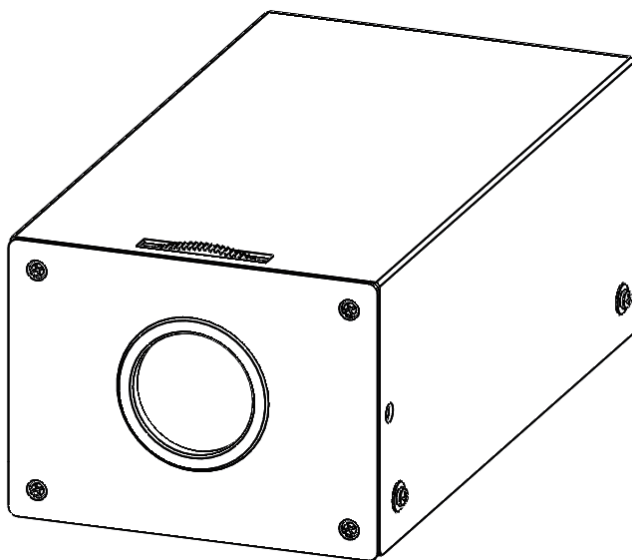




# SSC-9700

## Instruction Manual



Thank you for purchasing this product.

Please read this manual carefully before using to ensure proper use of this product.

Be sure to read "Safety Precautions" in particular to use the product safely.

Please keep the manual at hand after reading and read it when necessary.





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## Safety Notice

### **WARNING**

	<b>Mount this unit to a stable place with sufficient strength.</b>
	<b>Tighten all screws and locking mechanism firmly.</b> If the screws are loose, this unit may fall resulting in injury. Falling from height may lead to serious accident.
	<b>Use at correct power supply and voltage.</b> The rated input voltage of this unit is DC 12 V. Supplying a power beyond the rated value may cause damage to this unit, and it may lead to smoke or fire at the worst. Input a voltage according to the rated voltage of the camera.
	This unit is able to divert lightning conduction to itself and the connecting cables to some extent, but this is not 100 % guaranteed. For installation locations subject to lightning strikes, make sure to apply lightning induction to the connecting cables.

### **CAUTION**

	<b>Avoid rubbing the metal edge.</b> Rubbing too hard may lead to injury.
	<b>If there is any abnormality such as smoke, abnormal noise or foreign object, turn off the power supplied to the camera. Remove the camera and immediately contact the retailer where you purchased the product.</b>
	<b>Do not disassemble or modify. Doing so may impair the functions of the product or cause an electric shock.</b>

# Precautions

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## Storage and Operating Environment

- This unit is intended for indoor use only. Do not use it outdoor.
- Do not shoot extremely bright subjects (such as lighting and sun) for long periods of time. And avoid placing the product in the following locations. Doing so may result in unwanted operation or malfunction.
  - Extremely hot or cold places (Operating temperature: -10 °C to +50 °C [14 °F to 122 °F])
  - Extremely humid places (Operating humidity: 35 %RH to 90 %RH, without condensation)
  - Near strong magnetic field sources such as transformer or motor
  - Near radio wave sources such as transceivers or cellular phones
  - Near TV or radio transmitters that emit strong radio waves
  - Locations affected by reflections from fluorescent lights and window
  - Locations where unstable lighting is used (where flicker occurs)
  - Locations that reflects laser light
  - Near high-voltage lines and railroad tracks
  - Extremely dusty or sandy locations
  - Locations subject to strong vibration or shock, such as inside vehicles or ships
  - Locations exposed to rain or condensation, such as window side.
  - Locations subject to steam or oil, such as kitchens.
  - Special environment such as in combustible atmosphere
  - Locations where radiation, X-rays, salt attack or corrosive gases occur
  - Locations where chemicals are used, such as pools and hot springs
- If this unit and the cable connected to this unit are used in a location where strong radio waves or magnetism are generated (e.g., near a radio, TV, transformer, railroad track, monitor, etc.), noise or beats may appear in the image and change its color.
- Insufficient heat dissipation from this unit may lead to malfunction. To prevent heat buildup, do not block air circulation around this unit. This unit dissipate heat from the surface (side) of the main unit. Do not install this unit at a location where heat is trapped, such as near a wall.
- Do not install this unit at a location exposed to cold air, such as near the air outlet of an air conditioner.
- When using in the following conditions and environments, do contact us and pay attention to safety measures.
  - Use in conditions and environment other than the specifications stated or outdoor.
  - Use for applications that are expected to have a significant impact on people and property and require specific safety.
- This unit is used under various conditions, do perform analysis and testing as necessary before making a decision although the suitability of the device or equipment have been decided by the designer of the device or equipment or the person who decides the specifications. The performance and safety of this device or equipment should be guaranteed by the customer who has determined the compatibility with the device or equipment.
- This unit is not designed and manufactured to be used for controlling devices that directly affect someone's life (\*1) or devices that are involved in one's safety and have a significant impact on the maintenance of public functions (\*2). Do not use for those purposes.
  - \*1 Devices that directly affect someone's life are as follows.
    - Medical equipment such as life support machines and operating room equipment
    - Exhaust gas such as toxic gas, smoke exhaust device
    - Devices that are required to be installed by various laws and regulations such as the fire legislation and building regulations
    - Devices based on the above stated

\*2 Devices that are involved in one's safety and have a significant impact on the maintenance of public functions are as follows.

- Traffic control equipment for aviation, railroads, roads, shipping, etc.
- Equipment such as nuclear power plants
- Devices based on the above stated

## Transportation

- Always turn off the power before moving this unit.
- Handle the unit with care and avoid heavy shock or vibration.

