



## **CONVERSOR SCALER AV – V. Composto, SVIDEO, SVGA e HDMI para SVGA e HDMI**

Versão 2013.04.01

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# Meaning of the symbol

## ■ Safety Instruction

Symbols are used in the Manual and devices, referring to the possible risk to users or others, as well as the damage to property, for helping you to safely and properly use the devices. The instruction and the implications are as follows. Please make sure your correct understanding of these instructions before using the Manual.

	<p>To remind user to conduct according to the attached operation and maintenance instructions. If ignore these information, death or injury could possibly happen.</p>
	<p>To remind the user that the risky uninsulated voltage in the device could caused electric shock to human.</p>
	<p>CE authentication indicates the product is in line with the EU safety regulation, and for assurance of safety use.</p>
	<p>SGS Authentication indicates the product has reached the QC standard of the global-biggest Swiss universe surveyor.</p>
	<p>This product has acquired the ISO9001 International Quality Authentication (Authentication authority: Germany Rheinland TUV)</p>
	<p>Caution: To avoid electric shock, please don't open the case, nor put the useless parts in it. Please contact with qualified service staff.</p>

## ■ General Information Instruction

	<p>List the situation could cause unsuccessful operation or setup, and relevant information needed to notice.</p>
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# Important Notices



## Caution

To ensure the device in reliable use and personal safety, please abide by the following items when in installation, use and maintenance:  
Notice in installation

- ◆ Please DO NOT use the product in following places: the places with dust, oily smoke, electrical conductive dust, corrosive gas, inflammable gas; the places with high temperature, due, rain and wind exposures; the places endangered by shock and vibration. Electric shock, fire and incorrect operation could also cause damage and deterioration to the product.

- ◆ When conducting screw drilling and wiring process, DO NOT let metal irons and wire lead drop into the controller and air vent, which could possibly cause fire, failure and accidental operation.

- ◆ After finishing the installation, it is necessary to ensure there is no foreign matter including the packing material like contact paper on the ventilation surface, otherwise, it could cause poor heat dissipation while running, as well as fire, failure and accidental operation.

- ◆ Avoid conducting wiring and plugging in/out cable socket with electricity, otherwise, electric shock, circuit damage could easily happen.

- ◆ Installation and wiring should be firm and reliable. Poor contact could cause malfunction.

- ◆ With regard to the application situations with strong interference, shielded cable should be used for the input and output of HF signal, to improve the anti-interference performance of the system.

## Note in Wiring

- ◆ Installation and wiring shouldn't be conducted until external electric power is cut off, otherwise, electric shock or device damage could happen.

- ◆ The product is grounded by the earth lead of the power cable. To avoid electric shock, the earth lead is necessary to be connected with the ground. Before making connection with the output end or input end of the product, please ensure it is correctly grounding.

- ◆ Upon finish wiring, remove the sundries. Please cover up the terminal plate for avoiding electric shock.

## Note for Operation and Maintenance

- ◆ Please DO NOT touch the terminal when with electricity, otherwise, electric shock could happen.

- ◆ Don't clean up and screw the terminal tight before power is off. Such operation could cause electric shock when with electricity.

- ◆ Please turn off the power before connecting or disconnecting the communication signal cable, peripheral modules or control units, otherwise, device could be damaged and accidental operation could happen.

- ◆ Please DO NOT disassemble the device, so as to avoid internal electric components damage.

- ◆ It is necessary to read through the Manual and fully ensure the safety, before altering the program, trial running, starting and stopping operation.

## Note for declaration of worthless.

- ◆ Explosion of electrolytic capacitor on the

circuit board could happen when burning it.

◆ please classify and dispose it. Don't dispose it into household garbage.

◆ please deal it as industrial waste, or in accordance with local environmental protection regulation.

# Forward

User's Manual of SC Scaler System primarily introduces the operation of CR-SC-290 Scaler System, key parameters and general trouble shootings.

The Manual serves as user's operation instruction, rather than for maintenance service purpose. Since the date of release, any function or relevant parameter alteration will be in supplement instruction. Please refer to the manufacturer or dealers for inquiry.

