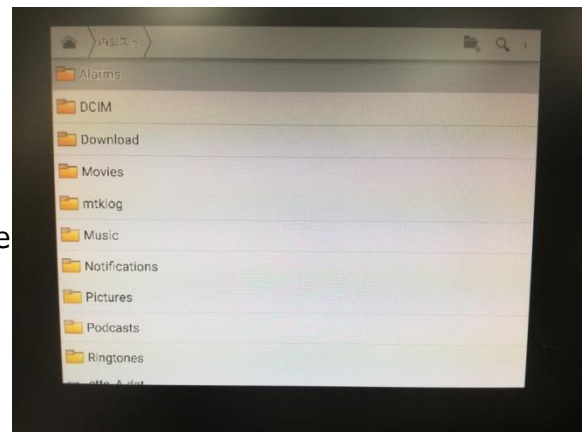
◆DOKO PITA (AUTOMATIC DESKEW FUNCTION)

By using this function the product will automatically detect the skew angle of the document such as a printing paper and a textbook in the shooting area and correct it to fit the screen.

※The image will be rotated, enlarged, reduced or placed in the center.

From 0° to 45°
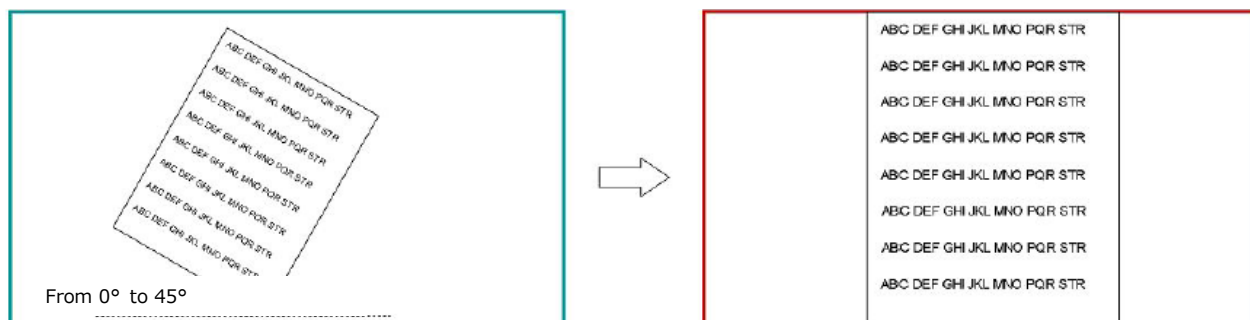
＜Procedure＞
①Place a document in the shooting area.
②Long press the Freeze button.
③Automatic positioning detection will be performed and the detected area will be indicated by a red line.
④Release the Freeze button after the red line is displayed. The document will be displayed straight.

＜How to cancel＞
Press the Freeze button again. The positioning correction will be cancelled and the original image will be displayed.

◆USING WITH WIRELESS TABLET OR PORTABLE IWB (BOTH SOLD SEPARATELY)

By using the Wireless tablet or the Portable IWB (both items sold separately) with the product, you can draw over the camera image or record the drawing process.
Also, you can operate the product (such as zooming in or out) from the Wireless tablet or the Portable IWB.

For details, visit our Official website:

For Wireless tablet (CRA-1)
⇒http://www.elmosolution.co.jp/products/visual/cra_1/

