

SAMSUNG TECHWIN

Thermal Night Vision Camera

User Manual

SCB-9060
SCB-9080

The Samsung logo is centered in a large, bold, black font. The background of the entire page is a dark, abstract pattern of glowing, white, swirling lines that create a sense of motion and depth, resembling a thermal or night vision image.

SAMSUNG

CE

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Thermal Night Vision Camera

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

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-9060/9080 SERIES

- NTSC MODEL
SCB-9060/9080N
- PAL MODEL
SCB-9060/9080P

■ MODEL DESCRIPTION

- SCB-9060/9080X



- SIGNAL SYSTEM
N → NTSC MODEL
P → PAL MODEL

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 vibration or 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 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



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

- **Thermal Night Vision Camera**

The SCB-9060/9080 Thermal Night Vision Camera is a contactless monitoring device capable of measuring the surface temperatures of all target areas, and displaying the resulting data via temperature distribution images (thermal images).

Featured by the top-notch uncooled IR detector, the sensor does not require you to prepare a separate cooling device or maintenance. In addition, its sensor boasts long wavelength sensitivity (detecting infrared radiation with wavelengths between 8-14 μm from targets and background), allowing it to produce high resolution thermal images with minimal impact from sunlight, even during outdoor daytime monitoring in clear weather.

- **Excellent Detection**

Up to 380m of detection without lighting: SCB - 9060

Up to 1.2km of detection without lighting: SCB - 9080

- **Detection of over-specified temperature**

You can specify a specific temperature, over which you can instruct the camera to detect a target.

- **IFOV - Instantaneous Field of View (Spatial Resolution)**

Featured by a small high-performance IR sensor with 0.47mrad/1.68mrad of IFOV (Instantaneous Field of View), the product can implement recording a sharper and more precise image against other cameras in the same class.

- **Dustproof, waterproof (IP66 standard certified)**

With dustproof and waterproof design, it can be installed in an outdoor place exposed to dust and rain.

- **Communications**

Remote control of OSD menus is enabled via coaxial and RS-485 communication protocols.

- Protocol: Pelco Coaxitron

- RS-485 communication protocol: SAMSUNG-T, SAMSUNG-E, PELCO-D, PELCO-P, BOSCH, HONEYWELL, VICON, PANASONIC, GE, AD

- **OSD**

The camera control is convenient by using 19 different foreign language O.S.D.

- English, Korean, German, Spanish, Italian, Chinese, Russian, Polish, Japanese, French, Turkish, Czech, Portuguese, Rumanian, Serbian, Taiwanese, Danish, Swedish, Thai

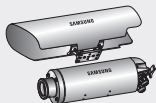
CAUTIONS FOR OPERATING TEMPERATURE

1. The camera cannot operate properly at temperatures lower than -30°C .
2. Even if the surrounding temperature is -30°C or higher, the camera may not thaw itself and operate properly depending on the installation environment.
3. Keep in Stand by mode for at least 30 minutes. Once the internal temperature reaches -20°C or higher, the camera enters operation mode.
4. Always keep the power on, so the camera can maintain its internal temperature at -20°C or higher.
5. If the camera was turned on after being left at temperatures lower than -30°C for a long duration:
 - If the internal temperature is lower than -20°C , the camera does not transmit video signals and displays a black screen along with the "WAIT UNTIL SHUT TEMP IS -20, INITIALIZING" message, instead of operating properly.
 - If the internal temperature is higher than -20°C , the camera enters operation mode.