## Maintenance

- Remove dust or dirt on the surface of the lens with a blower (commercially available). Do not use a spray type blower to clean the lens as water droplets may splatter into the lens. Pay careful attention when cleaning the lens.

## Phenomena Specific to CMOS Image Sensors

- The following phenomena that may appear in images are specific to CMOS (complementary metal-oxide semiconductor) image sensors. They do not indicate malfunctions.
  - White Spots  
Although the CMOS image sensors are produced with high-precision technologies, fine white spots may be generated on the screen in rare cases, caused by cosmic rays, etc. This is due to the principle of CMOS image sensors and is not a malfunction. The white spots tend to be seen especially in the following cases:
    - When operating at a high environmental temperature
    - When the shutter speed is slowed down
    - When you have raised the master gain (sensitivity)
  - Aliasing  
When fine patterns, stripes, or lines are shot, they may appear jagged or flicker.

## Others

- For safety and power saving purposes, turn off the system when it will not be used for a long time.
- This unit is a precision instrument, do not subject to strong impact.
- This unit is designed to be used indoor. Be sure to take protective measures such as attaching a protective cover when using it outdoor.
- We recommend that a cable connected to the DC power terminal and RS-485 port be 3 meters or less.
- When installing the lens, take care to prevent dust or dirt from getting inside. Also, be careful not to touch the lens of the infrared cut filter.

## Disclaimer

- We will not be responsible for any inconveniences or disturbances caused in the event of privacy invasion as a result of camera footages of this product.
- We do not accept liability for the damage of recording or storing image and/or the missing opportunity of recording in the case caused by a problem of this unit.
- Before starting an important recording, make sure to take a test recording in order to confirm a normal recording possible.
- We are not liable for any damages caused by earthquakes, fires, acts by third parties, other accidents, by deliberate intention or negligence of the customer, misuse, or use under other abnormal conditions.
- We are not liable for any damages caused by malfunctions due to the use with any connected devices (including image processing boards and lenses) and software that we are not involved in.
- We will not take any responsibility for infringement or damage if violation of privacy occurred due to the camera image of this unit.
- Please note that we are not responsible for any damage to your hardware or software caused by the software provided by us or your own application software.
- We are not liable for any damages caused by not observing the contents in the specification and instruction manual.
- We are not liable for any damages caused by operating methods other than those described in the specification and instruction manual.
- We are not liable for any damages caused by repairs or modifications by the customer or an unauthorized third party (non-designated service shop, etc.).
- In any case, the cost we bear for this product shall be within the price of this product.

## Contents of This Manual

- The specifications and/or appearance of the product are subject to change without prior notice.
- “Carina System” is the registered trademark of Carina System Co., Ltd.
- Other product names are trademarks or registered trademarks of their respective companies.

## Introduction

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This unit is an ultra-sensitive single-panel color camera with a 2.12 million pixel 1/1.8-inch CMOS sensor. Ideal for surveillance or security measures and environmental surveys in low light areas at night for borders, harbors and other special purposes.