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# Chapter 1 Overview

## 1.1 About SC-290 Scaler System

The SC-290 Scaler System can switch multiple signals into DVI and HDMI output in HD(high-definition) format.

The VGA or HDMI output from PC graphic adaptor is connected to Full-HD (1080P) big TV screen via the switching of Scaler System, with maximum support up to 1920X1080@60Hz. Featuring excellent compatibility and high definition, this product supports a variety of resolutions from PC graphic adaptor.

◆ Support OSD menu

◆ After switching all input groups, the VGA/HDMI/DVI video signal are supported to any of the following 11 resolutions output:

1024×768@60Hz  
1280×720P@60Hz  
1280×800@60Hz  
1280×1024@60Hz  
1366×768@60Hz  
1400×1050@60Hz  
1440×900@60Hz  
1600×900@60Hz  
1600×1200@60Hz  
1680×1050@60Hz  
1920×1080P@60Hz

## 1.2 Functions and Features

◆ 4-way video signal input:1-way CV, 1-way S-Video, 1-way VGA, 1-way HDMI/DVI, any way can be switched or changed to unified VGA/HDMI/DVI output  
e.g.: CV to VGA, CV to HDMI or CV to DVI

◆ 2-way video signal output: 1-way HDMI, 1-way VGA, support and self-adapt to the signal sources of composite video (CV) and S-Video(Y/C) in all formats including NTSC, PAL and SECAM.

◆ VIDEO ( CV ) , S-Video and HDMI are all with separated adjustable brightness, contrast, saturation, sharpness and hue. VGA is with separated adjustable brightness, contrast, color temperature and phase.

◆ Support 1-way unbalanced audio switching to 1-way unbalanced audio output.

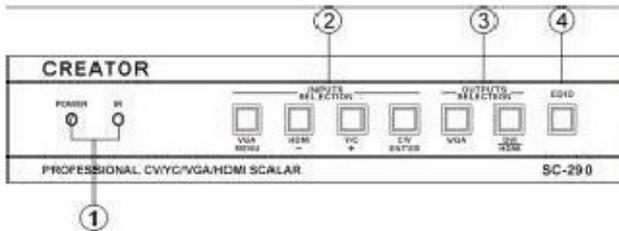
◆ Support adjustment of the bass and treble, and balance of left and right channels.

◆ Support power-off memory

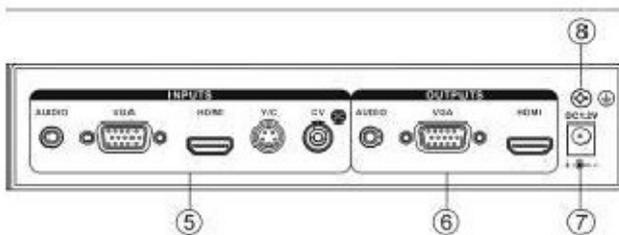
## Chapter 2 Panel Instruction

### 2.1 SC-290 Panel Instruction

Front panel :



Rear panel :



#### ① LED Indicator

POWER : Power indicator  
IR : Infrared receiving window

#### ② INPUTS — Input Options

VGA /MENU : VGA signal input selection key and menu functional key.  
HDMI/- : HDMI signal input selection key and menu functional key.  
Y/C/+ : **COMPOSITE** video input selection key and menu functional key.  
CV/ENTER : CV video signal input selection key and menu functional key.

#### ③ OUTPUTS — Output Options

VGA : VGA output selection key, with options of close/open status of VGA output port.  
DVI/HDMI : DVI/HDMI output selection key, with option of selecting HDMI output port status of HDMI, DVI or close. Please see operation instruction for details.

④ EDID  
EDID functional key.

#### ⑤ INPUTS

AUDIO : Audio input port

VGA : VGA signal video input port, with 1-way of VGA signal input port, connecting to the signal sources with VGA port, like PC and etc.

HDMI : High definition signal input port, with 1-way of HDMI signal port, connecting to the peripheral devices with HDMI ports, like DVD or PC etc.