Introduction

WHAT'S INCLUDED

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



SCB-9060/9080,
camera sun shield



User Manual



Set of Wrench (x3)



Lens cap



Bracket Screws (x2)



Camera Holder Screws (x4)

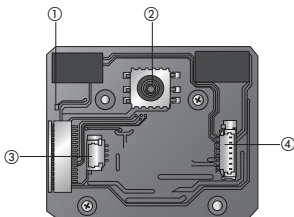
COMPONENT NAMES AND FUNCTIONS

Names of external camera parts



- ① Lens (SCB-9060 : 14mm, SCB-9080 : 50mm)
- ② Sun Shield
- ③ Video signal/communications(RS485) cable
- ④ Power cable(AC24V,50/60Hz)/ALARM Port
- ⑤ Support platform for fastening camera

Rear Terminal Placement



① POWER LED

- Power ON : Lit
- Abnormality/Warning : Flashing

② Function Setup switch

③ Terminal Block A

PIN	Name	Explanation
1	TRX+	RS485 + Communications Non-inverting input/output
2	TRX-	RS485 - Communications Non-inverting input/output
3	VIDEO	Output of video signal
4	GND	Earth-grounding of video signal

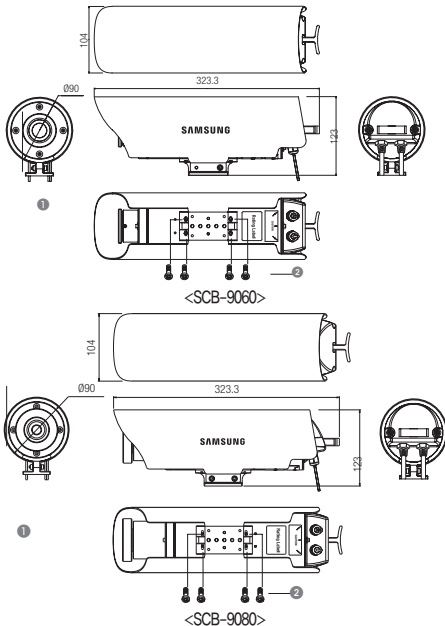
④ Terminal Block B

PIN	Name	Explanation
1	PW+	Power input AC+24V
2	PW-	Power input AC+24V
3	NC	
4	NC	
5	NC	
6	ALARM	ALARM OUT +
7	ALARM	ALARM OUT -

Connector specifications and signals

Function	Explanation	Notes
RS485 I/F (TRX+, TRX-)	Because Half-duplex communication is supported, this function is used to update F/W. Standard users should utilize the same cables as those employed at the time of shipment.	Communication terminator settings: - Default value: ON - If multiple cameras are installed : Turn only the camera measuring the furthest distance ON, and the remaining cameras OFF.
Video output (Video)	Acts as a composite video signal output.	Switch between NTSC/PAL using the menu.
Power supply (PW+/-)	Power Connection Port	AC24V,50/60Hz
LED	Notifies users using the LED display whether the power is ON/OFF, and whether a device abnormality or warning has occurred.	Power ON : Lighting Device Abnormality/Warning : Flashing
KEY controls	Enables operation of the menu controls.	Used to make adjustments.

Assembly/Adjustment Methods



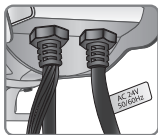
- 1 A screw to fix the focus is located on the bottom of the lens.
- 2 A sun shield is provided with this camera to allow for outdoor installation. Using the bolts and hexagon wrenches included in this package, fasten the camera unit and sun shield firmly in place. (Do not use excessive force during assembly.)



- Do not adjust the focus after purchasing this product, because it will have been set to the optimum position. Incorrectly adjusting the focus will hinder the camera's performance.
- Care must be taken lest that moisture should inflow to the product when assembling/disassembling the product. Otherwise, moisture can cause a product failure.

INPUTTING POWER

1. Remove the lens cap.
2. Engage the power. (Use the adapter provided with this product.)
3. The rated input voltage for this product is AC 24 V, 50/60 Hz.
 - This device is not fitted with a power switch. The device must be provided with power to turn it
 - After checking the label on the cable on the right side of the camera, connect the output cable of the provided adapter.



