SAMSUNG TECHWIN

Super High ResolutionCamera

User Manual

SCB-2002
SCB-2002PH

CE

SAMSUNG

Super High ResolutionCamera

User Manual

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Warranty

If the product does not operate properly in normal conditions, please let us know. Samsung Techwin will resolve the problem for free of charge. The warranty period is 3 years. However, the followings are excluded:

- If the system behaves abnormally because you run a program irrelevant to the system operation.
- Deteriorated performance or natural worn-out in process of time

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

Before operating the camera, confirm the camera model and correct input power voltage. To help you understand this manual thoroughly, we'll introduce our model description.

■ SCB-2002 SERIES

- NTSC MODEL
  SCB-2002N
- PAL MODEL
  SCB-2002P
  SCB-2002PH

■ MODEL DESCRIPTION

- SCB-2002/2002X X

POWER SOURCE
SIGNAL SYSTEM

- SIGNAL SYSTEM
  N → NTSC MODEL
  P → PAL MODEL
- POWER SOURCE
  → DC12V/AC24V
  H → AC 230V~

safety information

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.

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.

This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

- To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.
- To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

WARNING

1. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
2. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
3. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.
4. Securely plug the power cord into the power receptacle. insecure connection may cause fire.
5. When installing the camera, fasten it securely and firmly. The fall of camera may cause personal injury.

6. Do not place conductive objects (e.g. screwdrivers, coins, metal parts, etc.) or containers filled with water on top of the camera. doing so may cause personal injury due to fire, electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. doing so may cause fire or electric shock.
8. If any unusual smells or smoke come from the unit, stop using the product. in such case, immediately disconnect the power source and contact the service center. continued use in such a condition may cause fire or electric shock.
9. If this product fails to operate normally, contact the nearest service center. never disassemble or modify this product in any way. (samsung is not liable for problems caused by unauthorized modifications or attempted repair.)
10. When cleaning, do not spray water directly onto parts of the product. doing so may cause fire or electric shock.

CAUTION

1. Do not drop objects on the product or apply strong shock to it. Keep away from a location subject to excessive vibrationor magnetic interference.
2. Do not install in a location subject to high temperature (over 50°C), low temperature (below -10°C), or high humidity. Doing so may cause fire or electric shock.
3. If you want to relocate the already installed product, be sure to turn off the power and then move or reinstall it.
4. Remove the power plug from the outlet when then there is a lightning. Neglecting to do so may cause fire or damage to the product.
5. Keep out of direct sunlight and heat radiation sources. It may cause fire.
6. Install it in a place with good ventilation.
7. Avoid aiming the camera directly towards extremely bright objects such as sun, as this may damage the CCD image sensor.
8. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
9. The Mains plug is used as a disconnect device and shall stay readily operable at any time.
10. Do not expose the camera to radioactivity. Radioactivity exposure may damage the CCD.

safety information

FCC STATEMENT

This device complies with part 15 of the FCC Rules. Operation 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.

CAUTION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of 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.

IC Compliance Notice

This Class A digital apparatus meets all requirements of the Canadian Interference.-Causing Equipment Regulations of ICES-003.

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

important safety instructions

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

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

eco
RoHS compliant

Samsung Techwin cares for the environment at all product manufacturing stages to preserve the environment, and is taking a number of steps to provide customers with more environment-friendly products.The Eco mark represents Samsung Techwin's will to create environment-friendly products, and indicates that the product satisfies the EU RoHS Directive.

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FEATURES

- **High Resolution**
  By Super HAD CCD II (1/3") 520K pixel (NTSC), 610K pixel (PAL) Color Double Density CCD, the camera produces clear picture quality with a horizontal resolution of 650 TV lines for color and 700 TV lines for BW.

- **Excellent Sensitivity**
  The built-in high sensitivity COLOR CCD produces a clear image.
  - SCB-2002 COLOR : 0.1 Lux(50IRE,@F1.2), B/W : 0.01 Lux(50IRE,@F1.2)
  - SCB-2002H COLOR : 0.1 Lux(50IRE,@F1.2), B/W : 0.01 Lux(50IRE,@F1.2)

- **Motion Detection**
  Without assistance from an external sensor, this camera independently detects and traces objects while examining movement to activate the alarm.

- **SSNR3 (Samsung Super Noise Reduction) Function**
  The high-performance SV-V DSP chip effectively removes low-light gain noise and afterimage to provide clear images even in dark environments.

- **Day&Night**
  This camera has a function that automatically selects the mode that is appropriate for daytime or night-time conditions.
  The COLOR mode operates in daytime conditions to provide optimum colors, and B/W mode operates in nighttime conditions to enhance the definition of the image.

- **SSDR (Samsung Super Dynamic Range)**
  For images with high contrast between bright and dark areas from difficult lighting conditions such as backlighting, this camera selectively illuminates darker areas while retaining the same light level for brighter areas to even out the overall brightness.

- **PROFILE**
  You can set a mode according to the camera installation conditions.
  - BASIC, DAYNIGHT, BACKLIGHT, ITS, INDOOR, USER.

- **PIP**
  Displays a full-size image along with the thumbnail.

- **Video/DC Drive Lens Support**
  You can select Video or DC Drive Lens from the menu.

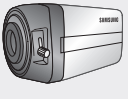
- **DIS (Digital Image Stabilizer)**
  The DIS function compensates for any camera movement, to produce more stable pictures.

introduction

- **Miscellaneous Functions**
  HLC(High Light Compensation), SENS-UP, REVERSE , D-ZOOM, SHARPNESS and PRIVACY functions are provided.
- **Communication**
  Coaxial and RS-485 communication methods are supported.
  - Coaxial Communications : Pelco Coaxitron
  - RS-485 Communications : Samsung-T, Samsung-E, PELCO-D, PELCO-P, BOSCH, HONEYWELL, VICON, PANASONIC, GE, AD
- **OSD**
  The camera's OSD is complimented by 18 languages.
  - NTSC : English, Korean, Japanese, Spanish, French, Portuguese, Taiwanese
  - PAL : English, Chinese, German, Italian, French, Spanish, Russian, Czech, Polish, Romanian, Serbian, Swedish, Danish, Turkish, Portuguese

WHAT'S INCLUDED

Check if the following items are included in the product package.



