Before installing and operating this product, please read this manual thoroughly.
Before operating the camera, confirm the camera model and correct input power voltage. In order to that you can understand this manual thoroughly, we will explain the model description.

**SCO-2080R SERIES**
- NTSC MODEL
- PAL MODEL

**SCO-2080RN**
- SCO-2080RP

**MODEL DESCRIPTION**
- SCO-2080R X

**SIGNAL SYSTEM**
- N --> NTSC MODEL
- P --> PAL MODEL

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

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

**INFORMATION** - This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**WARNING** - Changes or modifications not expressly approved by the manufacturer could void the user’s authority to operate the equipment.

**WARNING** - To prevent electric shock and risk of fire hazards:
- Do NOT use power sources other than that specified.
- Do NOT expose this appliance to rain or moisture.

This installation should be made by a qualified service person and should conform to all local codes.
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Features

Ultra High Sensitivity
The built-in high sensitivity COLOR CCD produces a clear image even in 0Lux(B/W, IR-LED ON) or lower illumination.

High Resolution
By adopting a diagonal 6mm(1/3”) 410,000 (NTSC) pixel, 470,000 (PAL) pixel SONY CCD, the camera produces clear picture quality with a horizontal resolution of 600 TV lines for color and a horizontal resolution of 700TV lines for B/W mode.

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

DAY&NIGHT(ICR)
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 night-time 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.

Outdoor Visibility range 50M
The IR LEDs of the SCO-2080R automatically illuminates viewing area in the extreme darkness allowing the camera a long-range visibility of up to 50 meters.

IR MODE Function
This function prevents the saturation of the image by the IR illuminators at short distance.

IP66 Approved/Dust and Rain Resistant
With dust and rain resistant design, the camera can be installed outside under building eaves or places that are exposed to the dust and rain.

Communication
RS-485, Coaxial communication methods are supported.

- RS-485 Communications: SAMSUNG-T, SAMSUNG-E, PELCO-P, PELCO-D, VICON, PANASONIC, BOSCH, HONEYWELL
- Coaxial Communications: Pelco Coaxitron

Miscellaneous Functions
HLC (High Light Compensation), SENS-UP, FLIP(H/V-REV), D-ZOOM, SHARPNESS, MOTION DETECTION and PRIVACY functions are provided.

OSD
The camera’s OSD is complimented by 18 languages.

- NTSC: Korean, English, French, Spanish, Japanese, Portuguese, Taiwanese
- PAL: English, French, German, Spanish, Italian, Chinese, Russian, Czech, Polish, Romanian, Serbian, Swedish, Danish, Turkish, Portuguese
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.

**Warnings & Cautions**

This information is provided to ensure your safety and to prevent any losses, financial or otherwise. Please read it carefully and use the product accordingly.

* For product inquiries, please contact the retail shop where you bought the camera. The use of equipment such as an aerial ladder while providing after-sales service shall be at your expense.

**Notes**

- Please make sure the product is installed appropriate places where secured from flood, such as under the eaves, to operate properly.
- This product is certified as IP66 standard. However, if there is any flood concerns, it is highly recommended to use an outdoor Housing When you install the camera inside an outdoor Housing, please use one of the following methods:
  1. Remove the front glass of Housing before installing the camera.
  2. To keep the front glass of Housing, remove the front cover, and then put the camera close to the front glass.

**Warning/Attention/Special Mark Messages**

- ![Warning](image1.png) Ignoring this information may result in death or serious personal injuries.
- ![Warning](image2.png) Ignoring this information may result in material loss or personal injuries.
- ![Special Mark](image3.png) Indicates "Never Allowed."
- ![Special Mark](image4.png) Indicates "No Disassembling."

**Precautions**

- Do not install under extreme temperature conditions.
  - Use only under temperature conditions between -10°C and +50°C. Provide good ventilation when using in high temperature conditions.
- Do not install in high humidity environment.
  - May lower image quality.
- Do not install under unstable lighting conditions.
  - Severe lighting changes or flickering may hinder normal camera operation.
- Avoid touching the camera lens.
  - The lens is the most important component of the camera. Be careful not to smear it with fingerprints.

**Correct Disposal of This Product**

(Waste Electrical & Electronic Equipment)

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

This marking shown on the product or its literature, indicates that it should not be disposed of with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

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

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

Do not drop the camera or subject it to physical shock.

