



SD/HD Analog to HDMI/CVBS Converter

SC-MAC02

User's Manual



SC-MAC02

Precaution and Safety Guidelines

The content of this guideline is to protect the safety of users and prevent property damage.

Be sure to read this user's manual thoroughly and use the device correctly.

Warning (If you do not keep any of the below guidelines, you may get seriously injured or cause somebody's death.)

■ **Be sure to install the product after unplugging power cord. Also, do not use several power plugs at the same time.**

- It may cause abnormal heat, fire and electric shock.

■ **Do not leave the device at any place that water falls or splashes. Also, do not put anything full of water such as a flower vase on the device.**

- It may cause malfunction or fire if liquid goes into the device.

■ **Do not bend the power cord by excessive force. Make sure the power cord is not crushed by heavy things.**

- It may cause fire.

■ **Do not open the lid arbitrarily as this device has high voltage part inside. Never disassemble, repair or modify it.**

- By abnormal working, it may cause fire, electric shock and personal injury.

■ **Do not install this product in places with high humidity, dust, or soot.**

- It may cause electric shock and fire.

■ **Do not tug at the power cord section or unplug the power plug with wet hands. If the power cord is loose, do not plug in.**

- There may be a risk of fire and electric shock.

■ **Always keep the location of the appliance clean during or after installation to prevent dust. Especially when cleaning the device, wipe it with dry towel and do not use water, thinner or organic solvent.**

- It may damage the case of this device, and cause malfunction or electric shock.

■ **Keep the device in a cool place where doesn't let direct sunlight. Keep it at a proper temperature and avoid heating appliances like candle or heater. Also, keep the equipment or tools away from places where people come and go.**

- It may cause fire.

■ **Pay attention to possible hazards in the workplace, such as wet floor, ungrounded power extension cables, old power cords and a lack of safety earth. Consult your place of purchase or professional if problems arise.**

- It may cause fire and electric shock.

■ **Keep the back of the product more than 15cm and the sides more than 5cm from the wall. If you install the product too close to the wall, it can cause the cable to be bend, compressed too hard or break, as various external input/output ports such as power cords protrude from the back of the product.**

- It may cause fire, electric shock and personal injury.

■ **Concerning the input voltage for operating this device, a voltage range must be within 10% of rated voltage, and the power outlet must be grounded. Also, do not use a heat source such as a hair dryer, iron and refrigerator to the same power unit.**

- It may cause abnormal heat, fire and electric shock.

Caution (If you do not keep any of the below guidelines, you may get injured or suffer property loss.)

- **Avoid installing near strong magnetic fields or radio waves and wireless devices such as radio or TV.**
 - Install in places without any magnetics, radio waves or severe vibrations.
- **Proper ambient temperature and humidity are recommended.**
 - Avoid extremely high temperatures(over 50°C) or low(below -10°C), and humid conditions.
- **Do not place heavy items on the product or let foreign substances enter inside the device.**
 - It may cause failure.
- **Install in well ventilated place, and avoid direct sunlight or heat appliance.**
- **Install at a flat and stable place. Do not use an upright or slanted position.**
 - It may not operate properly or might be dangerous due to the fall of the device.
- **Strong shock or vibration may cause device failure, so be careful when using the device.**
 - Install in a place without severe vibration.
- **If you notice any unusual noise or smell, unplug the power supply immediately and contact the place of purchase or service center.**
 - There may be a risk of fire and electric shock.
- **Circulate air properly in the system operating room and fix the cover of the main body of the product firmly.**
 - It may cause failure by surrounding environment factors.
- **Refer the device to the service center and get regular checkup to maintain the performance of the system.**
 - We are not responsible for any damages caused by user's carelessness.
- **Be sure to plug the power cord with grounded outlet.**
 - There is a risk of electrical shock and personal injury.
- **Place the power plug in a location that is easy to operate.**
 - If a failure of the product occurred, the power plug must be unplugged to power down completely. The power button on the main body of the product does not completely cut off the power.
- **The transmission medium(CABLE) must be a coaxial cable.**
- **Do not use this device in close proximity to a device that produces strong waves such as radio set(TRANSEIVER, Walkie-talkie, etc.) or repeater. It may affect the video signal, or cause disorders such as noise or crack on the screen.**
- **Transmission distance may vary depending on the type of coaxial cable.**
- **Disconnect the power plug with care during thunder and lightning.**
- **Refer to the user's manual for problems or questions besides the above. Contact our service center if you need assistance from a professional technician.**
- **When you extend or terminate coaxial cable, it should be connected in the following way.**
 - BNC-M(Male) - BNC-JJ - BNC-M(Male): BNC Connector
- **Make the joint part of the cables insulated completely not to expose the metal parts.**