SCB-2002/2002H

User Manual

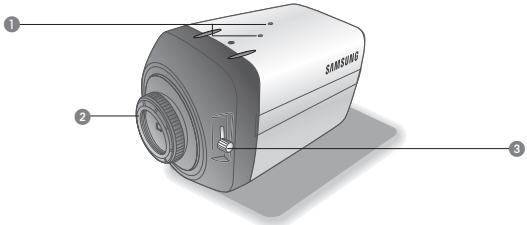
Quick Set-up Guide

Auto iris lens connection plug

C-Mount adaptor

COMPONENT NAMES AND FUNCTIONS

FRONT VIEW

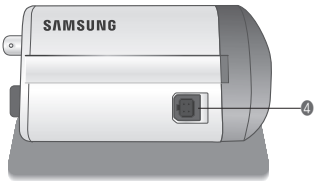


❶ **Tripod Mounting Bracket Screw Hole**
Used to fix the Tripod Mounting Bracket to the top of the camera.

❷ **C-Mount Lens Adapter**
Install this adapter to use a C-Mount Lens.

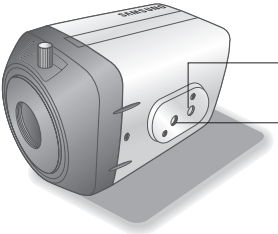
❸ **Back Focus Control Lever**
Adjust focus by this Back Focus Lever.

SIDE VIEW



❹ **Auto Iris Lens Connector**
Used to connect Auto Iris Lens plug.

BOTTOM VIEW

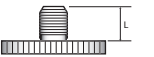


※ Cannot fasten screws here.

5 ※ When fastening the screw, make the screw fastening part head to the camera module.

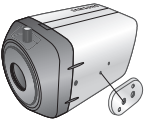
5 Tripod Mounting Bracket Screw Hole

Used to fix the camera on a bracket or tripod.
The screw sizes for this hole are as follows:



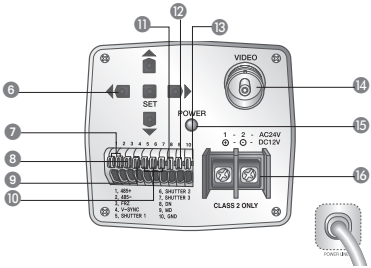
1/4"-20 UNC (20 THREAD)
L:4.5mm±0.2mm (ISO standard),
or 0.197" (ASA standard)

* You can separate the Tripod Mounting Bracket and install it on the top or bottom of the camera. Make sure to use the Tripod Mounting Bracket when fixing the camera to a bracket or tripod. Otherwise the camera may not be secure, or the internal circuitry of the camera may be damaged.



- Tripod is not supplied with the camera. Please check the installed documentation of tripod for the installation of cameras.

REAR VIEW



* High Voltage Type (SCB-2002PH)

❻ **Function Setup Button:**

- SET button : Displays the menu on the screen and uses enter sub menu.
- Up&Down button : Used to move the cursor up or down in the menu screen.
- Left&Right button :Used to move the cursor left or right in the menu screen.

❼ **RS-485 Control Port :** You can control SETUP MENU through this port by using external controllers like a Remote controller that RS-485 Communication is supported.

❽ **FREEZE Mode Setting Terminal :** Turns on or off FREEZE function.

❾ **V-SYNC Input Terminal :** Enables External Sync.

❿ **Shutter Speed Select Terminal :** Selects external sync shutter speed.

	SHUTTER 1	SHUTTER 2	SHUTTER 3
1/60(1/50)	OFF	OFF	OFF
1/120(1/100)	ON	OFF	OFF
1/250	OFF	ON	OFF
1/500	ON	ON	OFF
1/700	OFF	OFF	ON
1/1000	ON	OFF	ON
1/1600	OFF	ON	ON
1/2500	ON	ON	ON

[Interlace mode]

⓫ **D & N Input Port :** You can switch to Day & Night Mode by connecting an external signal to this port.

⓬ **MD Output Port :** Motion detection signals are output through this port.

⓭ **Ground Terminal**

⓮ **Video OUT Terminal :** Sends video signal and connects to the video input terminal of the monitor.

⓯ **Power LED :** This lamp is lit when the camera is receiving power normally.

⓰ **Power input terminal :** Connects to the power appropriate to each model.

※ External I / O port configuration

Num	Name	I/O Direction
1	RS-485+	I/O
2	RS-485-	I/O
3	Freeze	I
4	V-SYNC	I
5-7	Shutter	I
8	DN	I
9	MD	O
10	GND	-

- When using the FREEZE Mode Setting Terminal, the Shutter Speed Select Terminal and the D & N Input Port, Connect each of the terminals to the Ground Terminal.

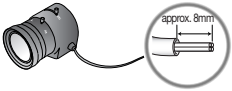
LENS

The lens is not supplied with this camera. Purchase a lens suitable for your environment. This camera accepts the auto iris lens and both C-and CS-mount lens.

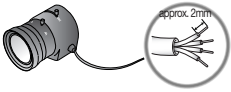
- To use the functions of this camera effectively it is recommended that a DC type Auto Iris lens is used.
- Keep the lens surface clean, if it becomes contaminated with dirt or fingerprints the picture quality suffers.

WHEN USING AUTO IRIS LENS

1. Strip the insulation of the auto iris lens cable 8mm from the end.

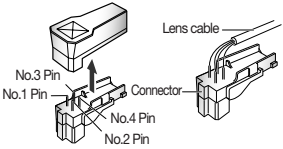


2. Strip the insulation of the core of the auto iris lens cable to expose a 2mm length.

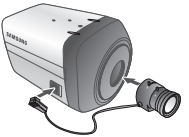


3. Remove the cover of the auto iris lens connector plug and solder the lens cable to the connector pin of the plug.

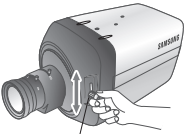
	LENS	
Pin No.	DC	VIDEO
No.1 Pin	Damping -	Red (power)
No.2 Pin	Damping +	NC
No.3 Pin	Drive +	White (video signal)
No.4 Pin	Drive -	Black (GND)



4. Fit the cover of the auto iris lens connector plug, remove the protective glass cover from the front of the camera, and fasten the auto iris lens by turning it clockwise.