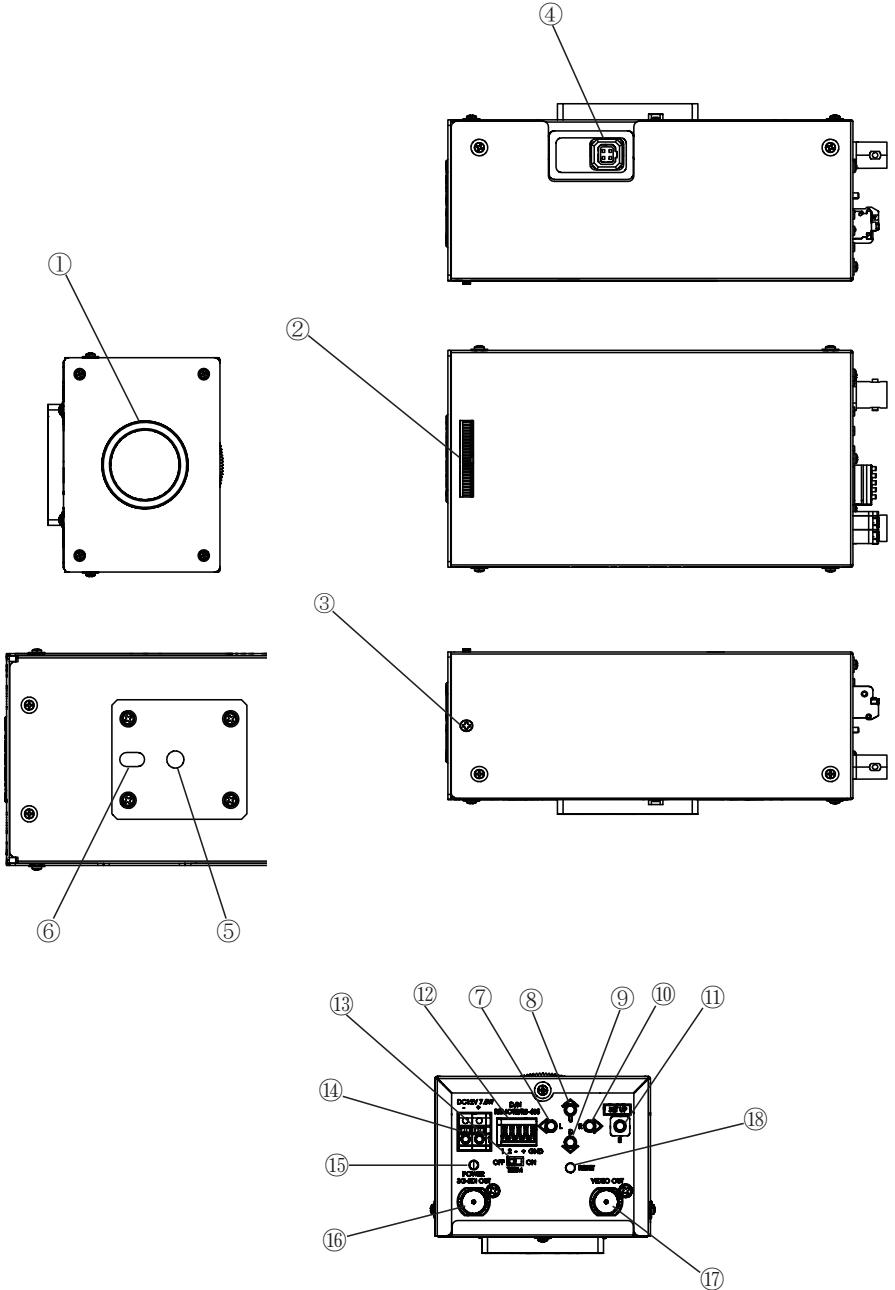
## Features

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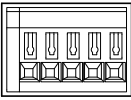
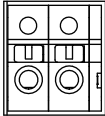
- Enables color imaging with high sensitivity under low-light conditions, down to 0.003 lx.
- Maintains excellent SN ratio even at high-gain settings, with the original 2D/3D noise reduction function.
- Enables recording of clear images under hazy condition through the original fog removal function.
- Enables recording under significant brightness difference condition with the HDR function.
- Capable of establishing an advanced surveillance system with the RS-485 communication function.

# Names and Functions of Parts

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No.	Name	Function
①	Lens Mount (C mount)	Mount for installing the lens. Any type of C mount lens can be used. When installing the lens, take care to prevent dust or dirt from getting inside.
②	Flange Back Adjuster	For adjusting the flange back (distance from the lens mounting surface to image formation surface).
③	Flange Back Securing Screw	Tighten the screw to secure after adjusting the flange back of the camera.
④	Auto Iris Connector	Connector for connecting an auto iris lens. Supports only DC auto iris.
⑤	Tripod Socket	Socket for securing onto a tripod etc. Use 1/4"-20 UNC screws with length of 5.5 mm or less.
⑥	Securing Hole	Can be used to prevent rotation.
⑦ to ⑪	Setup Button	Refer to the operation items.
⑫	RS485 / Day/Night Switching Terminal Block	Use when connecting via RS-485 or remotely controlling the switching between Day and Night. <div style="text-align: right;">  <p>1 2 - + GND</p> </div>
⑬	RS-485 Terminal Switch	During RS-485 communication, set to "ON" for one-to-one control and "OFF" for daisy-chain connection. (Last connection device is ON)
⑭	DC 12 V Connection Terminal Block	Input DC 12 V. (Take note of the the polarity) <div style="text-align: right;">  <p>- +</p> </div>
⑮	Power Indicator	Lights up in green when the camera is turned on.
⑯	3G-SDI Output Terminal	Image output terminal for 3G-SDI.
⑰	(Composite) Video Output Terminal	Analog image output terminal for SD VIDEO.
⑱	RESET Button	Pressing this button sets the camera to the state when it was powered on.

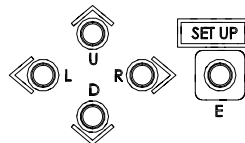
# Operation

## User Setup

Setup menu can be set on the OSD display.

## Names and Functions of Setup Buttons

Operate using the five push buttons (figure on the right) on the back of the camera.



Symbol	Name	Function
U	Up Button	For selecting a setup item (vertical direction)
D	Down Button	
L	Left Button	For selecting a setup item (horizontal direction)
R	Right Button	
E	Enter Button	For entering and exiting setup mode For confirming and executing a setup

## Structure of Setup Mode

The setup menu consists of 6 items of setup menu.

## Contents of Main Menu

The Main Menu appears when the E button is pressed for more than 2 seconds. Various settings for the camera operation are available. To close the menu screen, press the E button again or select EXIT.

## Main Menu

Main Menu			
ALC	Setup		↵
Picture	Setup		↵
Color	Setup		↵
Video Output	Setup		↵
Dev. Setting	Setup		↵
Information	Disp		↵
EXIT			

## ALC Menu

	ALC		
ALC Mode		Full Auto	
ALC Level		.....	100
Limits		Setup	↵
Shutter		1/60	
Gain		0.0dB	
BLC Mode		Off	
Detailed		Settings	↵
RETURN	EXIT		

### ALC Mode

For selecting the method to control the brightness.

#### Full Auto

The gain, shutter speed and iris are automatically adjusted.

#### Shut.Prio.

The gain and iris are automatically adjusted and the shutter speed can be adjusted to any setting value.

#### Gain Prio.

The shutter speed and iris are automatically adjusted and the gain can be adjusted to any setting value.

#### Manual

The gain and shutter speed can be adjusted to any setting value.

### ALC Level

Adjust the convergence value for automatic exposure using the L and R buttons. The greater the value the brighter it becomes.

Adjust to the appropriate position while looking at the actual image. This is not adjustable when ALC is set to manual mode.

### Limits

Adjust the maximum and minimum values of shutter speed and gain to any setting value during automatic adjustment.

### Shutter

When ALC Mode is set to Shut.Prio. or Manual, use the L and R buttons to adjust any value setting for the shutter speed.

- 1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 [59.94Hz system]
- 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 [50 Hz system]

\* There is a margin of error in the displayed value of the shutter speed and the actual control.

### Gain

When ALC Mode is set to Gain Prio. or Manual, use the L and R buttons to adjust any setting value for the gain.