For Portable IWB（CRB-1）
⇒http://www.elmosolution.co.jp/products/visual/crb_1/

❼ LIST OF ERROR MESSAGES

Error item	Error message	Possible cause
SD card	Could not play file.	・The file is broken. ・The file extension is not supported. ・The SD card was removed.
USB flash drive	Could not play file.	・The file is broken. ・The file extension is not supported. ・The USB flash drive was removed.
USB host	USB flash drive cannot be recognized.	・Unknown USB flash drive was connected.
Internal storage	Could not play file.	・The file is broken. ・The file extension is not supported.
Image capture	Could not capture image.	・The SD card or the USB flash drive is not recognized. ・There is a malfunction in the internal storage.
	SD card or USB flash is not inserted.	・There is not enough capacity in the SD card or the USB flash drive.
Video recording	Could not record video.	・The SD card or the USB flash drive is not recognized. ・There is a malfunction in the internal storage.
	Not enough capacity in SD card or USB flash drive.	・There is not enough capacity in the SD card or the USB flash drive. ・The data amount of the destination device reached its limit.
Battery	Battery is low.	・The remaining battery level is low and the battery is not charged.
Playback of content item	Could not play content.	・The content item is not supported. ・The file is broken. ・The file size is too large.
Browser	Not connected to internet.	・The product is not connected to WiFi or LAN.

❽ TROUBLE SHOOTING

◆SYMPTOMS AND CONFIRMATION

Check the following items. If any abnormality is found, consult the dealer from whom you purchased this product or our nearest branch/office.

Symptom	Possible cause/ remedy
No image is displayed.	・ The cable is not correctly connected. ・ The AC adapter is disconnected from the power supply socket of the product or the wall outlet. ・ Zoom is set at the TELE side, displaying only the white or black part of the document. ・ If you turn on the power immediately after turning it off, the product may not start. Wait for several seconds after turning off the power, and then turn it on. ・ The output cable is disconnected. ・ The output setting does not match the output cable connected to the product. Set the correct output setting. ・ Reconnect the AC adapter and the power cable. ・ The display monitor is not turned on. ・ The input source of the display monitor is not set correctly. ・ Reset the product by pressing the Reset button on the bottom of the product.
The output image (resolution) changes automatically.	・ When the HDMI monitor is connected to the product, the output image (resolution) of the product will be automatically changed based on the information from the connected monitor.
The image is out of focus.	・ The document (subject) is too close to the lens. Move the document (subject) slightly away from the lens. ・ Adjust the focus by pressing the AF button on the operating panel.
The image is too dark.	The intensity of the lighting is insufficient. MA-1 : Press the Brightness icon in the Menu area to adjust the brightness by moving the Brightness adjustment slider. MO-2: Press the Brightness button (+) on the operating panel to adjust the brightness. Or press the LED lighting button to turn on the LED lighting. ・ Adjust the brightness from the Camera quality settings.
The image does not move.	・ The "Freeze" function is activated by pressing the Freeze button. Cancel the freeze. MA-1 :

	To cancel the freeze, tap the Freeze icon in the Menu area or press the Freeze button on the operating panel.
	MO-2: Press the Freeze button on the operating panel. ・ Reconnect all the cables.

The image is striped.	・ This may be interference fringes between dots of printed matter and TV scanning lines or CMOS pixels. Changing the shooting range may improve the problem. ・ The image may be distorted when shooting a monitor screen while the live image feed is displayed. ・ Vertical stripes may appear on an LCD projector image. Manually adjusting the dot clock at the projector side may help the problem. ・ Vertical stripes may appear when shooting in dark conditions. Making the shooting environment brighter may reduce the vertical stripes.
The UVC video stream is upside down.	・ Verify that the graphic driver and other device drivers of your PC are the latest version. You can download the latest version of device drivers from the official website of the manufacturer of your PC.
Other image than the camera image overlaps on the UVC video stream.	・ Depending on your software, OS or the connection status, other images than the camera image may be overlapped on the camera image. This can be solved by reconnecting the product or restarting the software.
No UVC video stream is displayed. (An error message appears.)	・ The software may recognize it as error when it takes time to prepare the image output. Restart the product and reconnect it to your PC. Then restart the software.
Fails to output the UVC video stream.	・ Disconnect the USB cable and restart the software. Then connect the USB cable again.
The UVC video stream sometimes freezes.	・ The displayed image may pause for a brief second when the object moves quickly. In that case, adjusting the brightness manually may improve the problem.
There is a distortion of the image.	・ Use a high-spec PC. Also, reducing the resolution or frame rate may improve the distortion of the image.