5. Set focus of camera using Back Focus Control Lever of camera side after combining Auto Iris lens.

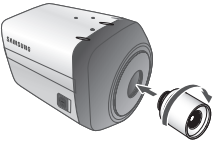


Back Focus Control Lever

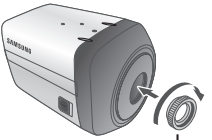
WHEN USING A C/CS-MOUNT LENS

Before installing a lens, identify whether the lens to be installed is a C-Mount or CS-Mount.
This camera is set for a CS-Mount Lens by default. To install a C-Mount Lens, a simple modification is required.

- **When Using a CS Mount Lens**
  Remove the protective glass cover at the front of this product and turn the CS-Mount Lens clockwise to install it. And set focus of camera using Back Focus Control Lever of camera side after combining CS-Mount lens.

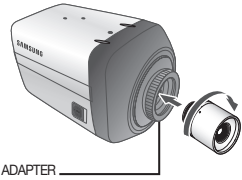


- **When Using a C Mount Lens**
  1. Remove the protective glass cover at the front of this product and turn the C-Mount Adapter clockwise to install it.



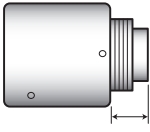
C-MOUNT ADAPTER

2. Turn the C-Mount lens clockwise to install it.



3. Set focus of camera using Back Focus Control Lever of camera side after combining C-Mount lens.

- Use the lens connector shown in the following figure. If the dimensions of the connector are not correct, it may damage the camera, or the lens may not be installed firmly.
- If the lens is too heavy, the camera becomes unbalanced and there may be problems. Use a lens that weighs less than 450g.
- When adjusting the Automatic Level Control (ALC) of an auto iris lens, use Av mode if available. If you use the Pk mode, the picture brightness may change continuously.



C-mount lens : 10 mm or less
CS-mount lens : 5 mm or less

CONNECTING TO A MONITOR

Connect the Video OUT port on the rear panel of the camera to a monitor.

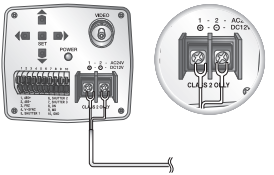
- As the connecting method varies with the instruments, refer to the manual supplied with the instrument.
- Only connect the cable when the power is turned off.

CONNECTING TO POWER

Since power specifications differ depending on the model, make sure to check your model name and specifications before connecting power.
You can connect power as shown in the following figure.

For AC / DC power

- Since the power specification supports both AC and DC, connect AC 24V, 500mA Adaptor or DC 12V, 500mA Adaptor.



High Voltage Type (AC230V, 50Hz)

- Use AC230V, 50Hz power source For SCB-2002PH.

When the resistance value of copper wire is at [20°C(68°F)]

Copper wire size (AWG)	#24 (0.22mm^2)	#22 (0.33mm^2)	#20 (0.52mm^2)	#18 (0.83mm^2)
Resistance value(Ω/m)	0.078	0.050	0.030	0.018
Voltage Drop (V/m)	0.028	0.018	0.011	0.006

- As shown in the table above, voltage decreases as the wire gets longer. Therefore use of an excessively long adaptor output line for connection to the camera may affect the performance of the camera.

* Standard voltage for camera operation : DC 12V±10%, AC 24V±10%

* There may be some deviation in voltage drop depending on the type of wire and the manufacturer.

- Be sure to connect power only after all the installation is complete.
- Note that AC / DC adaptor is not supplied with camera.
- Ground should be connected to the GND terminal.

CONTROL VIA RS-485 INTERFACE

The camera can be controlled by using external controllers like a Remote controller.
(RS-485 Communication)

(1) To control by PC
Connect the RS-485 control port of the camera and the serial cable through an RS-485 converter.
Example) PC Serial Port (COM1) → Serial Cable → RS-485 Converter → Camera RS-485Control Port.

(2) To control using a DVR or System Controller
Connect the RS-485 cable (TRX+, TRX-) to the connection port of the 485 control board that is connected to the DVR or System Controller.

485 Control Board Connection Port	RS-485 Control Port
(+) CONNECTION TERMINAL (TRX+)	485+
(-) CONNECTION TERMINAL (TRX-)	485-

* RS-485 Communication establishment initial value.

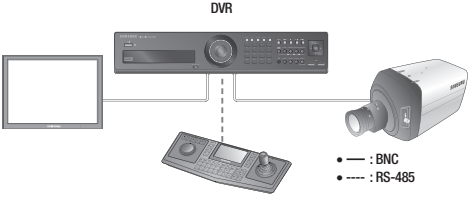
Item	Camera ID	BAUD RATE	UART MODE	RET PKT
Initial value	1	9600	8-NONE-1	ENABLE

- To control the camera by constructing an additional controller, use the SAMSUNG-T, SAMSUNG-E, PELCO-D, PELCO-P, BOSCH, HONEYWELL, VICON and PANASONIC, GE, AD protocol.

USING COAXIAL COMMUNICATIONS

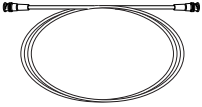
- Coaxial Communications System
- OSD Control method
- If you set the sensitivity level of the sub menu item (of COAX) to “Low”, you have to press the MENU/ENTER (OSD KEY) button twice in a row to access the OSD menu.
(To prevent an error by noise from the DVR)

CAMERA	DVR	CONTROLLER
SET	MENU/ENTER	OSD KEY
UP	UP KEY	JOYSTICK UP
DOWN	DOWN KEY	JOYSTICK DOWN
LEFT	LEFT KEY	JOYSTICK LEFT
RIGHT	RIGHT KEY	JOYSTICK RIGHT



- Video Cable

The camera's video output port is connected to the monitor with a BNC coaxial cable, shown below : If the distance between the camera and the monitor exceeds the recommended maximum, please use an auxiliary video amp.