Never keep the camera face to strong light directly.

May cause a product malfunction.

May damage the CCD.

Do not expose the camera to radioactivity.

Radioactivity exposure may damage the CCD.

Notes

- Exposure to a spotlight or an object emitting strong light may cause smear or blooming.
- Ensure that the power source complies with normal specifications before supplying it to the camera.
- In case of IR LED has been lighted, do not lighten directly eye.

Components and Accessories

1. SCO-2080R
2. Sunshield
3. Sunshield Adaptor (1EA)
4. Tapping Screw (3EA)
6. Installation Video Output Cable

Overview

FRONT

1. Camera Sunshield
2. Sunshield adaptor : Fixing the sunshield onto the camera.
3. Focus lever : Set focus of lens by turn the focus lever.
4. Zoom lever : Set zoom magnification of lens by turn the zoom lever.
5. Front cover
6. Function Setup Switch :
   Display the menu on the screen and move the cursor to four directions to confirm status or after changing a selected item.
7. Video Output Terminal to Monitor :
   Used for monitoring of video output When camera installation.
Adjust to Lens

Adjust the lens's zoom and focus

1. Remove the sunshield from the camera.
2. Remove the front cover from the camera by turning it counterclockwise.
3. Unlock the Zoom or Focus lever before adjusting the lens.
4. Adjust the zoom & focus by moving the lever counterclockwise for (NEAR & TELE) and clockwise for (WIDE & FAR) position.
5. After adjustment, tighten the zoom or focus levers, taking care not to adjust the zoom/focus position.
6. Please, close and tighten the front cover.
7. Replace the sunshield.

Notes

- If the front cover is cross threaded or not correctly tightened the camera housing will not be weatherproof.
- When you combine the front cover, combine the triangle of front cover and triangle of main body confront each other.

Overview

- When you adjust to the ZOOM & FOCUS of the lens, Please remove the front cover from the camera, by turning the cover counterclockwise.
- To adjust the zoom & focus loosen the individual levers before tightening them again.
- To ensure the weatherproof integrity is maintained, ensure the front cover is tightened correctly.

Notes

- Power input terminal : Connect the power as specified for each model here.
- Video output terminal : Video signals are output through this port. Connect this port to the Video IN port of a monitor.
- RS-485 control terminal : You can control SETUP MENU through this port by using external controllers like a Remote controller that RS-485 Communication is supported. For details, see page 14.
**Connecting to Monitor**

Please connect the video output terminal located on the back of the camera to the monitor.

- The connection method varies depending on the type of monitor and accessories. Please refer to the user’s manual for each instrument.
- Please turn off the power when connecting.

**Connecting to Power**

The recommended adaptor specification for SCO-2080RN/P is DC 12V/4A, AC 24V/2A over.

Please check the standard power requirement before connecting the power. (Recommend AC 24A/2A over adaptor for a long-distance.)

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

<table>
<thead>
<tr>
<th>Copper wire size (AWG)</th>
<th>#24 (0.22mm²)</th>
<th>#22 (0.33mm²)</th>
<th>#20 (0.52mm²)</th>
<th>#18 (0.83mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance value (Ω/m)</td>
<td>0.078</td>
<td>0.050</td>
<td>0.030</td>
<td>0.018</td>
</tr>
<tr>
<td>Voltage drop (V/m)</td>
<td>0.028</td>
<td>0.018</td>
<td>0.011</td>
<td>0.006</td>
</tr>
</tbody>
</table>

- As shown in the table above, voltage decreases as the wire gets longer. Therefore having an excessively long distance between the power adaptor and the camera may affect the camera’s performance.

- 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.

**Notes**

- Please use a power adaptor that meets the required standards.
- Please connect the power after installation.
RS-485 communication control

Connecting to RS-485 Control Cable

Using RS-485 communication will enable you to control the OSD menu from a SAMSUNG TECHWIN System Controller or DVR.

(1) Connection to a PC.
Connect the camera to the PC via a RS-485 converter using RS-485 and a serial cable.
EX) SERIAL PORT OF THE PC(COM1) — SERIAL CABLE — RS-485 CONVERTER — RS-485 CONTROL CABLE

(2) Connection to a DVR or System Controller.
Connect the RS-485 cable to the connection ports of the DVR or System Controller.