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

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

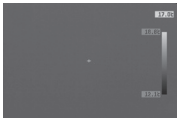
* Deviations may occur depending on the type of power cable shown in the chart above, and on the wiring manufacturer.



- A 22-18 gauge power wire is recommended for this camera.
- Voltage reinforcement will occur based on the length of the power wire. If the adapter output wire is too long, camera performance may suffer.
- Standard voltage for camera operation: AC24V±10%
- Operating the heater in a low temperature costs you a lot of power consumption. Insufficient power can cause a product failure. So use only the power outlet with rated AC24V 2.5A.

STARTUP

1. The START screen will appear after the power has been turned on.
2. After completion of initialization, thermal images will be displayed. (within 30 seconds in room temperature)



The sensor will not operate properly immediately after the power is turned on, or when switching between NARROW and WIDE ranges. As a result, thermal images will not display consistently for several seconds. Menu controls can be used to save values to be applied at subsequent start-up of the SCB-9060/9080.

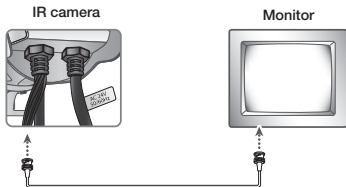
NUC(non uniformity correction)

This device will perform a calibration necessary for imaging (NUC) after the internal shutter closes. During NUC, the screen will freeze momentarily. Please note that this is not a malfunction.

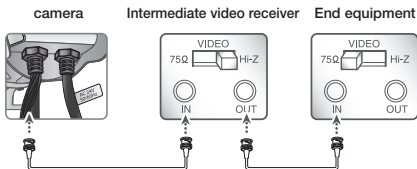
MONITOR/COMMUNICATIONS CONNECTION

■ Connecting the Monitor

Connect the video output terminal on the rear of this product to the monitor.



- Refer to the owner's manual for each device. Connection methods employed may differ depending on the monitors and peripheral devices used.
- Before connecting devices, ensure their power is turned off.
- Adjust the 75Ω/Hi-Z conversion switch for each device based on the following illustration. Select "Hi-Z" for intermediate video receivers and "75Ω" for end equipment.



■ RS485 Communications Controls

Using RS485 communications, function settings menus can be adjusted using the Samsung Techwin DVR or System controller.

(1) Controlling menus using a PC

Using an RS485 converter, connect the camera's RS485 control terminal to a serial cable.

Example) PC serial board (COM1) → serial cable → RS485 converter → camera RS485 control terminal

(2) Controlling menus using a DVR system controller

Connect an RS485 cable (TRX+, TRX-) to an RS485 control board connection terminal capable of connecting to the DVR system controller.

External communications cable	RS485 control terminal
(+) CONNECTION TERMINAL (TRX+)	485+
(-) CONNECTION TERMINAL (TRX-)	485-

MONITORING GUIDELINES

- After thermal images appear, the camera will begin to monitor its range of coverage.
 1. Do not adjust the focus if there is no particular point of focus to monitor.
 2. For an in-depth explanation of the controls used with the SCB-9060/9080, refer to the section detailing how the camera is operated on page 18.
- During monitoring, the SCB-9050/9051 will capture heat sources and display the resulting images on the monitor.
 1. In a severe change of the ambient temperature during the monitoring, set the mode to Auto and set the interval to less than 5 minutes in the NUC menu setup.
 2. Always carry out an NUC whenever sunlight or high temperature objects are within the field of view.
 4. When the camera is used continuously for a long period of time, pay attention to the buildup of dirt on the lens. A dirty lens may result in phenomena such as shortened detection distances.
 5. Even if the same item is being monitored, changes in environmental conditions such as rain and fog will affect detection distance. While operating the camera be aware of how such changes may influence detection distance.
 6. During the monitoring, make sure to comply with the use guidelines mentioned above.
 7. If the camera gets dusty, use a soft cloth to wipe off the dust.

STORAGE

Attach the lens cap before storing this device.