Distance	Recommended Cable Specification
300m	3C2V(RG-59/U)
450m	5C2V(RG-6/U)
600m	7C2V(RG-11/U)

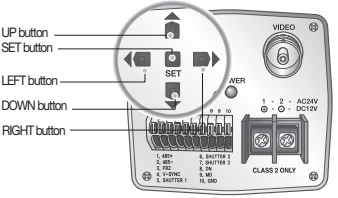
- It is recommended that pure copper coax cable is used and not copper coated steel, as this will cause issues with the communication over the coaxial cable.

MENU CONFIGURATION

MAIN SETUP			
LENS	● DC	● VIDEO	● MANUAL
EXPOSURE	● BRIGHTNESS ● SENS-UP	● SHUTTER ● RETURN	● AGC
SSDR	● ON	● OFF	
WHITE BAL	● ATW ● MANUAL	● OUTDOOR ● AWC→SET	● INDOOR
BACKLIGHT	● OFF	● USER BLC	● HLC
SSNR3	● ON	● OFF	
DAY/NIGHT	● AUTO ● B/W	● EXTERN	● COLOR
SPECIAL	● IMAGE ADJ ● MOTION DET ● PROFILE	● CAM TITLE ● PRIVACY ● COMM ADJ	● SYNC ● DIS ● RETURN
EXIT	● SAVE	● NOT SAVE	● RESET

MENU SETUP

Use the Function Setup button within the camera.



1. Press the set button.
   - Main SETUP menu is displayed on the monitor screen.

Select the function by moving up or down direction of function setup switch.

MAIN SETUP
▶ 1. LENS DC↵
2. EXPOSURE↵
3. SSDR OFF
4. WHITE BAL ATW
5. BACKLIGHT OFF
6. SSNR3 ON↵
7. DAY/NIGHT AUTO↵
8. SPECIAL↵
9. EXIT SAVE

Change the status by moving the setup switch left or right.

2. Select a desired function using the Function Setup button.
   - Place the cursor over a desired item.
3. Set up a selected item by using The Function Setup button.
4. To finish the setting, select 'EXIT' and press The set button.

- An item with the ↵ icon also has sub menus. To select a sub menu, select an item with the icon and press the set button.
- An item with the --- icon is unavailable due to function settings.

LENS

Using this function, you can control the screen brightness.

1. When the SETUP menu screen is displayed, select 'LENS' by using the Function Setup button so that the arrow indicates 'LENS'.

MAIN SETUP
▶ 1. LENS DC↵
2. EXPOSURE↵

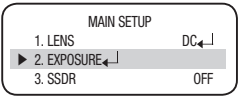
2. Select the connected lens type by using the Function Setup button.
   - **DC/VIDEO** : Select Auto Iris Lens.
     You can adjust the minimum shutter and maximum value of ESC shutter mode when DC Lens mode is selected.
   - **Manual** : Select Manual Lens.
3. Each Lens mode has sub menu site as listed below.
   - Brightness (DC, Manual) : Adjusts the video brightness.

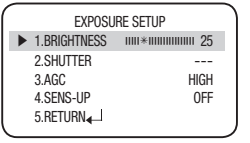
- FOCUS ADJ (DC, VIDEO) : To adjust the DC and VIDEO lens focus correctly, you must activate the Focus Settings mode under each lens menu. To activate the Focus Settings mode, adjust the lens focus, and then deactivate the settings mode. (The VIDEO lens requires an extra step: go to the sub menu of the Focus Settings mode and change the shutter speed to adjust the lens brightness.)
- IRIS SPEED (DC) : Adjusts the Iris control speed of the DC lens. If the control speed is too slow or fast, please use this menu to adjust the speed.

- When using VIDEO lens, adjust the lens VR explained below first and set the focus using 'FOCUS ADJ' menu.
- If color rolling occurs when using a DC lens, set Shutter to ---.
- Some lenses may not work properly, depending on the setting of the BRIGHTNESS LEVEL.
- When Using a Video-Type Auto Iris Lens
  1. Adjust the ALC adjustment terminal on the lens appropriately. In general, set it to AV (Average).
  2. It may not work properly depending on the installed lens. Set the Level VR of the lens to the optimal value.
  3. Set AGC to OFF and adjust the Lens VR to an appropriate brightness.
  4. Adjust the Lens VR, adjust the BRIGHTNESS, and then check if the screen brightness changes properly. Otherwise, adjust the Lens VR again.

EXPOSURE

1. When the SETUP menu screen is displayed, select 'EXPOSURE' by using the Function Setup button so that the arrow indicates 'EXPOSURE'.
2. Select a desired mode using the Function Setup button.
   - **BRIGHTNESS :** Adjusts the video brightness.
   - **SHUTTER :** You can select the shutter.
     - ESC : Select this to control the shutter speed automatically. If ESC is selected, the shutter speed is automatically controlled depending on the ambient illumination of the subject.





- MANUAL : You can control shutter speed manually. (NTSC MODEL - 1/60sec~1/120,000sec, PAL MODEL - 1/50sec~1/120,000sec)
- A.FLK : Select this when you experience picture flicker, this happen when there is a clash with the installed lighting frequency.
- EXTERN : Use the Shutter Speed Select Terminal on the back of the camera to control the shutter speed via an external input. You can control the desired speed as shown in the table below by connecting the terminal to the Ground Terminal.

	SHUTTER 1	SHUTTER 2	SHUTTER 3
1/60(1/50)	OFF	OFF	OFF
1/120(1/100)	ON	OFF	OFF
1/250	OFF	ON	OFF
1/500	ON	ON	OFF
1/700	OFF	OFF	ON
1/1000	ON	OFF	ON
1/1600	OFF	ON	ON
1/2500	ON	ON	ON

[Interlace Mode]

- --- : Shutter speed is fixed at 1/60 sec (1/50 sec).

- When you use a DC lens, set the shutter mode to --- if color rolling occurs.
- When the SHUTTER is set to ESC after selecting the Internal Synchronization Type, the picture may become unstable if the camera faces a bright fluorescent light. Therefore, take care when choosing the installation position.
- When the SHUTTER is set to MANUAL or A.FLK mode, SENS-UP will be disabled.
- When using an external input, Connect the Shutter Speed Select Terminal to the Ground Terminal.