Y/C : S-VIDEO video signal input port, with 1-way of S-VIDEO signal port, connecting to the peripheral devices with Y/C port, like monitor, DVD, VCD and VCR etc.

CV : Composite video signal input port, with 1-way of composite signal port, connecting with the peripheral devices like monitor, DVD, VCD and VCR etc.

#### ⑥ OUTPUTS

AUDIO : Audio output port

VGA : VGA signal video output port, HD video input port, connecting to monitor with VGA port.

HDMI : HDMI signal video output port, HD video input port, connection to HD monitor with HDMI port

#### ⑦ System Power Input Port

System power input supports self-adaptive DC 12V

⑧ Grounding

## Chapter 3 System Operation Instruction

### 3.1 Operation Instruction of Panel

#### Keys

Select signal sources via panel operation, select the status of output port, adjust volume and set up menu function.

#### 3.1.1 Input Selection Keys

Press the desired input selection key, corresponding key indicator will be on, indicating corresponding signal source is selected.

#### 3.1.2 Output Selection Keys

Press output selection key to select different output status in VGA or HDMI output port.  
Operation :

1、 Select the output status at VGA output port

If current VGA output indicator is on, press VGA output selection key to turn it off and VGA output will be closed. ;

When current VGA output indicator is off, press VGA output selection key to turn it on and start VGA output ;

2、 Select the output status at HDMI output port

If current HDMI output indicator is off, press HDMI output selection key to turn it on and start to output HDMI signal;

If current HDMI output indicator is on and with HDMI signal output, press HDMI output selection key, then the HDMI output indicator is still on, but turn to DVI signal output;

If current HDMI output indicator is on and with DVI signal output, press HDMI output selection key to turn off the indicator and close

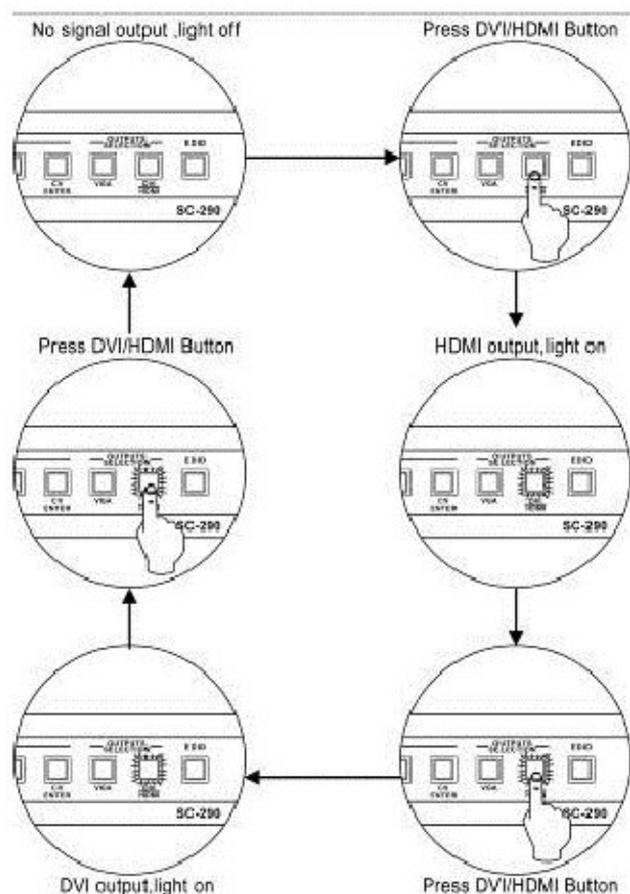
the output.



If after selecting corresponding input signal,

there is no display on screen, please check if the screen connected supports current resolution output from SC290, and check if HDMI output status is compatible with the screen connected. If the screen is with DVI port, SC290 should be set as DVI signal output; if the screen is with HDMI port, SC290 should be set as HDMI signal output.

The output status setting at HDMI output port is seen as following picture:



#### 3.1.3 Key Indicator

If input selection key is on, it means

corresponding signal input signal has been selected.

If VGA output indicator is on, it means with VGA signal output. If the indicator is on, it means VGA signal output is closed.