<table>
<thead>
<tr>
<th>485 Control Board Connection Port</th>
<th>RS-485 Control Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+) CONNECTION TERMINAL</td>
<td>WHITE (TRX+)</td>
</tr>
<tr>
<td>(-) CONNECTION TERMINAL</td>
<td>BLUE (TRX-)</td>
</tr>
</tbody>
</table>

* RS-485 Communication establishment initial value

<table>
<thead>
<tr>
<th>Item</th>
<th>Camera ID</th>
<th>BAUD RATE</th>
<th>UART MODE</th>
<th>RET PCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial value</td>
<td>1</td>
<td>9600</td>
<td>8-NONE-1</td>
<td>ENABLE</td>
</tr>
</tbody>
</table>

Notes

- When making a control system to control the camera, please use to the protocol SAMSUNG-T, SAMSUNG-E, PELCO-P, PELCO-D, VICON, PANASONIC, BOSCH, HONEYELL.
- When you connecting to RS-485 CONTROL TERMINAL, please peel off the outer skin inside the RS-485 CONTROL TERMINAL.
- In case of SCC-101 connection, change communication mode to "8-E-1" at "Communication configuration" menu. (For more information, refer to SCC-101 manual.)

Using Coaxial Communications

- Coaxial Communications System
- OSD Control method

<table>
<thead>
<tr>
<th>CAMERA</th>
<th>DVR</th>
<th>CONTROLLER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td>MENU/ENTER</td>
<td>OSD KEY</td>
</tr>
<tr>
<td>UP</td>
<td>UP KEY</td>
<td>JOYSTICK UP</td>
</tr>
<tr>
<td>DOWN</td>
<td>DOWN KEY</td>
<td>JOYSTICK DOWN</td>
</tr>
<tr>
<td>LEFT</td>
<td>LEFT KEY</td>
<td>JOYSTICK LEFT</td>
</tr>
<tr>
<td>RIGHT</td>
<td>RIGHT KEY</td>
<td>JOYSTICK RIGHT</td>
</tr>
</tbody>
</table>

Notes

- If the camera is controlled through coaxial communication, please use a video amp intended for coaxial communications. Regular video amps do not transfer coaxial signals.

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.

<table>
<thead>
<tr>
<th>Distance</th>
<th>Recommended Cable Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>300m</td>
<td>3C2V(RG-59/U)</td>
</tr>
<tr>
<td>450m</td>
<td>5C2V(RG-6/1)</td>
</tr>
<tr>
<td>600m</td>
<td>7C2V(RG-11/U)</td>
</tr>
</tbody>
</table>
Operating Your Camera

Menu Configuration

<table>
<thead>
<tr>
<th>MAIN SETUP</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LENS</td>
<td>DC</td>
</tr>
<tr>
<td>EXPOSURE</td>
<td>BRIGHTNESS SHUTTER AGC</td>
</tr>
<tr>
<td></td>
<td>SENS-UP RETURN</td>
</tr>
<tr>
<td>WHITE BAL</td>
<td>ATW OUTDOOR INDOOR</td>
</tr>
<tr>
<td>SSDR</td>
<td>OFF ON</td>
</tr>
<tr>
<td>BACKLIGHT</td>
<td>OFF BLC HLC</td>
</tr>
<tr>
<td>SSNR3</td>
<td>OFF ON</td>
</tr>
<tr>
<td>DAY/NIGHT</td>
<td>COLOR B/W AUTO</td>
</tr>
<tr>
<td>SPECIAL</td>
<td>IMAGE ADJ CAM TITLE SYNC</td>
</tr>
<tr>
<td></td>
<td>MOTION DET PRIVACY DIS</td>
</tr>
<tr>
<td></td>
<td>COMM ADJ LANGUAGE RETURN</td>
</tr>
<tr>
<td>EXIT</td>
<td>SAVE NOT SAVE RESET</td>
</tr>
</tbody>
</table>

Menu Setup

Use the Function Setup Switch within the camera.

1. Press the Function Setup switch.
   • Main setup menu is displayed on the monitor screen.

Notes

• An item with the ↓ icon also has sub menus. To select a sub menu, select an item with the icon and press the Function Setup switch.
• 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 switch so that the arrow indicates ‘LENS’.
2. DC : You can adjust the minimum shutter and maximum value of ESC shutter mode.