1. Introduction

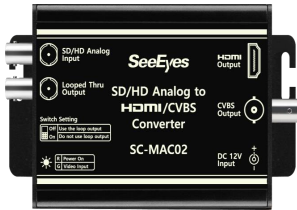
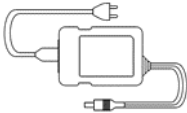
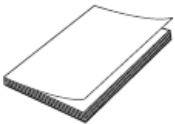
1-1. Overview

SC-MAC02 is a converter which converts HD analog video input signals to HDMI & CVBS signals. The available input signals are CVI, TVI and AHD. This product is able to transmit UTC signals to camera side by connecting input video signal through Loop-Output port with DVR, recorder or other devices.

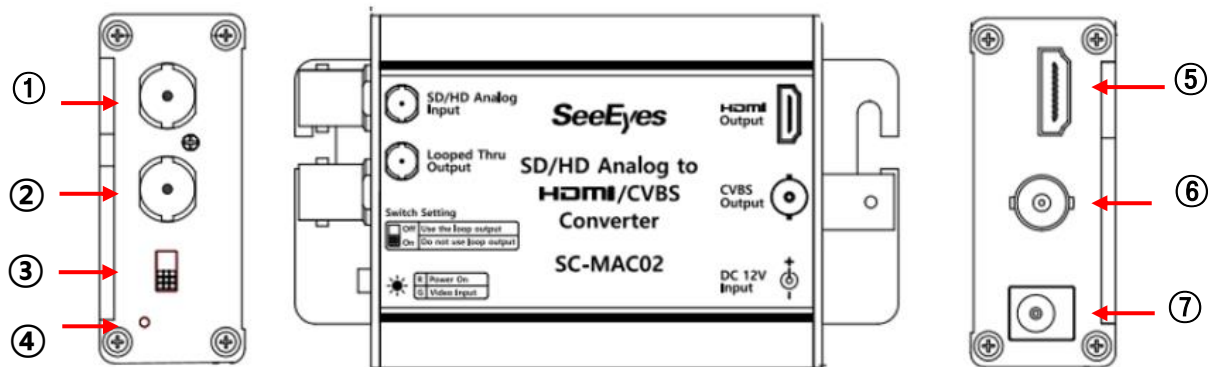
1-2. Features

- Output of HDMI & CVBS images from SD/ HD Analog images
- Available Loop-Output for SD/ HD Analog signals
- Supports camera control through Loop-Output port
- Built-in surge protection circuit

2. Components

SC-MAC02	DC 12V Adapter (Optional)	User's Manual
 The image shows the SC-MAC02 converter unit, a black rectangular device with various ports and labels. It includes an SD/HD Analog Input, a Loop-Through Output, an HDMI Output, and a CVBS Output. It also features a switch for setting the output format (CVI, TVI, AHD) and a DC 12V Input port.	 The image shows a DC 12V adapter, which is a small white rectangular device with a power cord and a DC output cable.	 The image shows the User's Manual, a small white booklet with a black cover.