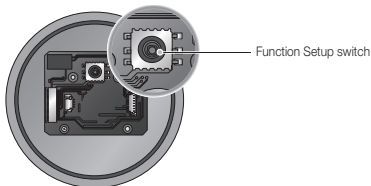
Ensure that the storage area is kept within the allowable temperature range listed in this device's product specifications. Do not place this device in a location where condensation may occur.

MENU CONFIGURATION

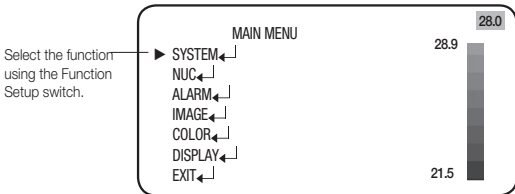
Main Menu			
SYSTEM	● COMM ● TV TYPE ● RESET	● RANGE ● LANGUAGE ● RETURN	● UNIT ● INFO
NUC	● MODE	● INSTANT NUC	● RETURN
ALARM	● TEMP AREA ● DATA	● TYPE ● RETURN	● ALARM OUT
IMAGE	● CONTRAST ● AE MODE ● ROTATION	● SHARPNESS ● SSNR ● RETURN	● BRIGHTNESS ● DZOOM
COLOR	● PALLET	● ISOTHERM	● RETURN
DISPLAY	● CAMERA ID ● POINTER ● RETURN	● DZOOM MAG ● TEMP AREA	● INDICATOR ● ISOTHERM
EXIT			

FUNCTION SETTINGS METHODS

Use the Function Setup switch within the camera.



1. Press the Function Setup switch.



- Main setup menu is displayed on the monitor screen.
2. Select a desired function using the Function Setup switch.
 - Press the Function Setup switch to move the cursor (arrow) in a desired position. Move the cursor to a desired item.
 3. Select a desired function using the Function Setup switch.
 - Press the Function Setup switch to display the selected values or status one after another. To exit the menu, select "EXIT" and press the Function Setup switch.

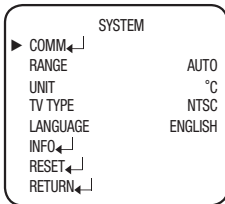
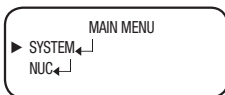


- Use the Function Setup switch for a mode item with the arrow mark ← next to it. You can move to a sub menu item in such a way.


SYSTEM

You can configure the preference settings.

1. When the SETUP menu screen is displayed, select 'LENS' by using the Function Setup switch so that the arrow indicates 'SYSTEM'.
2. Press the Function Setup switch to move to the sub menu items as shown.
 - **COMM** : Configure the communication settings for the camera.
 - PROTOCOL : Select a communication protocol for the camera; the default protocol is SAMSUNG-T. (SAMSUNG-T, SAMSUNG-E, PELCO-D, PELCO-P, BOSCH, HONEYWELL, VICON, PANASONIC, GE, AD)
 - Camera ID: Select an ID number between