MAIN SETUP

1. LENS  DC
2. EXPOSURE

3. WHITE BAL  ATW
4. SSDR OFF
5. BACKLIGHT OFF
6. SSNR3 ON
7. DAY/NIGHT AUTO
8. SPECIAL
9. EXIT SAVE

2. Select a desired function using the Function Setup switch.
   • Place the cursor over a desired item.
3. Set up a selected item by using the Function Setup switch.
4. To finish the setting, select ‘EXIT’ and press the Function Setup switch.

Changes the status using the Function Setup switch.

Using this function, you can control the screen brightness.
1. When the SETUP menu screen is displayed, select ‘LENS’ by using the Function Setup switch so that the arrow indicates ‘LENS’.
2. DC : You can adjust the minimum shutter and maximum value of ESC shutter mode.

MAIN SETUP

1. LENS  DC
2. EXPOSURE

3. WHITE BAL  ATW
4. SSDR OFF
5. BACKLIGHT OFF
6. SSNR3 ON
7. DAY/NIGHT AUTO
8. SPECIAL
9. EXIT SAVE

3. THE Lens mode has sub menu items as listed below.
   - BRIGHTNESS : Adjusts the video brightness.
Operating Your Camera

- **FOCUS ADJ** : To adjust the DC lens focus correctly, you must activate the Focus Settings mode under each lens menu. Activate the Focus Settings mode, adjust the lens focus, and then deactivate the settings mode.

**Notes**
- If color rolling occurs when using a DC lens, set Shutter to Fixed (---).

### EXPOSURE

1. When the SETUP menu screen is displayed, select 'EXPOSURE' by using the Function Setup Switch.
2. Select a desired mode using the Function Setup switch.

**Notes**
- When the SHUTTER is set to MANUAL or A.FLK mode, SENS-UP will be disabled.

**AGC(AUTO GAIN CONTROL)** : The higher the gain level, the brighter the screen - but the higher 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.

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

**White Balance (White Bal)**

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 switch so that the arrow indicates ‘White Bal’.
2. Select a desired mode using the Function Setup switch.
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)
- **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 switch to MANUAL mode, fine-tune the White Balance and then press the Function Setup switch.
- **AWC — SET**: To find the optimal luminance level for the current environment, point the camera towards a sheet of white paper and press the Function Setup switch. If the environment changes, readjust it.

**Notes**

- White Balance may not work properly under the following conditions. In this case select the AWC mode.
- When the color temperature of the environment surrounding the subject is out of the control range (e.g., clear sky or sunset).
- When the ambient illumination of the subject is dim.
- 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.

**SSDR (Samsung Super Dynamic Range)**

SSDR illuminates darker spots of an image while retaining the same light level for brighter spots to even out the overall brightness of images with high contrast between bright and dark spots.

1. When the SETUP menu screen is displayed, select ‘SSDR’ by using the switch so that the arrow indicates ‘SSDR’.
2. Use the switch to change the SSDR level according to the contrast between bright and dark areas.

**BACKLIGHT**

Unlike conventional cameras, the SCO-2080R is designed to deliver a distinctive subject and background at the same time, even when the subject is backlight, by using the features of the proprietary W-V DSP chip.

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

2. Select a desired mode using the Function Setup switch.

- **BLC**: Enables a user to directly select a desired area from a picture, and to view the area more clearly.
- **HLC (High Light Compensation)**:
  - **LEVEL**: Adjust level of the HLC function.
  - **LIMIT**: Enable to change the operating condition.
  - **MASK COLOR/TONE**: Change the color / transparency of the masking area.
Operating Your Camera

(Black, Red, Blue, Cyan, Magenta)
- TOP/BOTTOM/LEFT/RIGHT : Adjust the area to be enhanced

- OFF : Not being used

3. Select a desired mode using the Function Setup switch and press the Function Setup switch.
- Select ‘BLC’ to adjust the area to be enhanced then adjust the level.
- HLC : Enable the user to change the level, limit, mask color/tone and area.