3. Product Parts & Peripheral Devices Connection



① **SD/ HD Analog Input:** SD/ HD Analog signal input port

② **Loop Output:** Video output & UTC communication port

③ **Switch Setting:** Terminal Switch

Off	Use Loop Output
On	Not use Loop Output

④ **STATE LED:** In case of Power input RED On, In case of Video input GREEN On

⑤ **HDMI Output:** HDMI video output port

⑥ **CVBS Output:** CVBS video output port

⑦ **DC 12V Input:** DC 12V power input port

※ Terminal Switch setting

- Terminal resistance is adjustable resistance when the video out with using Loop Output port for the input video which adjust the output video status.

In case of DVR, terminal setting status is ON, therefore when connected to DVR with using Loop Output port, you should OFF for the terminal setting.

- The default setting is ON.

- If you want to change the terminal setting, please use it after turning it OFF / ON.
- Please make sure to turn the switch ON when the Loop Output is not used.
- **If Loop Output is not used, do not connect cable to the Loop Output port.**

※ **Caution:** Be sure to connect only Non-PoC camera (general camera).

If PoC(Power over COAX) camera is connected, it may cause product malfunction.

4. Specifications

MODEL		SC-MAC02
SD/ HD Analog Input		1280*720p 25/30Hz, 1920*1080p 25/30Hz, 2560*1440p 25/30Hz, 2592x1944p 12.5/20Hz, NTSC/PAL
Loop Output Resolution		Same as Input Resolution
HDMI Output Resolution		1920*1080p 50/60Hz
CVBS Output Resolution		NTSC, PAL
In/Output Recommended Transmission Distance	SD/ HD Analog Input / Output	Max. 300m / RG-59 (200m/20Ω) Max. 600m / RG-6 (300m/12Ω)
	HDMI Output	HDMI Cable 3m
	CVBS	Max. 100m / RG-59 (200m/20Ω) Max. 150m / RG-6 (300m/12Ω)
Input Power / Power Consumption		DC 12V: 0.5A, DC 12V: 150mA
Connection Port	SD/ HD Analog Input	BNC-F 75Ω
	Loop Output	BNC-F 75Ω
	HDMI Output	A Type
	CVBS Output	BNC-F 75Ω
Switch	Off	Use Loop Output
	On	Not use Loop Output
LED	RED	In case of Power input
	GREEN	In case of Video input
Temperature / Humidity		-10°C ~ +50°C / 0 ~ 80%
Case Body / Weight		Aluminum / 120g
Dimensions (mm)		103(W) x 60(D) x 26.5(H)mm

• RG-59

Total Distance	Camera Output ~ HD Analog Input	Loop Output ~ DVR Input
200m	200m	1m
300m	200m	100m
	150m	150m
	100m	200m
200m	1m	200m

• RG-6

Total Distance	Camera Output ~ HD Analog Input	Loop Output ~ DVR Input
400m	400m	1m
600m	400m	200m
	300m	300m
	200m	400m
400m	1m	400m

* The Max. transmission distance in CVI signal is 500m (over RG-6 Coax. cable).

※ Total Distance

= (Distance between Camera and HD Analog Input port) + (Distance between Loop Output port and DVR)