Setup

- 0 and 255. (Default : 1)
 - Baud Rate : Select one from 2400/4800/9600/19200/38400/57600/115200. (Default : 9600bps)
 - COMM. MODE : Select a parity bit from NONE/EVEN/ODD. (Default: 8-N-1)
 - Return Packet: Specify the return packet.
 - Terminal: Specify the termination resistor for RS485 communications.
 - RETURN : Save your settings and return to the SYSTEM menu.
 - **TEMP RANGE** : Specify the temperature range for the incoming video signal. You can select NARROW or WIDE according to the temperature range.
 - AUTO : If you select Auto, the mode will switch between NARROW and WIDE automatically according to the ambient temperature.
 - NARROW : Activated in a temperature range of between -40 and 150.
 - WIDE : Activated in a temperature range of between 0 and 500.
-  ■ The tolerance of the temperature measurement is $\pm 15^{\circ}\text{C}$ for NARROW, and $\pm 20\%$ for WIDE within the distance of 3m from the object.
- **TEMP UNIT** : Set the temperature unit to $^{\circ}\text{C}$ or $^{\circ}\text{F}$ to your preference.
 - **TV TYPE** : Specify the video output type. Select NTSC or PAL as appropriate to your area. If the TV Type is changed, the camera will perform MENU RESET to reset itself.
 - **LANGUAGE** : Select one from English, Korean, German, Spanish, Italian, Chinese, Russian, Polish, Japanese, French, Turkish, Czech, Portuguese, Rumanian, Serbian, Taiwanese, Danish, Swedish, Thai.
 - **INFO** : Display the operation status and software version.
 - TV TYPE : Current TV type
 - PROTOCOL : Current protocol
 - CAMERA ID : ID of the current camera
 - BAUDRATE : Current baud rate
 - PARITY : Current parity bit settings
 - VERSION : S/W version of the camera
 - UFPA NO. : Unique data code for each product
 - SERIAL NO. :Serial number
 - **RESET** : Return the menu settings to the factory default.
 - **RETURN** : Save your settings and return to the main menu screen.

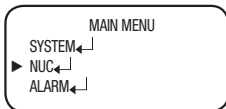
	INFO
TV TYPE	[NTSC]
PROTOCOL	[SAMSUNG-T]
CAMERA ID	[001]
BAUDRATE	[9600]
PARITY	[NONE]
VERSION	[X.XX_XXXXXX]
UFPA NO.	[m0430071]
SERIAL NO.	[]

SET KEY TO RETURN

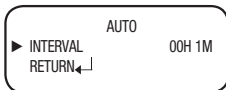
NUC

NUC (Non-uniformity Correction) regulates different characteristics of the screen pixels, which results in reproduction of a sharper and clearer image.

- When the SETUP menu screen is displayed, select 'LENS' by using the Function Setup switch so that the arrow indicates 'NUC'.
- Press the Function Setup switch to move to the sub menu items as shown.



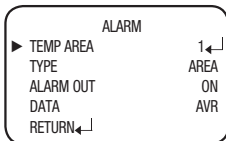
- **MODE** : Select an operation mode.
 - AUTO: Operate automatically.
 - **INTERVAL**: Specify the NUC operation interval by 1 minute.
 - MANUAL: You can manipulate a desired operation manually.
- **INSTANT NUC** : Activate NUC.
- **RETURN** : Save your NUC settings and return to the main menu screen.



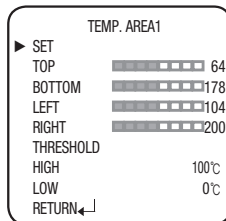
ALARM

You can specify a specific temperature for detecting a temperature change and tripping an alarm.

- When the SETUP menu screen is displayed, select 'LENS' by using the Function Setup switch so that the arrow indicates 'ALARM'.
- Press the Function Setup switch to move to the sub menu items as shown.



- **TEMP. AREA** : You can specify a total of 8 areas, for each of which you can specify the position and temperature.
 - SET: If you set SET to ON, you can define the temperature area.
 - TOP/BOTTOM/LEFT/RIGHT: Navigate through the temperature area in all directions.
 - THRESHOLD: Specify the upper and lower limits for tripping the alarm, between which the alarm will be activated.
 - RETURN : Save your temperature settings and return to the ALARM menu screen.



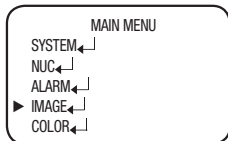
Setup

- **TYPE** : Specify the display of temperature area to either LINE or AREA.
- **ALARM OUT** : Set "ALARM OUT" to "ON/OFF". If a target appears between the upper and lower limits for tripping the alarm in each area, the alarm will be activated.
- **DATA** : Set the output data from the temperature area to: Average (AVG), Minimum (MIN) and Maximum (MAX).
- **RETURN** : Save your alarm settings and return to the main menu screen.