**Notes**
- Because there can be a difference in the effectiveness of HLC according to the amount of light area in the screen, optimize the installation angle for the best HLC performance.
- When dark, the HLC is only activated when a bright light exceeding a specific size in NIGHT ONLY mode.
- The HLC is not activated in day light or when bright light is not present at night in NIGHT ONLY mode.
- BLC Function doesn’t work in the B/W mode of the DAY/NIGHT menu.

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 switch so that the arrow indicates ‘SSNR3’.

2. Select a desired mode using the Function Setup switch.
- OFF : Deactivates SSNR3. Noise is not reduced.
- ON : Activates SSNR3 so that noise is reduced.

3. Set the SSNR3 mode to ‘ON’ and press the Function Setup switch. Then you can adjust the noise reduction level.

**Notes**
- 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.
Operating Your Camera

**DAY/NIGHT**

You can display pictures in color or black and white.

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

2. Select a desired mode using the Function Setup Switch according to the picture display you want.

- **COLOR**: The picture is always displayed in color.
- **B/W**: The picture is always displayed in black and white.
  - **BURST MODE**: You can turn on or off the burst signal on B/W mode.
  - **IR MODE**: When IR LED is turned on in B/W, the objects can be clearly identified due to the function that decreases screen saturation of objects within a short distance.
  - **TOP/BOTTOM/LEFT/RIGHT**: Adjust the range according to the location of objects.
  - **IR LEVEL**: Select LOW when objects appears within a short distance or select HIGH when objects appears within a long distance on the screen.
  - **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 Function Setup switch. 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 brightness of illumination about changing the day/night mode.
- **DWELL TIME**: You can select the duration time about changing the day/night mode.
  → 3s, 5s, 7s, 10s, 15s, 20s, 30s, 40, 60s

### Notes

- When AGC in the EXPOSURE menu is 'OFF', '---' mode operates as like selecting 'COLOR' mode and 'AUTO' mode can not be selected.

<table>
<thead>
<tr>
<th>Color → B/W</th>
<th>B/W → Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast</td>
<td>2.5 lux</td>
</tr>
<tr>
<td>Slow</td>
<td>1 lux</td>
</tr>
</tbody>
</table>

* The day/night switching point of the camera can be adjusted.
Operating Your Camera

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.

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

IMAGE ADJ:
1) When the SETUP 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.

- V-REV: You can flip the picture vertically on the screen.
- H-REV: You can flip the picture horizontally on the screen.
- 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.
- MONITOR: Please change the settings value of video appropriate to your monitor.
  - LCD: Please select this menu item when using a LCD monitor.
  - CRT: Please select this menu item when using a CRT monitor.
  - USER: Please use this menu item when using a monitor other than standard ones. You can change the gamma, PED level, and color gain in the sub menus.
- RETURN: Select this to save the settings for the IMAGE ADJ menu and to return to the SETUP menu.

Notes
- 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 appear.
Operating Your Camera

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 Function Setup 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 the Function Setup switch. When the position is determined, select 'END' and press the Function Setup switch to return to the SPECIAL menu.

Notes
- 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 this 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.
- INT: Internal Synchronization Type
- L/L: Power Synchronization Type, Line-lock

MOTION DET:
This product has a feature that allows you to observe movement of objects in 8 different areas on the screen, and the words 'MOTION DETECTED' appear on the screen when movement is detected.
Activity can be monitor more efficiently.
1) When the SPECIAL menu screen is displayed, press the Function Setup switch so that the arrow indicates 'MOTION DET'.
2) Set up the mode using the Function Setup switch.
   - SENSITIVITY: You can select up to 8 MD areas. When SENSITIVITY number is high, motion detection sensitivity is increased to recognize even small movement.
   - AREA MODE: Determines whether to use the MD area selected in SENSITIVITY.
   - SEL POS: Determines which of the 4 vertices of each MD area is to be used.
   - XPOS: Determines the coordinate of the horizontal axis for SEL POS.
   - YPOS: Determines the coordinate of the vertical axis for SEL POS.
   - FILL→SET: Fills in a selected MD area. The color of the area can be selected from brown, orange, blue, cyan, green, yellow, magenta and red.
   - RETURN: Select this to save the MOTION DET menu settings and return to the SPECIAL menu.
Operating Your Camera

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.
   - AREA : You can select up to 12 PRIVACY areas.
   - MODE : Determines whether to use the area selected in the AREA.
   - MASK COLOR : Determine area color. You can select Green, Red, Black, White, Gray.
   - MASK TONE : Adjust the brightness of MASK COLOR.
   - TOP/BOTTOM/LEFT/RIGHT : 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.