- 0 to 78 dB (in step of 0.3 dB)

## BLC Mode

The backlight correction can be set using the L and R buttons.

### Off

Adjusts the best brightness for the entire screen.

### On

Automatically corrects the brightness by measuring the light while avoiding extremely bright areas on the entire screen.

### Spot

Automatically selects an area surrounded by a frame on the screen and corrects the brightness so that the other areas are in the best condition.

When entering SPOT SET, a  $9 \times 5$  grid appears on the screen.

Move the cursor using the U, D, L and R buttons and press the E button at the required position to fill in the grid. The filled area is excluded from photometry.

## Detailed Settings

### Based Shutter

ALC (Auto Lens Control) is controlled by the Lens Iris, Shutter Speed and Gain. When the amount of light input is large (bright), narrow the iris or increase the shutter speed; on the contrary, when the amount of light input is little (dark), open the iris or decrease the shutter speed. The Based Shutter value configured will become the amount of light between these two conditions. The configured range is 1/60 to 1/10000 for the 59.94 Hz system and is 1/50 to 1/10000 for the 50 Hz system.

### Flickerless

Allows you to turn on or off the flicker improvement function.

- Fixed at 1/100s for the 59.94 Hz system and 1/60s for the 50 Hz system

### Day/Night

Allows you to select a IR cut filter switching specification from the following modes.

#### Color

Outputs color images (with IR cut) at all times.

#### B/W

Outputs monochrome images (without IR cut) at all times.

#### Auto

Automatically switches to color images of high quality during daytime and black-and-white images of high sensitivity at night.

After selecting this mode, Switch Level (switching brightness level) can be set by pressing the OK button.

#### Switch Level Setting

For setting the switching brightness level.

##### Dark

The switching brightness level is dark.

##### Mid

The switching brightness level is between Dark and Bright.

##### Bright

The switching brightness level is bright.

##### Manual

The switching brightness level is set manually.

#### Manual Setting

When Switch Level is set to Manual, the following settings can be performed.

##### Color⇒B/W

Sets the brightness to switch from day to night.

##### B/W⇒Color

Sets the brightness to switch from night to day.

**Remote**

The Day/Night switching can be operated externally.

The B/W Color can be configured by shorting or opening the terminal block 1-2 of the ⑫ RS-485 Day / Night Switch in “Names and Functions of Parts”.

The short and open condition changes according to the Main Menu > ALC Detailed Settings > IR Trig Pol. setting.

		RS-485 Day/Night Switch Terminal Block 1-2	
		Short	Open
IR Trig Pol.	Brake	Color	B/W
	Make	B/W	Color

**Average/Peak**

Allows you to adjust the average value and peak value of the metering data.

**Iris Speed**

The control speed of the lens iris can be adjusted using the L and R buttons.

Adjust this when hunting occurs.

**Iris Detect**

For setting the type of iris lens.

**Auto**

Automatically identifies the DC-Iris lens and fixed iris lens.

**DC-Iris**

Controls the DC-Iris lens. High shutter speed is not achievable when a fixed iris lens is used.

**MN-Iris**

Controls the fixed iris lens. Enters the Full-Open state when a DC-Iris lens is connected.

The difference in operation depending on the lens (DC-Iris lens, fixed Iris lens) when the iris type is set is as follows.

OSD Page ALC Detailed Settings Configured Iris Detect Value	Description	Connected Lens	Operation
Auto	Drives the iris when the power is turned on or DC/fixed iris is automatically identifies using this setting. This is the factory default setting.	DC-Iris	Operates as DC-Iris. High speed shutter is not used under high brightness condition. Only drives the iris.
		Fixed Iris	Operates as fixed iris. High speed shutter is used under high brightness condition.
DC-Iris	Drives by DC-Iris control.	DC-Iris	Same as the above "DC-Iris" under "Auto".
		Fixed Iris	High speed shutter is not used.
MN-Iris	Drives by fixed iris control.	DC-Iris	The iris enters the Full-Open state. High speed shutter is driven under high brightness condition.
		Fixed Iris	Same as the above "Fixed Iris" under "Auto".

- When the high brightness condition is brighter than the configured ALC Level (iris closing state)
- \* Use the "Auto" setting under normal condition.
- \* When the lens is replaced, just turn on the power again.
- \* If it is not possible to turn on the power again, select the lens option from the Iris setting menu and select "Auto" (this operation allows the camera to identify the lens type using "Auto" again).

## Picture Menu

Picture	
HDR	Off
Auto Knee	Off
Auto B.str	Off
Black Level	..... 0
Gamma	0.45
Fog	Off
DNR	High
Detail	..... 50
RETURN	EXIT

### HDR

Allows you to turn on or off HDR (function that expresses a wide range of brightness by double exposure of low-speed shutter and high-speed shutter).

#### On

##### HDR Mode

Selecting On allows you to adjust the following items. The following items are not displayed when Off is selected.

\* The frame rate of the image sensor is 1/2 in the HDR mode.

- **Shut Ratio**

Allows you to adjust the shutter ratio between low speed and high speed.

- **Mix Pos.**

Allows you to select Auto, Low or High as the switching point between the low speed shutter image and high speed shutter image.

##### **Auto**

Automatically sets the switching point between low speed and high speed.

##### **Low**

The switching point is based on the high speed shutter.

##### **High**

The switching point is based on the low speed shutter.

#### Off

Normal Mode

### Auto Knee

Allows you to automatically compress and display the bright area.

#### On

It lowers the knee point to about 80 IRE and automatically adjusts the knee slope according to the brightness.

#### Off

The knee point is fixed at about 100 IRE.

### Auto B str.

Allows you to turn on or off the function to stretch and display the dark area.

#### On

Sets Auto Black Stretch to ON.