IMAGE

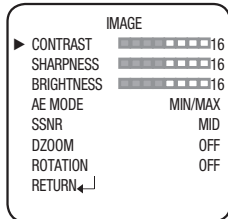
You can adjust the image settings to your preference.

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



2. Press the Function Setup switch to move to the sub menu items as shown.

- **CONTRAST** : Adjust the contrast level to between 1 and 32.
- **SHARPNESS** : Adjust the sharpness level to between 1 and 32.
- **BRIGHTNESS** : Adjust the brightness level to between 1 and 32.
- **AE MODE**
 - **BYPASS**: Do not adjust the contrast and brightness levels, and output the incoming brightness level as it is.
 - **MIN/MAX**: In normal conditions, correct the minimum and maximum values of brightness for an incoming source to optimize the contrast and brightness.
 - **WEIGHT**: If an incoming source shows a great difference in brightness, this function optimizes the contrast and brightness to prevent too dark or too bright image.
- **SSNR** : Reduce the background noise for a low contrast image.
 - **OFF** : Do not activate SSNR.
 - **LOW** : Reduce the noise less but no afterimage remains.
 - **MID** : Normally accepted mode. Reduce the noise as appropriate with less after image.
 - **HIGH** : Excellent noise reduction but the after image remains badly.



- **DZOOM** : Configure the digital zoom settings for the camera.
You can set the zoom factor to up to x4. You can move to a sub menu item and change the zoom factor or zooming area to your preference.
- **ROTATION** : Flip or rotate the image.
- **RETURN** : Save your image settings and return to the main menu screen.



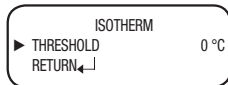
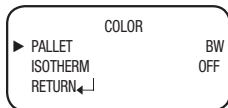
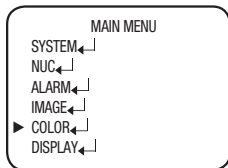
- If you change the digital zoom factor to focus on a specific portion of the screen, the bottom temperature bar will show the temperature figures specified right before the other portion of the screen gets out of the screen.
Next time it restarts, no temperature information will be displayed on the screen but the temperature background color.
- The contrast can be adjusted only to below 16 in the option setting of Color 1 or Color 2.

COLOR

Configure the color settings for the temperature indication.

1. When the SETUP menu screen is displayed, select 'LENS' by using the Function Setup switch so that the arrow indicates 'COLOR'.
2. Press the Function Setup switch to move to the sub menu items as shown.

- **PALLET** : Specify the color for each specific temperature.
 - BW : White indicates an area with a high temperature while black indicates a low-temp area.
 - WB : Black indicates an area with a high temperature while white indicates a low-temp area.
 - COLOR1 : White and yellow indicate an area with a high temperature while black and green indicate a low-temp area.
 - COLOR2 : Indicate the temperature specifically using three colors: red, yellow and green.



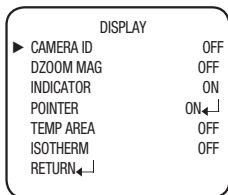
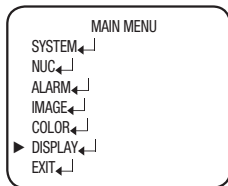
- **ISOTHERM** : You can specify the temperature threshold by between -40 and 500 degrees. Only a temperature exceeding the threshold will be displayed in the specified color.
- **RETURN** : Save your color settings and return to the main menu screen.

DISPLAY

You can configure the OSD (On Screen Display) settings to your preference.

1. When the SETUP menu screen is displayed, select 'LENS' by using the Function Setup switch so that the arrow indicates 'DISPLAY'.
2. Press the Function Setup switch to move to the sub menu items as shown.