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 Function Setup switch so that the arrow indicates ‘COMM ADJ’.
2) Set up the mode using the Function Setup switch.
   - 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 : You can select one of various protocols. SAMSUNG-T, SAMSUNG-E, PELCO-P, PELCO-D, VICON, PANASONIC, BOSCH, HONEYWELL.

* Initial value of communication adjustment

<table>
<thead>
<tr>
<th>Item</th>
<th>Camera ID</th>
<th>BAUD RATE</th>
<th>UART MODE</th>
<th>RET PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>1</td>
<td>9600</td>
<td>8-NONE-1</td>
<td>ENABLE</td>
</tr>
</tbody>
</table>

LANGUAGE : You can select the menu language according to your requirements.

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

Notes
- 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.
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.

• Nothing appears on the screen.
  ▶ Check that the power cord and line connection between the camera and monitor are fixed properly.
  ▶ Check that you have properly connected UTP cable or BNC cable to the camera.

• The image on the screen is dim.
  ▶ Is lens stained with dirt? Clean your lens with soft, clean cloth.
  ▶ Set the monitor to proper condition.
  ▶ If the camera is exposed to too strong light, change the camera position.

• The image on the screen is dark.
  ▶ Adjust the contrast feature of the monitor.
  ▶ 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 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’.

• The Motion Detection function does not work.
  ▶ Check that MOTION DET of SPECIAL SETUP menu is ‘OFF’.

• Color is not correct.
  ▶ Check the setting of WHITE BAL SETUP menu.

• The screen flickers continually.
  ▶ Check that direction of camera turns toward 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.

• IR-LED isn’t lighted.
  ▶ Isn’t DAYNIGHT function setting up the color mode?
  ▶ Please change the AUTO or B/W mode.

• The camera is not waterproof.
  ▶ Please check the Front Cover and Main Body by the following Guide Label.