#### Off

Normal Mode

## **Black Level**

The black level of the camera image can be adjusted using the L and R buttons.

## **Gamma**

Allows you to select the gamma characteristics for the camera according to the display (monitor) used.

- 0.35 to 0.55 (0.01 step)/ 1.0

## **Fog**

Even when the background and/or the contour of the subject are among fog, haze, or smoke, as long as they are slightly visible, the function corrects the image by providing contrast so that they become more visible.

### **Off**

Normal mode.

### **Low**

Digital Defog function; low correction level.

### **Mid**

Digital Defog function; medium correction level.

### **High**

Digital Defog function; high correction level.

## **DNR**

Select the noise reduction effect using the L and R buttons.

### **Off**

Noise reduction does not operate.

### **Low**

Noise reduction operates on LOW.

### **High**

Noise reduction operates on HIGH.

\* The amount of noise reduction operation operates in proportion to the amount of gain. When Gain is low, the amount of noise reduction operation is small and when Gain is high, the amount of noise reduction operation is large.

\* When the Gain is increased by selecting High, an afterimage may occur under the influence of 3D noise reduction.

## **Detail**

The contour enhancement level of the camera image can be adjusted using the L and R buttons.



## Color Menu

	Color		
White Bal.	Manual		
Red Gain	.....	50	
Blue Gain	.....	50	
Chroma	.....	50	
Color Matrix	Setup	↵	
RETURN	EXIT		

### White Bal

Allows you to switch the white balance mode using the L and R buttons.

#### **ATW1**

Automatically tracks and adjusts white balance. (Color temperature range: 2500K to 9000K)

#### **ATW2**

Automatically tracks and adjusts white balance. Although it supports a wider range of color temperatures than ATW1, the color may shift compared to ATW1.

#### **AWC**

One push auto white balance control.

Align white balance by projecting the target achromatic (white, gray) subject and pressing the E button.

#### **Manual**

Preferred white balance is acquired by adjusting Red Gain and Blue Gain.

##### **Red Gain**

When White Bal is set to Manual, you can adjust the red color using the L and R buttons.

##### **Blue Gain**

When White Bal is set to Manual, you can adjust the blue color using the L and R buttons.

#### **Low Temp.**

This is the balance that matches the light source of the warm color system 3200K.

#### **High Temp.**

This is the balance that matches the light source of the cool color system 5000K.

### Chroma

The chroma level of the camera image can be adjusted using the L and R buttons.

### Color Matrix

Allows you to adjust the hue and saturation of six axes: R, G, B, Ye, Cy, and Mg.

After selecting each color, use the L and R buttons to adjust the Hue and Saturation.

## Video Output Menu

Video Output	
Video Output	1080i/59.94 ↵
SDTV Format	NTSC-J
SDTV Aspect	Side Cut
SDTV C.Burst	On
Zoom	x1.0
Flip/Mirror	Normal
Video Test	Camera
RETURN	EXIT

### Video Format

Allows you to change the signal format of the HD output.

If you change the setting, an “Enter symbol” is displayed. Press the E button to display the confirmation screen.

Selecting OK restarts the camera and switches the format. There is no video output during the restart.

### SDTV Format

#### NTSC-J

This is the setting for Japan.

PEDESTAL: 0 IRE

#### NTSC-M

This is the setting for USA and other NTSC regions.

PEDESTAL: 7.5 IRE

\* For 50 Hz system, this setting is fixed and displayed as “PAL”.

### SDTV Aspect

#### Letter Box

Maintains the aspect ratio and displays the entire image with black bands added at the top and bottom.

#### Side Cut

Maintains the aspect ratio and cuts the left and right to display only the center.

#### Squeeze

Resize horizontally to display the entire image.

### SDTV C.Burst

Allows you to turn on or off the burst signal in B/W mode.

#### Off

Burst signal is not added.

#### On

Burst signal is added.

### ZOOM

For setting the magnification of the digital zoom.

(x1, x1.1, x1.2, .... x9.9, x10)

## **Flip / Mirror**

Allows you to reverse the image.

### **Normal**

Normal mode.

### **Flip**

Flips the image vertically.

### **Mirror**

Flips the image horizontally.

### **Frip&Mirror**

Flips the image vertically and horizontally.

## **Video Test**

### **Camera**

Normal state

### **Color Bar**

Color bar signal

### **Gray Scale**

Gray scale signal

### **Cross Line**

Cross line signal



## Setting to Default

For returning all settings except video out and communication system to factory default. The following items will not return to default setting.

- Video output mode
- Camera ID
- RS-485 ID
- RS-485 Baud.

## RS-485, DAY/NIGHT REMOTE Connection

Connect according to the diagram below to control via RS-485 or to remotely switch between Day and Night.

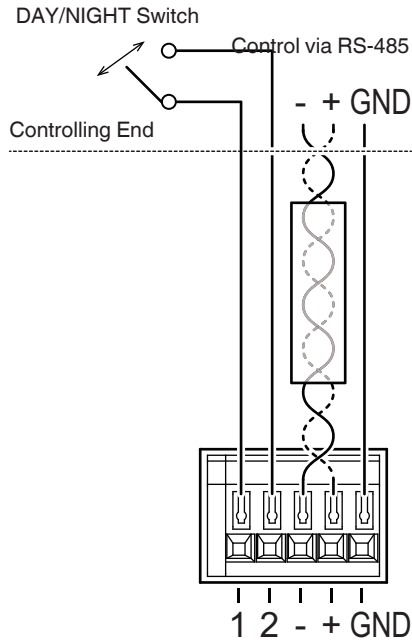
And set “Day/Night” in the Menu to “Remote” to remotely switch between Day and Night.