- **AGC(AUTO GAIN CONTROL) :** The higher the gain level, the brighter the screen - but the greater the noise.
  - OFF : Deactivates the AGC function.
  - LOW : Allows automatic gain control from 5.3dB to 32dB.
  - HIGH : Allows automatic gain control from 5.3dB to 37dB.

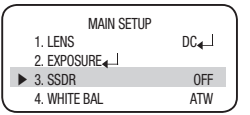
- **SENS-UP :** When it is night or dark, the camera automatically detects the light level and maintains a clear picture if this mode is activated.
  - OFF : Deactivates the SENS-UP function.
  - AUTO : Activates the SENS-UP function.

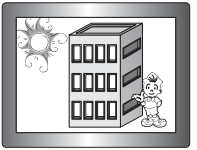
- If you set the Function Setup switch to 'AUTO' mode, You can adjust the brightness by increasing or decreasing the limit value. (x2~x512)
- Note that the higher the SENS-UP level, the brighter the screen, but the more likely it is that an after-image will appear.
- Although Noise, Spots, and Whitish symptoms may occur in SENS-UP operation when the sens-up level is increased, this is normal.
- If GAIN of EXPOSURE is not in use, the SENS-UP (Sensitivity-Up) is set to "---".

- **RETURN :** Select this to save the changes in the EXPOSURE menu and return to the SETUP menu.

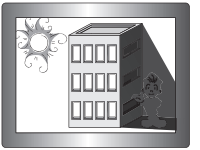
SSDR(SAMSUNG SUPER DYNAMIC RANGE)

SSDR illuminates darker areas of an image to even out the overall brightness while retaining the same light level for brighter areas of images with high contrast between bright and dark areas. Use the Function Setup button to change the SSDR level in the sub menu according to the contrast between bright and dark areas.





SSDR ON

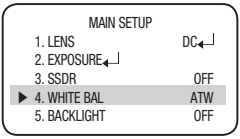


SSDR OFF

WHITE BAL (WHITE BALANCE)

Use the White Balance function to adjust the screen color.

1. When the SETUP menu screen is displayed, select 'White Bal' by using the Function Setup button so that the arrow indicates 'White Bal'.
2. Select a desired mode using the Function Setup button.



※ Select one of the following 5 modes, as appropriate for your purpose.

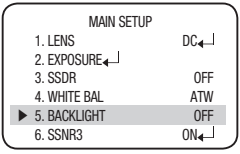
- **ATW** : Select this when the color temperature is between 1,700°K and 11,000°K.
- **OUTDOOR** : Select this when the color temperature is between 1,700°K and 11,000°K. (sodium light inclusion)
  Select this When the color temperature of environment surrounding the subject is out of the control range (e.g. clear sky, or sunset)
- **INDOOR** : Select this when the color temperature is between 4,500°K and 8,500°K.
- **MANUAL** : Select this to fine-tune White Balance manually. Set White Balance first by using the ATW or AWC mode. After that button to MANUAL mode, fine-tune the White Balance and the Function Setup button.
- **AWC →SET** : To find the optimal luminance level for the current environment, point the camera towards a sheet of white paper and press the set button. If the environment changes, readjust it.

- White Balance may not work properly under the following conditions. In this case select the OUTDOOR mode.
  1. When the ambient illumination of the subject is dim.
  2. If the camera is directed towards a fluorescent light or is installed in a place where illumination changes dramatically, the White Balance operation may become unstable.

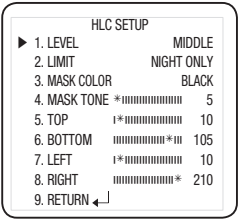
BACKLIGHT

The SCB-2002/2002H is designed so that it delivers a distinctive subject and background at the same time, even when the subject is in backlight, by adopting a function of the proprietary SV-V DSP chip.

1. When the SETUP menu screen is displayed, select 'BACKLIGHT' by using the Function Setup button. so that the arrow indicates 'BACKLIGHT'.



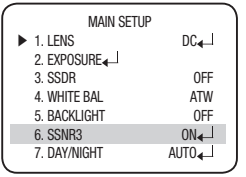
2. Select a desired mode using the Function Setup button depending on the camera purpose.
   - **OFF :** Not being used.
   - **USER BLC :** Enables a user to select a desired area on a picture and view that area more clearly.
     - LEVEL : Adjusts the brightness level of a monitoring area.
     - TOP/BOTTOM/LEFT/RIGHT : Adjust the area to be enhanced.
   - **HIC (High light Compensation) :** This function masks the strong light to minimize white out due to over exposure and preserve much of the on-screen details when the camera aims a strong light source.
     - LEVEL : Adjusts the brightness level of a monitoring area.
     - LIMIT : Enable to change the operating condition.
     - MASK COLOR/TONE : Change the color / brightness of the masking area. (Black, Red, Blue, Cyan, Magenta)
     - TOP/BOTTOM/LEFT/RIGHT : Adjust the area to be enhanced.



SSNR3

This function reduces the background noise in a low luminance environment.

1. When the SETUP menu screen is displayed, select 'SSNR3' by using the Function Setup button so that the arrow indicates 'SSNR3'.
2. Select a desired mode using the Function Setup button.
   - **ON** : Activates SSNR3 so that noise is reduced.
   - **OFF** : Deactivates SSNR3. Noise is not reduced.
3. Set the SSNR3 mode to 'ON' and press the set button. Then you can adjust the noise reduction level.



- You cannot set the SSNR3 to 'ON' or 'OFF' when the AGC mode of the 'EXPOSURE' menu is 'OFF'.
- When adjusting the noise reduction level in the SSNR3 mode, remember that the higher the level set, the more the noise level will be reduced, as will the brightness of the image.

DAY/NIGHT

You can display pictures in color or in black and white.