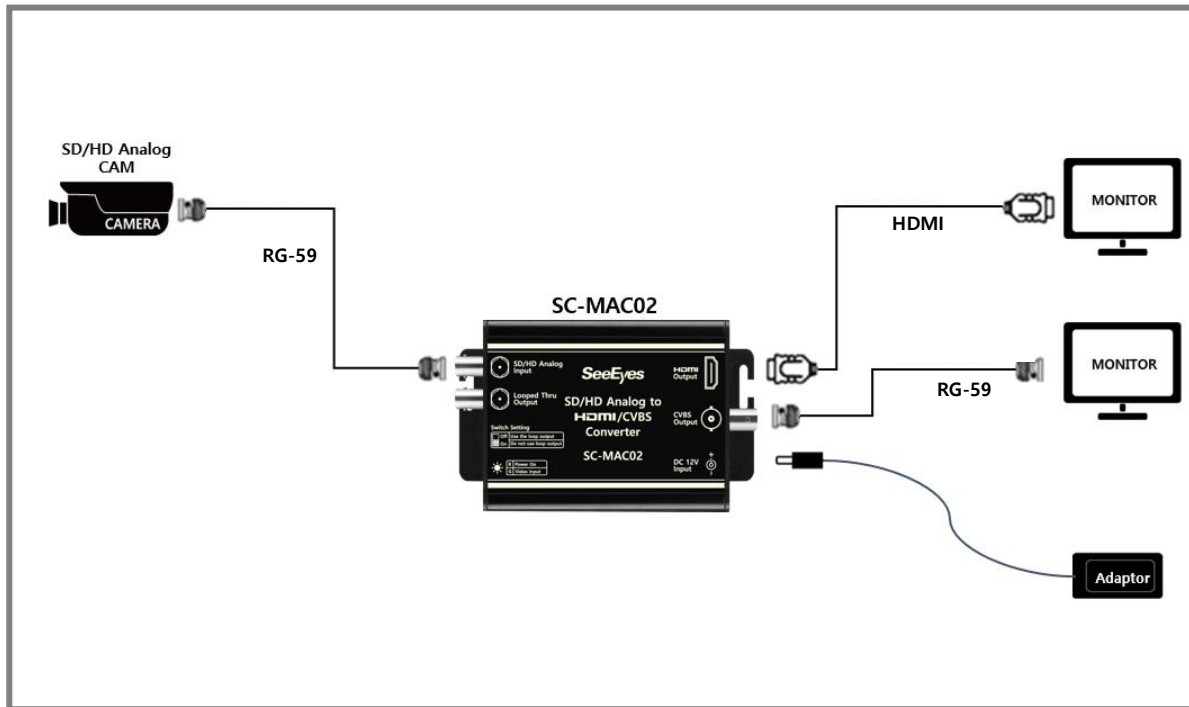
※ Distance of HD Analog Input and Loop Output are recommended to be within the total distance above.

※ The transmission distance may vary depending on the specifications of camera and DVR.

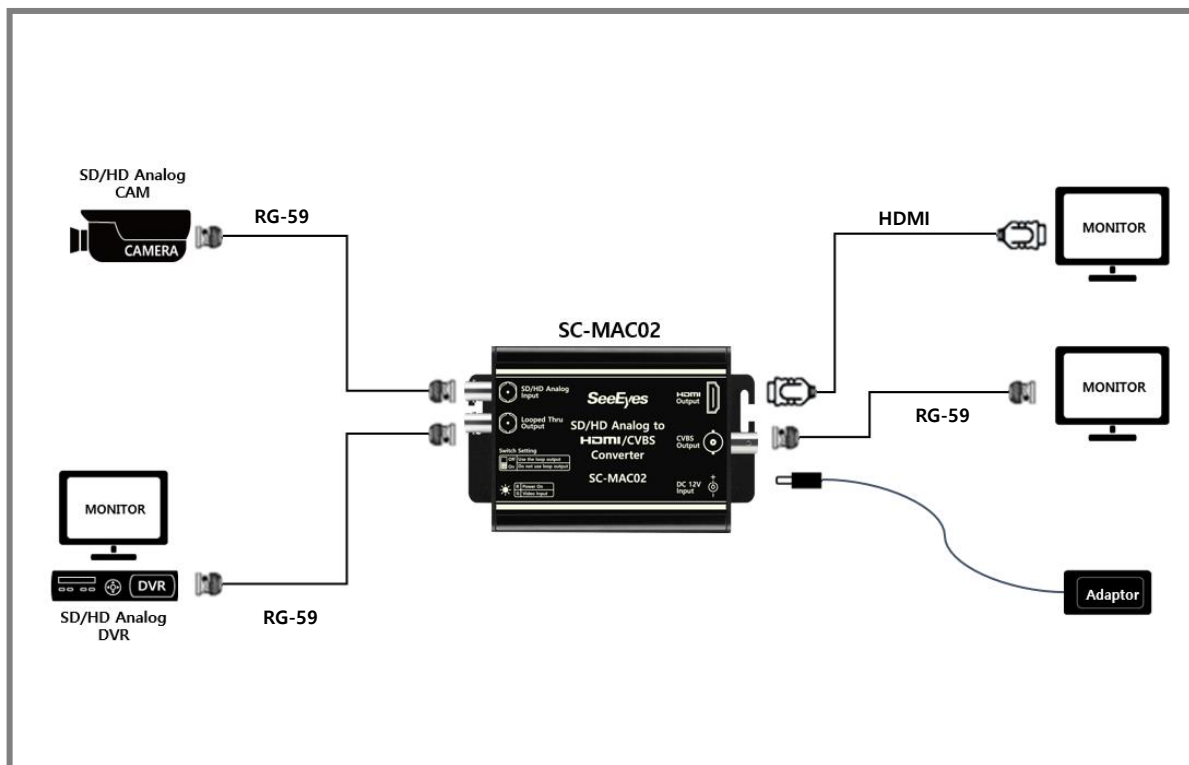
※ For AHD, TVI, CVI cameras, signal formats are not standardized, so the video may not be displayed or UTC may not work properly depending on the manufacturer.