Short terminal 1 and 2 : Night mode (night time)

Removes the IR cut filter and displays a black and white image at the same time.

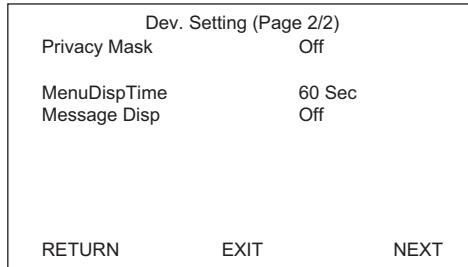
Open terminal 1 and 2 : Day mode (day time)

Removes the IR cut filter and displays a color image at the same time.



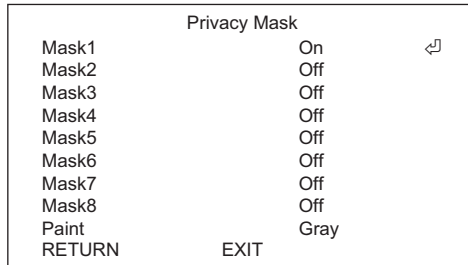
Terminal Block on the Back of SSC-9700

## Device Setting (2/2) Menu



### Privacy Mask

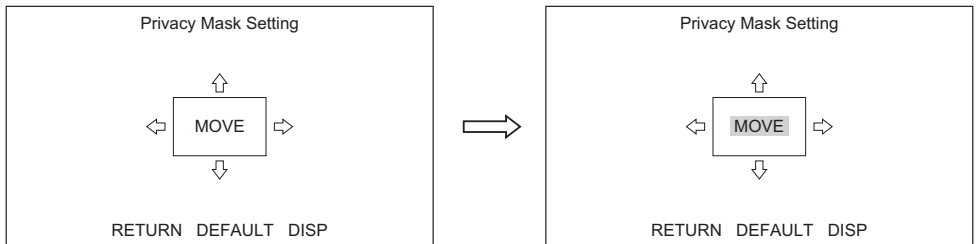
Up to 8 different Privacy Masks can be individually set up when this is set to “On”. Selecting Privacy Mask switches the screen to a Privacy Mask display.



You can set Mask 1 to 8 to On or Off individually.

The mask color can be selected from Gray, White and Black.

The screen for setting the position and size of the mask appears when a Mask is selected and set to On using the E button.



Move the cursor to the position where you want to change and press the E button. The cursor changes from flashing to dark highlight flashing. In the above figure, you can shift the position (MOVE) using the U, D, L and R buttons.

And the size (arrows ⇐⇒) can be changed using the U, D, L and R buttons.

To change the position you want to change, press the E button. The cursor resumes to normal flashing from dark highlight flashing and the position can be shift using the U, D, L and R buttons.

### Menu Display Time

Allows you to set the duration to display the OSD menu.

- 10 s / 60 s / Always

---

## Information: Version

	Information
Model Name	
Main Version	
Firm Version	
FPGA Version	
RETURN	EXIT

### Information like Model Name, Serial No, etc.

**Model Name**

Model name

**Main Version**

Main program version

**Firm Version**

Firm program version

**FPGA Version**

FPGA program version

## Restrictions on Menu Setting

Some items cannot be set (item not displayed) under certain settings.  
Refer to here for items that are not displayed.

○: Can be set, x: Cannot be set (item not displayed), \*: Exception (item is displayed but the setting value is changed because the setting items cannot be used simultaneously)

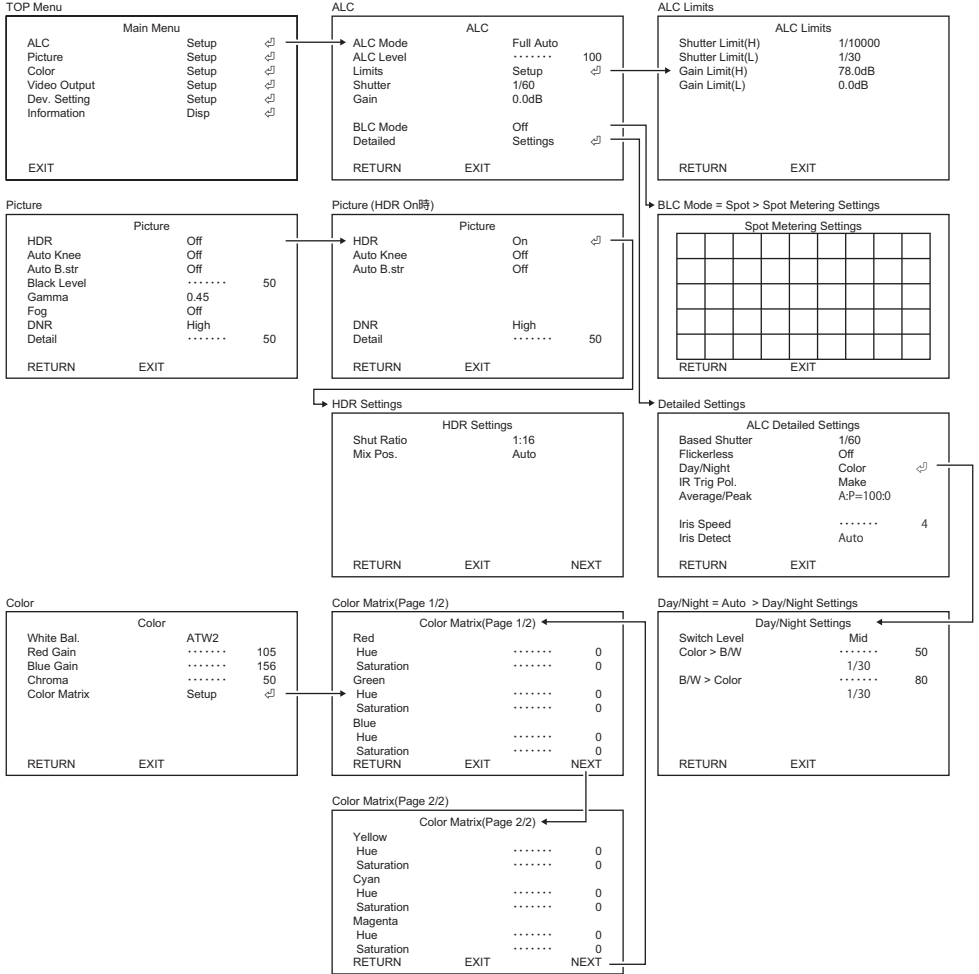
Setting Condition			HDR = On	Auto Knee = On	Auto B.str = On	Fog = Low, Mid, High
Menu	Item	Setting value etc.				
Picture	HDR		-	○	○	○ (* Priority to HDR. When HDR = On, setting value for Fog changes)
	Auto Knee		○	-	○	* (Changes to Off)
	Auto B.str		○	○	-	* (Changes to Off)
	Black Level		x	○	x	○
	Gamma		x	x	x	x
	Fog	Off		○	○	○
	Low, Mid, High		x	* (Changes to Off)	* (Changes to Off)	-