1. When the SETUP menu screen is displayed, select 'DAY/NIGHT' by using the Function Setup button so that the arrow indicates 'DAY/NIGHT'.
2. Select a desired mode using the Function Setup button according to the picture display you want.
   - **AUTO** : The mode is switched to 'Color' in a normal environment, but switches to 'B/W' mode when ambient illumination is low. To set up the switching time for AUTO mode, press the set button. You can turn on or off the burst signal on B/W mode.
     - BURST MODE : You can turn on or off the burst signal on B/W mode.
     - DURATION : You can select the day/night switching point.
     - DWELL TIME : You can select day/night switching delay time from.
       →3s, 5s, 7s, 10s, 15s, 20s, 30s, 40s, 60s

```
MAIN SETUP
 1. LENS                DC↵
 2. EXPOSURE↵
 3. SSDR                OFF
 4. WHITE BAL           ATW
 5. BACKLIGHT           OFF
 6. SSNR3               ON↵
▶ 7. DAY/NIGHT          AUTO↵
 8. SPECIAL↵
 9. EXIT                SAVE
```

```
AUTO SETUP
▶ 1.BURST MODE          ON
  2.COLOR→B/W
    DURATION            FAST
    DWELL TIME          5 SEC
  3.B/W→COLOR
    DURATION            FAST
    DWELL TIME          10 SEC
  4.RETURN↵
```

(PAL MODEL)

	Color → B/W	B/W → Color
Fast	2 lux	5.5 lux
Slow	1 lux	7 lux

(NTSC MODEL)

	Color → B/W	B/W → Color
Fast	2 lux	5 lux
Slow	1 lux	5.5 lux

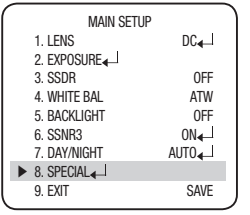
※ The day/night switching point of the camera can be adjusted.

- **EXTERN** : Ground to the grounding terminal to allow automatic switching between COLOR and B/W (Black/White).
- **COLOR** : The picture is always displayed in color.
- **B/W** : The picture is always displayed in black and white.
  You can turn on or off the burst signal on B/W mode.

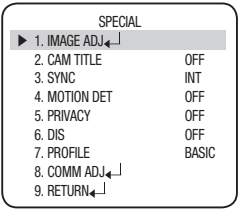
- When using a Video Auto Iris Lens, if you set the lens level to low, automatic switching between Color and Black & White may not occur.
- If the GAIN of EXPOSURE menu is set to OFF, AUTO mode is not available to select.
- When using an external input, Connect the D & N Input Port to the Ground Terminal.

SPECIAL

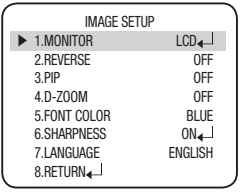
1. When the SETUP menu screen is displayed, select 'SPECIAL' by using the Function Setup switch so that the arrow indicates 'SPECIAL'.
2. Select a desired mode using the Function Setup switch.



- **IMAGE ADJ :**
  1) When the SPECIAL menu screen is displayed, select 'IMAGE ADJ' by using the Function Setup switch so that the arrow indicates 'IMAGE ADJ'.
  2) Select a desired mode using the Function Setup switch.



- **Monitor** : Please change the settings value of video appropriate to your monitor.
  - **LCD :** Please select this menu item when using an LCD monitor.
    You can change the gamma, PED level and color gain in the sub menus.



- CRT : Please select this menu item when using a CRT monitor. You can change the PED level, color gain in the sub menus.
- USER : Please use this menu item when using a monitor other than stan dard ones. You can change the gamma, PED level and color gain in the sub menus.

LCD MONITOR
▶ GAMMA 0.55
PED LEVEL 14
COLOR GAIN 5
RESET
Press SET to Return

- **Reverse** :You can reverse the picture.
  - OFF : You don't reverse the picture.
  - H-REV : You can flip the picture horizontally on the screen.
  - V-REV : You can flip the picture vertically on the screen.
  - HV-REV : You can flip the picture horizontally and vertically on the screen.
- **PIP (Picture in Picture)** :Displays a fullsize image along with the thumbnail to provide more detailed information. The position of the thumbnail is adjustable.

PIP SETUP
1. X POS 17
2. Y POS 17
3. RETURN

- **D-ZOOm** :You can use a digital zoom of x1 ~ x16.
- **FONT COLOR:** You can change the OSD font color. (White, Yellow, Green, Red, Blue)
- **SHARPNESS:** As you increase this value, the picture outline becomes stronger and clearer. Adjust this value appropriately depending on the sharpness of the picture.

SHARPNESS
Level 15
Press SET to Return

- **LANGUAGE:** You can select the menu language according to your requirements.
  - NTSC : Korean, English, French, Spanish, Japanese, Portuguese, Taiwanese
  - PAL : English, Chinese, German, Italian, French, Spanish, Russian, Czech, Polish, Romanian, Serbian, Swedish, Danish, Turkish, Portuguese
- **RETURN:** Select this to save the settings for the IMAGE ADJ menu and to return to the SPECIAL menu.

- When the V-REV or H-REV mode is enabled, the text on the screen does not flip.
- If you increase the SHARPNESS level too high, the picture may become distorted or noise may apper.

- **CAM TITLE** : If you enter a title, the title will appear on the monitor.

1. If the SPECIAL menu screen is displayed, use the Function Setup switch so that the arrow indicates 'CAM TITLE'.
2. Set it to 'ON' by using the Function Setup switch.
3. Press the Function Setup switch.
4. Use the Function Setup switch to move to a desired letter and select the letter by pressing the switch. Repeat this to enter multiple letters. You can enter up to 15 letters.
5. Enter a title, move the cursor to 'POS' and press the Function Setup switch. The entered title appears on the screen. Select the position to display the title on the screen by using the Function Setup switch and press. When the position is determined, select 'END' and press the Function Setup switch to return to the SPECIAL menu.

CAMERA TITLE SETUP

A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m
n o p q r s t u v w x y z
- . 0 1 2 3 4 5 6 7 8 9
← → CLR POS END

- When the CAM TITLE menu is 'OFF', no title will be displayed on the monitor screen even if you enter one.
- Only English is available in the mode.
- If you move the cursor to CLR and press the Function Setup switch, all the letters are deleted. To edit a letter, change the cursor to the bottom left arrow and press the Function Setup switch. Move the cursor over the letter to be edited, move the cursor to the letter to be inserted and then press the Function Setup switch.