If DVI/HDMI output indicator is off, it means there is no output signal. Press the key to turn on the indicator and with HDMI signal output. Press the key again, the indicator will still be on, but with DVI signal output. Press the key again to turn off the indicator and the signal output is closed.

### 3.1.4 Volume Adjusting Key

Press and hold the “-” key on panel for 3 seconds , to access to volume adjustment, the screen will then display volume adjustment window. At the meantime,“-” and “+” key indicators will be activated. Press“-”and“+” keys to adjust volume. If without any volume adjustment after 3 seconds, volume adjustment will be exited. Press “MENU” and “ENTER” keys in volume adjustment status, you also may exit it.



In operation, the indicators of “-”and“+”are constantly on.

### 3.1.5 EDID Key

Press and hold EDID key for 3 seconds to start EDID writing, that's writing the EDID mirror of the screen connecting with HDMI output port to HDMI input port. Flashing key indicator means EDID writing is in process. Last two flashes mean writing is successful.

## 3.2 Instruction to menu operation

Press and hold MENU key, the indicators for“MENU”,“ENTER”, “-” and “+”will be on at the same time. There is corresponding display on the monitor. Selection is successful.

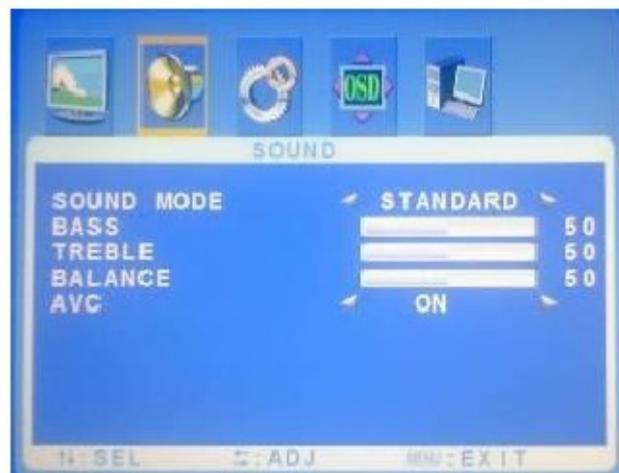
After access to the screen, move the “-” and “+” keys on rear panel to configure the parameters needed, and the monitor will display the setup status in real time.

After configuration, press the “ENTER” key on the panel to access to the lower-tier menu to have corresponding configuration.

Note: When operating, the indicators for “MENU”,“ENTER”, “-” and“+” will be on constantly.

Note: It is necessary to set the SOUND MODE in SOUND SETUP as STANDARD

Step 1 : Access to setup screen, and then use the “-”and “+” keys to move the cursor to SOUND setup option, and access to SOUND configuration, as picture 3-1



Picture 3-1

Step2 : After access to setup configuration screen, move the cursor to the first option – SOUND MODE, and the font will turn to yellow, indicating the parameter on this item is for configuration, then press the “ENTER” key on panel to confirm it.

Step 3: Confirm your selection, SOUND MODE will turn into yellow color, use the “-” and “+” keys to move the cursor to select the STANDARD

parameters you need, press ENTER to confirm it and finish the operation.

Before access to the setup sub-screen, press “-” and “+” keys on the panel to access to another option setup, with specific operation as above.

After finishing setup, press ENTER key to return to the menu in upper tier. If no setup operation is conducted, a few seconds (time adjustable) later, OSD menu setup will automatically exit.

Note : System default screen is displayed after access to the main menu.

3.2.1 Menu Setup for VGA Channel

Part of PICTURE menu setup options:

PICTURE MODE:Select picture display modes including STANDARD, Dynamic, Sofe, personal