- **CAMERA ID** : Specify the display of the camera ID.
- **DZOOM MAG** : Specify the display of the digital zoom factor.
- **INDICATOR** : Specify the display of the color bar.
- **POINTER** : Specify the display of the pointer and its position.
- **TEMP AREA** : Specify the display of the temperature area and the display type.
- **ISOTHERM** : Specify the display of the threshold values that are defined in the ISOTHERM menu.
- **RETURN** : Save your OSD settings and return to the main menu screen.



EXIT

Exit the Function Setup menu.

Factory Default

Functions		Set Value
RANGE		AUTO
UNIT		°C
NUC	MODE	AUTO
	INTERVAL	1M
ALARM	TEMP AREA	1~8(OFF)
	TYPE	AREA
	ALARM OUT	OFF
	THRESHOLD	HIGH : 100°C LOW : 0 °C
IMAGE	CONTRAST	16
	SHARPNESS	16
	BRIGHTNESS	16
	AE MODE	MIN/MAX
	SSNR	MID
	DZOOM	OFF
	ROTATION	OFF
COLOR	PALETTE	BW
	ISOTHERM	OFF
DISPLAY	CAMERA ID	OFF
	DZOOM MAG	OFF
	INDICATOR	ON
	POINTER	ON
	TEMP AREA	OFF
	ISOTHERM	OFF
RS485		PROTOCOL: SAMSUNG-T
		CAMERA ID:1
		BAUDRATE:9600
		UART MODE: 8-N-1
		RET PKT : OFF
LANGUAGE		TERMINATION : OFF
		ENGLISH

TROUBLESHOOTING

Check the points listed below if the product appears to be malfunctioning. If the problem continues, please contact the sales agent from whom the product was purchased.

PROBLEM	SOLUTION
If nothing can be seen onscreen	<ul style="list-style-type: none">▶ Verify that the power source is connected properly, and that the device is receiving power.▶ Verify that the video signal wire is connected properly.
I turned on the power, but the camera didn't start running.	<ul style="list-style-type: none">▶ Please check the environment temperature; the camera may not operate properly if it has been left at temperatures lower than -30°C for a prolonged duration.▶ Keep in Standby mode for at least 30 minutes. Once the internal temperature reaches -20°C or higher, the camera enters operation mode.
If screen images do not appear clearly	<ul style="list-style-type: none">▶ Wipe the lens with a clean cloth or brush to remove any dust that may be present.▶ Adjust the status of the monitor.▶ Change the position or angle of the camera if a large amount of bright light is displayed onscreen.
If the screen is too dark	<ul style="list-style-type: none">▶ Adjust the status of the monitor▶ Verify that intermediate processing can be performed properly between systems.
If the camera is operating abnormally, or its surface is very hot, causing black lines to appear onscreen :	<ul style="list-style-type: none">▶ Verify that the power voltage received by the camera conforms to the proper rating. Also, confirm whether performance is affected by the time of day.
If RS485 communications cannot be carried out	<ul style="list-style-type: none">▶ Verify the polarity of the RS485 communications terminal and the arrangement of the cables.▶ Verify the RS485 communications settings.

※ RS485 Communication Settings Default Values

Item	Camera No.	Communications Speed	Communications Mode	Data Reception
Default Value	1	9600	8-NONE-1	In use