Setting Condition			HDR = On
Menu	Item	Setting value etc.	
ALC	ALC Mode		○
	ALC Limits	Shutter Limit	x
		Others	○
	Shutter		1/30 to 1/4000 (59.94Hz system) 1/25 to 1/4000 (50Hz system)
	BLC Mode		x
	Detailed	Flickerless	

Setting Condition			ALC Mode = Gain Prio. Gain=0.0 to 5.7 dB
Menu	Item	Setting value etc.	
ALC	ALC Limits	Shutter Limit (L)	1/60 to 1/4000 (59.94Hz system) 1/50 to 1/4000 (50Hz system)



# Menu Structure



Video Output

Video Output	1080i/59.94	↵
SDTV Format	NTSC-J	
SDTV Aspect	Side Cut	
SDTV C.Burst	On	
Zoom	x1.0	
Flip/Mirror	Normal	
Video Test	Camera	
RETURN	EXIT	

Video Output Change

Video Format

change to 1080p/59.94

OK CANCEL

RETURN

Device Setting (Page 1/2)

DEV. Setting (Page 1/2)

Camera ID	On	↵
RS485 ID	1	
RS485 Baud.	9600	↵
Setting to Default		↵
RETURN	EXIT	NEXT

Camera ID

Edit Camera ID

ABCDEFGHIJKLMNPOQRSTUVWXYZ  
WXYZ:()/\_+-.0123456789

+++++

SPACE < > DELETE CLEAR

RETURN EXIT

RS485 Boudrate

RS485 Boudrate Change

change to 9600

OK CANCEL

RETURN

Setting to Default

Setting to Default

Initialize the settings.

Keep the Video settings  
and Camera ID  
and RS485 settings.

OK CANCEL

RETURN

Device Setting (Page 2/2)

Dev. Setting (Page 2/2)

Privacy Mask	On	↵
MenuDispTime	60 sec	
RETURN	EXIT	NEXT

Privacy Mask Select

Privacy Mask

Mask1	On	↵
Mask2	Off	
Mask3	Off	
Mask4	Off	
Mask5	Off	
Mask6	Off	
Mask7	Off	
Mask8	Off	
Paint	Gray	
RETURN	EXIT	

Privacy Mask Setting

Privacy Mask Setting

↑  
← MOVE →  
↓

RETURN DEFAULT DISP

Information

Information

Model Name  
Main Version  
Firm Version  
FPGA Version

RETURN EXIT

# Specifications

## Camera Unit

Image Sensor	Single Panel CMOS/ RGB Bayer Array	
Total Pixels	Approximately 2,270,000 pixels 2016 (H) × 1128 (V)	
Effective Pixels	Approximately 2,120,000 pixels 1936 (H) × 1096 (V)	
Pixel Size	4.1 Mm (H) × 4.1 μm (V)	
Optical Size	1/1.8 inch	
Sensor Frame Rate	59.94 fps/50 fps (1/2 fps when in HDR mode)	
Scanning System	Progressive	
Minimum Illumination	0.003 lx (F1.4, 1/30 s, 50 IRE, +78 dB)	
Horizontal Resolution	900 TV lines or more	
SN Ratio	50 dB or above ( $\gamma = 1$ , Contour Correction OFF, DNR OFF)	
Lens Mount	C mount	
Lens Control	4 pin DC iris control	
Image Quality Adjustment	Exposure Mode	Full Auto / Shut. Prio. / Gain Prio. / Manual
	Gain	Manual: 0 dB to 78 dB (0.3 dB step)
	Electronic Shutter	1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 s [59.94Hz system] 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 s [50Hz system]
	ALC Adjustment	Level adjustment/ Limits adjustment
	Backlight Correction	On/ Off/ Spot
	Gamma Correction	0.35 to 0.55 (0.01 step) / 1.0
	DNR	Off / Low / High
	Image Quality Adjustment	White Balance
HDR MODE		Off / HDR / Auto Knee / Auto Black Stretch
Defog		Off / Low / Mid / High
Color Matrix		R/G/B/Ye/Cy/Mg 6 axis adjustment
Others		Detail / Chroma / Black Level
Digital Zoom	1x to 10x	
Image Reversal	Mirror/Flip/Mirror Flip	
Privacy Mask	8 masks Gray/White/Black	
Test Pattern	Color Bar, Gray Scale, built-in Cross Line	
Operation	Via OSD screen	