- **SYNC** : In areas where the supply is at 60Hz(NTSC), 50Hz(PAL), you can synchronize the output phase of multiple cameras using the power synchronization function (Line-Lock) without using a synchronization signal generator.

SYNC
PHASE 0
Press SET to Return

- INT : Internal Synchronization Type
- LL : Power Synchronization Type, Line-lock

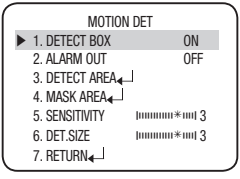
1. Press the Function Setup switch.
2. You can select a desired phase from 0 to 359 when select ‘phase’.

- EXTERN : The camera can use the external power source frequency for the synchronization. Regardless of the input voltage the EXTERN MODE is available only when an external trigger signal input into camera.

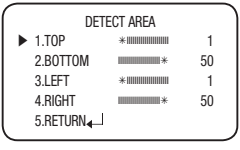
- When using AC power at 60Hz(NTSC), 50Hz(PAL) frequency, you can use the LL type synchronization.
- When the power is DC 12V, the SYNC menu is fixed to the ‘INT’ mode.

- **MOTION DET** : Commands the camera to motion-detect and trace an object.

1. If the SPECIAL menu screen is displayed, use the Function Setup switch so that the arrow indicates ‘MOTION DET’.
2. Set it to ‘ON’ by using the Function Setup switch.



- DETECT BOX : Outlines an object on the screen in a box when its movement matches a custom Motion Type.
- ALARM OUT : Releases a signal from the MD Output Terminal of the camera when an object’s movement matches a custom Motion Type.
- DETECT AREA : Defines the Motion Detection area.
- MASK AREA : Specify a detection exception area to mask. Select a mask area number and specify the size and position.



- ► AREA : You can select up to 4 areas.
- ► MODE : Determines whether to use the area selected in the AREA.
- ► TOP / BOTTOM / LEFT / RIGHT : Adjust the size and position of the selected area.
- ► RETURN : Select this to save the MASK AREA menu settings and return to the MOTION DET menu.

MASK AREA

▶ 1.AREA		AREA1
2.MODE		OFF
3.TOP		30
4.BOTTOM		110
5.LEFT		25
6.RIGHT		110
7.RETURN		

- SENSITIVITY : Set the sensitivity of the motion detection. When adjusting the sensitivity, note that the lower the level means the higher sensitivity.
- DET. SIZE : Selects an object size to detect on the screen. When adjusting the detection size, note that the higher the level means the bigger detection size.
- RETURN : Select this to save the MOTION DET menu settings and return to the SPECIAL menu.

- **PRIVACY** : Mask an area you want to hide on the screen.

1. When the SPECIAL menu screen is displayed, press the Function Setup switch so that the arrow indicates 'PRIVACY'.
2. Set up the mode using the Function Setup switch.

PRIVACY AREA SETUP

▶ 1. AREA		AREA1
2. MODE		OFF
3. MASK COLOR		GREEN
4. TRANSPARENCY		OFF
5. SEL POS		L_TOP
6. X POS		10
7. Y POS		10
8. RETURN		

- AREA: You can select up to 12 PRIVACY areas.
- MODE : Determines whether to use the area selected in the AREA SEL.
- MASK COLOR : Determine area color. You can select GREEN, RED, BLUE, BLACK, WHITE and GRAY.
- TRANSPARENCY : Adds or removes transparency from the masking area.
- SEL POS/XPOS/YPOS : Adjust the size and position of the selected area.
- RETURN : Select this to save the PRIVACY menu settings and return to the SPECIAL menu.

- **DIS (Digital Image Stabilizer)** : This function mitigates any picture movement due to external factors such as wind.

- As the DIS function uses the digital zoom the camera's resolution will decrease.
- DIS doesn't operate when background illumination is too low.
- DIS doesn't operate when object pattern is monotonic as like sky or white wall.

- **PROFILE** :

1. When the SETUP menu screen is displayed, select 'PROFILE' by using the Functfon Setup button so that the arrow fndicates 'PROFILE'.
2. Select a desired mode using the Function Setup button according to the picture display you want.

SPECIAL
1. IMAGE ADJ
2. CAM TITLE OFF
3. SYNC INT
4. MOTION DET OFF
5. PRIVACY OFF
6. DIS OFF
▶ 7. PROFILE BASIC
8. COMM ADJ
9. RETURN

- BASIC : The most common environment is set to meet.
- DAYNIGHT : It will be set automatically so it optimizes to the day or night conditions, respectively.
- BACKLIGHT : It will be set automatically so you can distinguish the object from the background in a severe backlighting scene.
- ITS : It will be set automatically so you can easily check the traffic conditions.
- INDOOR : It will be set automatically to help you take a picture in a regular indoor lighting condition.
- USER : Automatically configures the camera to your custom settings.
  1. Select Custom for Simple Setup mode.
  2. Configure the menu options to your custom settings.
  3. The settings are automatically saved as Custom mode.
  4. Profile user mode don't initialize when menu resets.

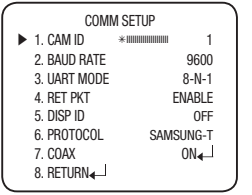
3. In the PROFILE menu, you can configure the following camera settings at once.

	BASIC	DAYNIGHT	BACKLIGHT	ITS	INDOOR	USER
SHUTTER	ESC	ESC	ESC	MANUAL(1/250)	A.FLK	-
GAIN	HIGH	HIGH	HIGH	HIGH	HIGH	-
WHITE BAL	ATW	ATW	ATW	OUTDOOR	INDOOR	-
BACKLIGHT	OFF	OFF	USER BLC	OFF	OFF	-
SSNR3	ON	ON	ON	ON	ON	-
DAY/NIGHT	AUTO	AUTO	AUTO	AUTO	AUTO	-

- **COMM ADJ (Communication Adjustment)** : This function sets up the camera communication status when controlling the camera through an external control device.

  1. When the SPECIAL menu screen is displayed, press the set button so that the arrow indicates 'COMM ADJ'.
  2. Set up the mode using the Function Setup button.

  - CAM ID : Determines the camera's identification number (between 0 and 255).
  - BAUD RATE : You can select 2400/4800/9600/19200/38400/57600 bps.