Specifications

SPECIFICATIONS

	SCB-9060N	SCB-9060P	SCB-9080N	SCB-9080P
Video				
Imaging Device	320(H)x240(H) Uncooled Microbolometer			
Sensor Pitch	23.5 μ m			
Measured wavelength range	8 ~ 14 μ m, LWIR			
Video Ratio (Sensor)	30fps	25fps	30fps	25fps
Thermal Sensitivity(NETD)	<80mK @ F1.0			
Video Output	CVBS 1.0 Vp-p / 75 Ω composite, ITU-656 8bit Digital Output			
Lens Type				
Focal Length (Zoom Ratio)	14mm (Fixed)		50mm (Fixed)	
Max. Aperture Ratio	1:1.4			
Angular Field of View (HxV)	30° x 22.8°		8.6° x 6.5°	
Min. Object Distance	3m ~ ∞ , Pan focus		27m ~ ∞ , Pan focus	
IFOV (Instaneous Field of View)	1.68mrad		0.47mrad	
Focus Control	Manual			
Operational				
On Screen Display	Multi Language OSD (19 Languages) E/F/G/S//RUS/P/TUR/POR/K/J/TAIWAN/SER/ROM/SWE/DAN/ C/TAI/CZE			
NUC(Non-Uniformity Correction)	Auto/Manual Selectable			
Temperature Range	-40°C ~ +500°C			
Digital AE	Bypass, Min/Max, Weight Mode Selectable			
Brightness	32 Steps Adjustable			
Sharpness	32 Steps Adjustable			
Contrast	32 Steps Adjustable			
DNR(Digital Noise Reduction)	2D/3D Adaptive DNR, Off/Low/Middle/High Selectable			
Digital Zoom	Off / On, 1.1X ~ 4.0X Selectable			

Specifications

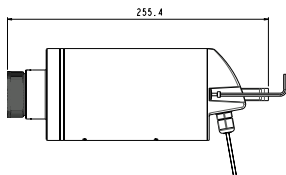
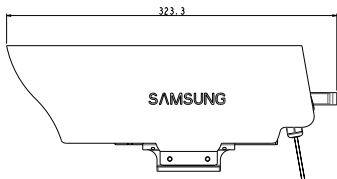
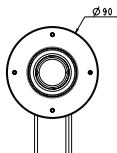
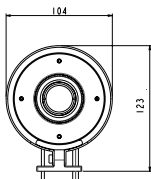
	SCB-9060N	SCB-9060P	SCB-9080N	SCB-9080P
Temperature Display	Area Adjustable 8 Zone & Position Movable Cross Point (Tolerance of temperature measurement, NARROW: $\pm 15^{\circ}\text{C}$ / WIDE: $\pm 20\%$)			
ISOTherm	Isolated Temperature Display			
Pseudo Color	B/W, W/B, Color1, Color2 Selectable			
Temp Indicator	Min/Max Scene Temperature with Color Bar			
Alarm	Temperature Detection, 1 GPIO Alarm Output			
Communication	RS-485, Coax(Pelco Coaxitron Compatible)			
Protocol	SAMSUNG-T, SAMSUNG-E, PELCO-D, PELCO-P, BOSCH, HONEYWELL, VICON, PANASONIC, GE, AD			
Environmental				
Operating Temperature / Humidity	-30°C ~ +55°C / Less than 90% RH			
Ingress Protection	IP66			
RoHS Compliant	Yes			
Electrical				
Input Voltage/Current	24VAC $\pm 10\%$			
Power Consumption	Max. 30W			
Mechanical				
Color / Material	Body : Ivory, Aluminum			
Dimension (WxHxD)	104x123x323.3mm		104x123x323.3mm	
Weight	1.6Kg		1.8Kg	

※ This specification can be changed without notice for performance improvement of product.

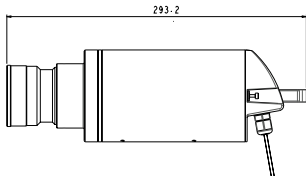
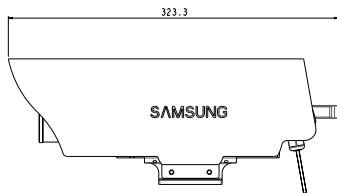
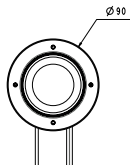
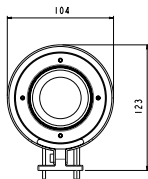
DIMENSION

Unit : mm

<SCB-9060>



<SCB-9080>



MEMO

MEMO



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