5. Connection Diagram

5-1. HDMI and CVBS Video Output Diagram (Terminal Switch ON)



5-2. Loop, HDMI and CVBS Video Output Diagram (Terminal Switch OFF)



6. Trouble Shooting

Symptom	Identifying Method
There is no power input.	• Please check the connection status of the power adapter. • Please check if you connected the exclusive(DC12V) adapter. • Please check if the RED LED is On.
No HDMI image displayed.	• Please check if the GREEN LED is On. • Please check the resolution of the input signal. • Please check the connection status of the HDMI cable. • Please check the resolution of monitor if it's supported one. • Please check HDMI cable's length and capability.
No CVBS image displayed.	• Please check if the GREEN LED is On. • Please check the resolution of the input signal. • Please check the connection status of the BNC connectors. • Please check the resolution of monitor if it's supported one. • Please check BNC cable's length and capability.
Video is not clear	• Please check the cable connection status. • Please check the cable length & type. • Please check if the camera and DVR are compatible mutually. • Please check whether the switch setup status is correct or not. -> In case of Switch On, do not use Loop output -> In case of Switch Off, use Loop output
Camera control is not available	• Please check if the camera and DVR are compatible mutually.

7. Warranty Certificate

This product has passed thorough quality control and test, and if this gets broken during normal use, we provide the two-year warranty service.

Model No.		
Serial No.		
Distributor		
Date you purchased		
Place you purchased		
Warranty Period		Two (2) year from the date of purchase
Purchaser	Name	
	Address	

- Please check this warranty indication first.
- Please contact your distributor after checking out any defect in the products.
- The standard for repairing, replacement or reimbursement follows Customer.
- Warranty content any defect under normal use within the warranty service period we give you free repair service according to the warranty certificate.
- We charge you with the fee of parts and service despite of free warranty service period.

Any breakage made without care such as:

- Breakage or trouble made by natural disaster.
 - Breakage or trouble made by breaking the product guide or manual.
 - Breakage or trouble made by wrong power voltage or frequency.
 - When you want to reassemble for full system or replace parts within warranty service period.
 - When unauthorized person modified or made damage on the product trying to repair it.
 - Lightening strike.
- Please note that we don't support the breakage after warranty service period is expired. If the customer wants to get it repaired, we charge them with the fee.
 - The specification is subject to change without prior notice for quality improvement.

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