About the light (LED lighting)

The brightness of the LED lighting will diminish with long-term use. If its brightness has significantly diminished, consult the dealer from whom you purchased this product or our nearest branch/office for replacement (subject to charge).

About long-term usage of this product

Due to the lifetime of its parts, if this product is used for longer than the warranty period, its performance and quality may deteriorate. In this case, we will replace the parts for a charge. Consult the dealer from whom you purchased this product or our nearest branch/office.

❾ SPECIFICATION

■MAIN CAMERA

Item	Specification
Power source	DC5V
Power consumption	14W
Outside dimensions	W：220mm D：115mm H：343mm (When setup)
	W：220mm D：115mm H：57mm (When folded)
Weight	MA-1：Approx.1,100g　MO-2：Approx.950g
Ext. control terminal	USB2.0　type microA × 2
USB	USB2.0　type microB × 1
Lens	F=2.0
Frame rate	60fps（in High frame rate mode at 1080P）
Focus working range	From lens surface：100mm ～ ∞
Focus	Auto（One-push）　※Area：Center fixed
Exposure	Auto (Possible to adjust exposure level)
Image pick-up element	1/3.1 inch CMOS 13,000,000 pixels
Effective pixels	H: 4160, V: 3120
Resolution	H: 1300TVlines or more　V: 1300TVlines or more
Digital zoom	Max. 16x
Imaging area	329mm×439mm（Height：328mm）　4：3

■ILLUMINATION DEVICE

Item	Specification
Illumination	White LED

■FUNCTIONAL SPECIFICATION

Item	Specification
USB	USB 2.0 compliant
Transfer speed	USB2.0 High Speed (480Mbps) ※The actual transfer speed may vary depending on the performance of

		your PC and the status of the USB bus.
WiFi	Radio standard : IEEE802.11 a/b/g/n Communication frequencies : 2.4GHz/ 5GHz
Operating temperature	0℃～+40℃
Humidity	30～85%　(No condensation）

■VIDEO QUALITY

	Resolution	Bit rate	Frame rate
High	1280x720	2M	30
Normal	1280x720	1M	30
Low	1280x720	500K	15

■SUPPORTED MEDIA FORMAT

Extension	Media type	Description
JPG	Still picture	Jpeg file
PNG	Still picture	Png file
BMP	Still picture	Bmp file
MP4	Video	MP4 file
pdf	PDF	PDF file
xlsx,xls	Excel	Excel file
pptx,ppt	PowerPoint	PowerPoint file
docx,doc	Word	Word file

■SETTINGS

Function	Setting item/Setting value	Default setting	Note
Display resolution	Auto/ FHD1920x1080@60/ HD1280x720@60/ UXGA1600x1200/ XGA1024x768	Auto	Appropriate aspect ratio will be set according to the resolution.
Angle of view	16：9 / 4：3	16：9	For UXGA and XGA, fixed to 4：3.
Audio input	0~10 / Mute	5	Automatic selection between built-in microphone and external microphone.
Audio output	0~15 / Mute	5	
Network	IP / gateway / net mask / DNS	-	
Brightness	0~6	3	
White balance	Auto/ Cloudy/ Sunny/ Fluorescent light/ Incandescent light/ Shade	Auto	

Flicker setting	50Hz / 60Hz / Auto / Off	Depending on the destination	Setting value will be maintained.
Recording quality	High / Normal / Low	Normal	
Language	Japanese/ English/ German/ French/ Chinese	To be set at the initial startup	
Automatic Miracast connection	On / Off	On	
Wifi	On / Off	Off	
Rotation angle	90° / 180°	90	

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•This product is designed to be used in industrial environment. If it is used in a residential area or in an adjacent area thereto, harmful interference to radio or television reception may occur.

•Repair parts

Repair parts are the items which are needed to maintain product functionality. The holding period of such repair parts is 5 years after the product discontinuation, which is equal to the repair period we will accept.

・　•Any image, which is obtained by this product, and which can be identified, is considered to be private information. Be forewarned that the person who makes use of such images shall be liable for disclosing of such images.

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