  - UART MODE : You can select NONE, EVEN or ODD for the parity bits.
  - RET PKT : Determines whether to send a command back to the controller device when a communication control command is sent to the camera.
  - DISP ID : Display camera title on top left corner of the screen.
  - PROTOCOL : Select the communication PROTOCOL. (SAMSUNG-T, SAMSUNG-E , PELCO-D, PELCO-P, BOSCH, HONEYWELL, VICON PANA., GE and AD)
  - COAX : Specify the use of coaxial communications.
    - If you encounter an error due to noise from the DVR, you can set the sensitivity level of the sub menu item to "Low " in an attempt to prevent the error. Then, you must press the MENU/ENTER (OSD KEY) button twice in a row to access the OSD menu.
  - RETURN : Select this to save the PRIVACY menu settings and return to the SPECIAL menu.

  * Initial value of communication adjustment

Item	Camera ID	BAUD RATE	UART MODE	PET PKT
Initial value	1	9600	8-NONE-1	ENABLE

- **RETURN** : Select this to save the SPECIAL menu settings and return to the MAIN SETUP menu.

EXIT

Select a desired EXIT mode using the Function Setup switch depending on the camera purpose.

- **SAVE :** Save the current settings and exit the MAIN SETUP menu.
- **NOT SAVE :** Do not save the current settings and exit the MAIN SETUP menu.
- **RESET:** Resets the camera settings to the factory defaults.
  Language and Monitor settings are not initialized.

TROUBLESHOOTING

If there are problems in operation, please refer to the items below. If the problem persists, please contact the agent you purchased this product from.

Problems	Troubleshooting
Nothing appears on the screen.	• Check that the power cord and line connection between the camera and monitor are properly connected. • Check that you have properly connected BNC cable to the camera. • Check the type of lens.
The image on the screen is dim.	• Is lens stained with dirt? Clean your lens with soft, clean cloth. • Set the monitor or DVR to the proper condition. • If the camera is exposed to very strong light, change the camera position.
The image on the screen is dark.	• Adjust the contrast feature of the monitor or DVR. • If you have an intermediate device, set the 75Ω / Hi-z properly.
The camera is not working properly, and the surface of the camera is hot.	• Check that you have properly connected the camera to an appropriate power source.
The DAY/NIGHT menu does not work.	• Check that AGC of EXPOSURE SETUP menu is 'OFF'.
The SENS-UP function does not work.	• Check that AGC of EXPOSURE SETUP menu is 'OFF'. • Check that SHUTTER of EXPOSURE SETUP menu is 'A.FLK' or 'MANUAL'.
Color is not correct.	• Check the setting of WHITE BAL SETUP menu .
The screen flickers continually.	• Ensure the camera is not pointing towards the sun.
When coaxial communication is not available:	• Make sure that the camera and monitor are installed within the recommended distance. • Use the video amplifier equivalent to coaxitron if the recommended installation distance is exceeded.

SPECIFICATIONS

Item	SCB-2002N	SCB-2002P	SCB-2002PH
Video			
Imaging Device	1/3" Super HAD CCD II		
Total Pixels	1020(H) x 508(V)	1020(H) X 596(V)	
Effective Pixels	976(H) x 494(V)	976(H) x 582(V)	
Scanning System	2:1 Interlace / Progressive		
Synchronization	Internal / Line lock / Extern		
Frequency	H:15.734KHz / V:59.94Hz	H : 15.625KHz / V : 50Hz	
Horizontal Resolution	Color : 650 TV lines. B/W : 700 TV lines		
Min. Illumination	Color : 0.1Lux @ F1.2, 0.0002 Lux (Sens-up, 512x) B/W : 0.01 Lux @ F1.2, 0.00002 Lux (Sens-up, 512x)		
S / N Ratio	52dB (AGC off, Weight on)		
Video Output	CVBS : 1.0 Vp-p / 75Ω composite		
Lens Type			
Lens Type	-		
Mount Type	C/CS MOUNT		
Operational			
On Screen Display	NTSC : Multi-language Support English, Japanese, Spanish, French, Portuguese, Korean , Taiwanese PAL : Multi-language Support English, French, German, Spanish, Italian, Chinese, Russian, Polish, Czech, Romanian, Serbian, Swedish, Danish, Turkish, Portuguese		
Camera Title	Off / On (Displayed 15 characters)		
Day & Night	Auto(ICR) / External / Color / B/W		
Backlight Compensation	Off / User BLC / HLC / SSDR		
Contrast Enhancement	SSDR		
Digital Noise Reduction (SSNRIII)	(Off / On)		
Digital Image Stabilization	Off / On		

Item	SCB-2002N	SCB-2002P	SCB-2002PH
Motion Detection	Built-in		
Privacy Masking	Off / On (12 programmable zones)		
Sens-up (Frame Integration)	2x ~ 512x		
Gain Control	Off / Low / High		
White Balance	ATW / Outdoor / Indoor / Manual / AWC (1,700°K ~ 11,000°K)		
Electronic Shutter Speed	1/60 ~ 1/120,000 sec	1/50 ~ 1/120,000 sec	
Digital Zoom	Off / On (1x ~ 16x)		
Reverse	Off / H-Rev / V-Rev / HV-Rev		
Profile	Basic, Day & Night, Backlight, ITS, Indoor, User		
PIP	Off / On		
Alarm	NONE		
Communication	Coaxial Control (SPC-300 Compatible), RS-485		
Protocol	Coax : Pelco-C (Coaxitron) RS-485: Samsung-T, Samsung-E, Pelco-D, Pelco-P, Panasonic, Bosch, Honeywell, Vicon, GE, AD		
Environmental			
Operating Temperature / Humidity	-10°C ~ +50°C (+14°F ~ +122°F) / Less than 90% RH		
Electrical			
Input Voltage/Current	Dual (24V AC±10% & 12V DC±10%		230V AC ± 10%
Power Consumption	Max. 4.2W		Max. 4.5W
Mechanical			
Dimension (WxHxD)	66 x 61 x 102mm		66 x 61 x 115mm
Weight	310g		540g

※ The specifi cation for this product may change without prior notice for product improvement.

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SALES NETWORK

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