Specifications

<table>
<thead>
<tr>
<th>SCO-2080RN</th>
<th>SCO-2080RP</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTRICAL</td>
<td></td>
</tr>
<tr>
<td>Input Voltage</td>
<td>DC 12V ±10% / AC 24V ±10%</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Max 6.8W / 6.5W (IR-LED On)</td>
</tr>
<tr>
<td>VIDEO</td>
<td></td>
</tr>
<tr>
<td>Imaging Device</td>
<td>1/3 inch, Diagonal 6mm Super HAD CCD</td>
</tr>
<tr>
<td>Total Pixels</td>
<td>811(H) x 598(V) / 795(H) x 596(V)</td>
</tr>
<tr>
<td>Effective Pixels</td>
<td>768(H) x 494(V) / 752(H) x 582(V)</td>
</tr>
<tr>
<td>Scanning System</td>
<td>2:1 Interface</td>
</tr>
<tr>
<td>Synchronization</td>
<td>Internal /Line-Lock</td>
</tr>
<tr>
<td>Frequency</td>
<td>H : 15.734kHz V:59.94Hz / H: 15.625kHz V: 50.00Hz</td>
</tr>
<tr>
<td>Horizontal Resolution</td>
<td>COLOR: 600TV line, BW: 700TV line</td>
</tr>
<tr>
<td>Min. Illumination</td>
<td>LED ON : 0.1Lux</td>
</tr>
<tr>
<td>Visibility distance(IR LED)</td>
<td>50m (32EA)</td>
</tr>
<tr>
<td>S/N (Y Signal)</td>
<td>52dB (Weight On, AGC Off)</td>
</tr>
<tr>
<td>VIDEO</td>
<td></td>
</tr>
<tr>
<td>Image Output</td>
<td>CVBS : 1.0Vp-p, 75Ω composite</td>
</tr>
<tr>
<td>LENS</td>
<td></td>
</tr>
<tr>
<td>Zoom Ratio</td>
<td>3.6x (Manual)</td>
</tr>
<tr>
<td>Focus Length</td>
<td>2.8 ~ 10.0mm (F1.2)</td>
</tr>
<tr>
<td>Angular Field of View</td>
<td>H : 94.4°(Wide) ~ 28°(Tele) / V : 69.2°(Wide) ~ 21°(Tele)</td>
</tr>
<tr>
<td>OPERATIONAL</td>
<td></td>
</tr>
<tr>
<td>Electronic Shutter Speed</td>
<td>1/60 ~ 1/120k sec / 1/50 ~ 1/120k sec</td>
</tr>
<tr>
<td>On Screen Display</td>
<td>NTSC : 7 Languages, PAL : 15 Languages</td>
</tr>
<tr>
<td>SSDR</td>
<td>On / Off (level adjustable)</td>
</tr>
<tr>
<td>Backlight Compensation</td>
<td>BLC / HLC / OFF</td>
</tr>
<tr>
<td>Day &amp; Night</td>
<td>COLOR / BW / AUTO (0-2)</td>
</tr>
<tr>
<td>Gain Control</td>
<td>Low / High / Off</td>
</tr>
<tr>
<td>White Balance</td>
<td>ATW / Outdoor / Indoor / Manual / AVIC (1,700°K ~ 11,000°K)</td>
</tr>
<tr>
<td>SENS-UP ( smear integration)</td>
<td>Auto / Off (Selectable x2 ~ x16)</td>
</tr>
<tr>
<td>Motion Detection</td>
<td>On / Off (8 Programmable zones)</td>
</tr>
<tr>
<td>Privacy Masking</td>
<td>On / Off (12 Programmable zones)</td>
</tr>
<tr>
<td>3D Noise Filter (SSNRH)</td>
<td>On / Off (level adjustable)</td>
</tr>
<tr>
<td>Digital Zoom</td>
<td>On / Off (x1 ~ x16)</td>
</tr>
<tr>
<td>Digital Image Stabilization (DIS)</td>
<td>On / Off</td>
</tr>
<tr>
<td>Camera Title</td>
<td>On / Off (Displayed 15 Characters)</td>
</tr>
<tr>
<td>Sharpness</td>
<td>On / Off (level adjustable)</td>
</tr>
<tr>
<td>Flip / Mirror</td>
<td>On / Off</td>
</tr>
<tr>
<td>Communication</td>
<td>Coaxial, RS-485</td>
</tr>
<tr>
<td>Protocol</td>
<td>Coaxial(Pelco), RS-485(SAMSUNG-T, SAMSUNG-E, PELCO-P, PELCO-D, VICON, PANASONIC, BOSCH, HONEYWELL)</td>
</tr>
<tr>
<td>ENVIRONMENTAL</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature / Humidity</td>
<td>-10°C ~ +55°C / Less than 90% RH</td>
</tr>
<tr>
<td>MECHANICAL</td>
<td></td>
</tr>
<tr>
<td>Water Resistance</td>
<td>IP66</td>
</tr>
<tr>
<td>Dimension</td>
<td>Ø77mm(W) x 216mm(H) (BRACKET ANGLE 90°), 284mm (BRACKET ANGLE 180°)</td>
</tr>
<tr>
<td>Weight</td>
<td>1Kg</td>
</tr>
</tbody>
</table>

※ The specification for this product may change without prior notice for product improvement.
DECLARATION OF CONFORMITY

Application of Council Directive(s)  
2004 / 108 / EC

Manufacturer’s Name  
SAMSUNG TECHWIN CO., LTD

Manufacturer’s Address  
SAMSUNG TECHWIN CO., LTD
42, SUNGJU-DONG CHANGWON-CITY,  
KYUNGNAM, KOREA, 641-716

European Representative Name

European Representative Address

Equipment Type/Environment  
CCTV Camera

Model Name  
SCO-2080RP

Beginning Serial NO.  
C5AM6V3Z200001X

Year of Manufacture  
2010.02.01

Conformance to  
EN 55022 : 2006
EN 50130-4 : 2003

We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

Manufacturer  
SAMSUNG TECHWIN CO., LTD

Legal Representative in Europe

Signature  
Signature

Full Name  
BONJENG GU

Full Name

Position  
QUALITY CONTROL MANAGER

Position

Place  
CHANGWON, KOREA

Place

Date  
2010.02.01

Date

COLOR CCD CAMERA

User Guide