## Interface

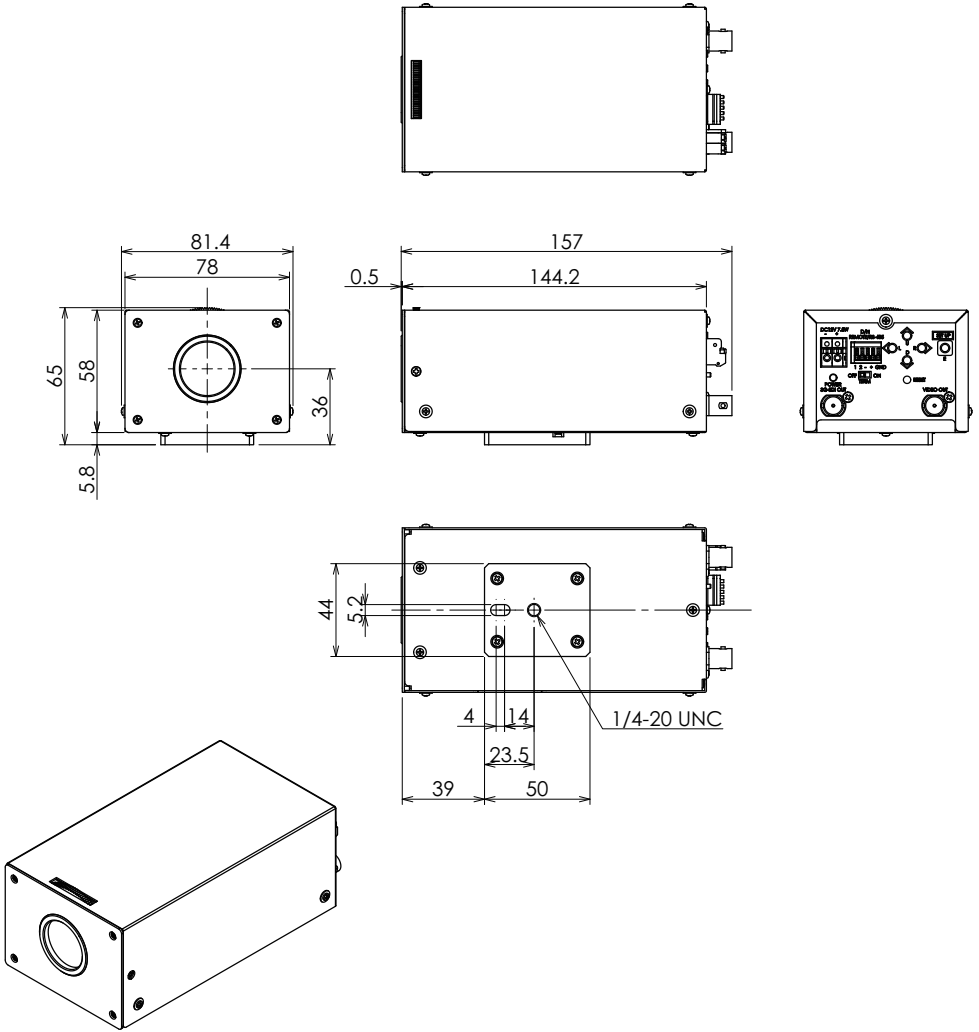
Image Output Terminal	3G-SDI (BNC) ×1 Composite Video (BNC) ×1	
Serial Port	RS-485 (Carina original command)	
Relay Interface	IR Cut filter	
Video Output	3G-SDI	1080P/59.94 (LEVEL A), 1080i/59.94, 1080p/29.97, 1080p/50.00 (LEVEL A), 1080i/50.00, 1080p/25.00
	Composite Video	NTSC, PAL down conversion LETTER BOX / SIDE CUT / SQUEEZE

## General

Power Supply	DC 12 V ±10 % (Ripple 50 mVp-p or less)
Power Consumption	7.5W
Operational Temperature/ Humidity Range	-10 to 50°C / 10 to 90 %
Storage Temperature/ Humidity Range	-10 to 60°C / 10 to 90 %
Dimension	78.0 (W) × 63.8 (H) × 144.7 (D) mm excluding protrusions
Weight	500g

- The specifications and/or appearance of the product are subject to change without prior notice.

# Dimensions



## Recycling Information

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This product, when disposed of, is supposed to be collected and recycled according to your country's legislation to reduce environmental burden. When you dispose of this product, please contact a distributor or an affiliate in your country.

## Warning for Radio interference

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### For U.S.A., Canada Only

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#### FCC Supplier's Declaration of Conformity

We, the Responsible Party

EIZO Inc.  
5710 Warland Drive, Cypress, CA 90630  
Phone: (562) 431-5011

declare that the product

Trade name: Carina System Co., Ltd.  
Model: SSC-9700

is in conformity with Part 15 of the FCC Rules. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### **WARNING!**

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### **Canadian Notice**

This Class A information technology equipment complies with Canadian ICES-003.  
Cet équipement informatique de classe A est conforme à la norme NMB-003 du Canada.

### For Europe Only

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#### **Warning**

Operation of this equipment in a residential environment could cause radio interference.

#### **Warnung**

Der Betrieb dieses Geräts in einer Wohnumgebung konnte Funkstörungen verursachen.

#### **Avertissement**

L'utilisation de cet équipement dans une zone résidentielle pourrait provoquer des interférences radio.

For consultation of the product or requests for repair, please contact the dealer / retailer.

Dealer/Retailer
Address:
Phone: (            )            -

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**Carina System Co., Ltd.**

<http://www.carinasystem.co.jp/en>

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