CONTRAST:Contrast adjustment

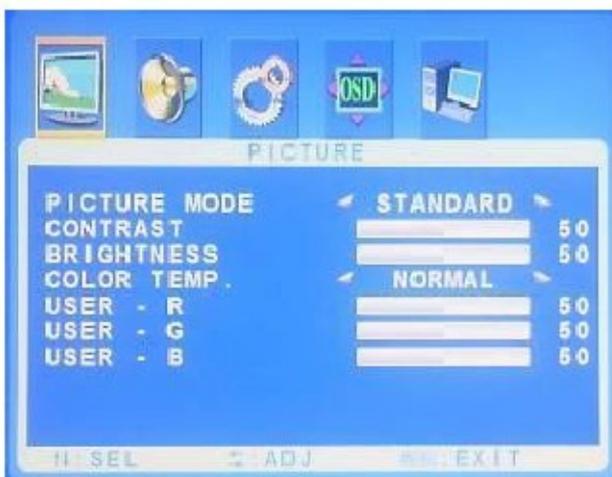
BRIGHTNESS:Brightness adjustment

COLOR TEMP:Color temperature modes selection includes Normal, Warm, Cold and User.

USER-R:Under user mode of color temp, parameter R is for configuration.

USER-G: Under user mode of color temp, parameter G is for configuration.

USER-B:Under user mode of color temp, parameter B is for configuration.



Picture 3-2

Part of SOUND menu setup options:

SOUNDMODE:Selectsoundmodes including standard, news, music and personal.

BASS:BASS parameter adjustment

TREBLE:TREBLE parameter adjustment

BALANC:BALANCE parameter adjustment

AVC:ON/OFF.

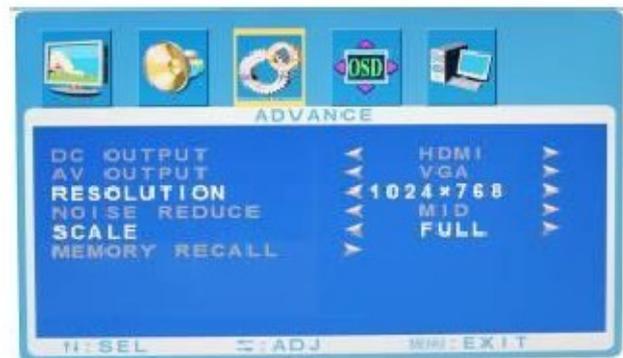


Picture 3-3

Part of ADVANCE menu setup options:

RESOLUTION:Resolution display selection

SCALE:Picture Zoom in/out modes selection including full, normal and auto



Picture 3-4

Part of OSD menu options selection:

OSD H-POSITION:OSD horizontal position adjustment

OSD V-POSITION:OSD vertical position adjustment

OSDHALFTONE:OSDtransparency adjustment

OSD DURATION:OSD duration display adjustment.



Picture 3-5

Part of GEOMETRY menu options selection:

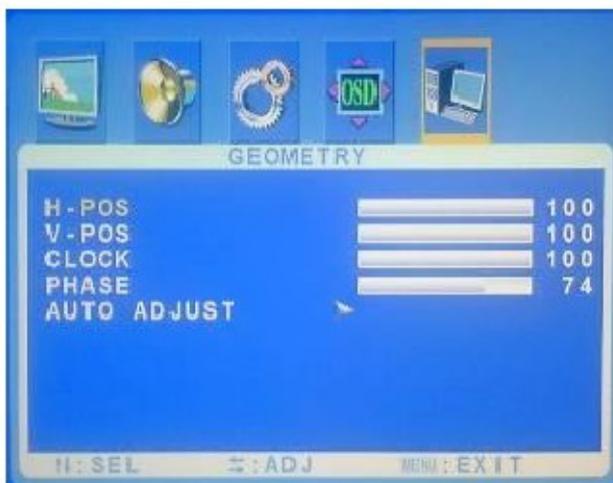
H-POS:Manual adjustment for horizontal position of the picture.

V-POS:Manual adjustment for vertical position of the picture

CLOCK:Manual adjustment for clock

PHASE:Manual adjustment for phase.

AUTO ADJUST:Manual adjustment for picture



Picture 3-6

### 3.2.2HDMI、Video、S-video channel menu

Operat i on pr ocess is the same as that of VG A channel menu, please see 3. 2. 1 for det ails.

Part of PICTURE menu setup options:

PICTURE MODE:Including STANDARD, Dynamic, Sofo and Personal.

CONTRAST:Contrast adjustment

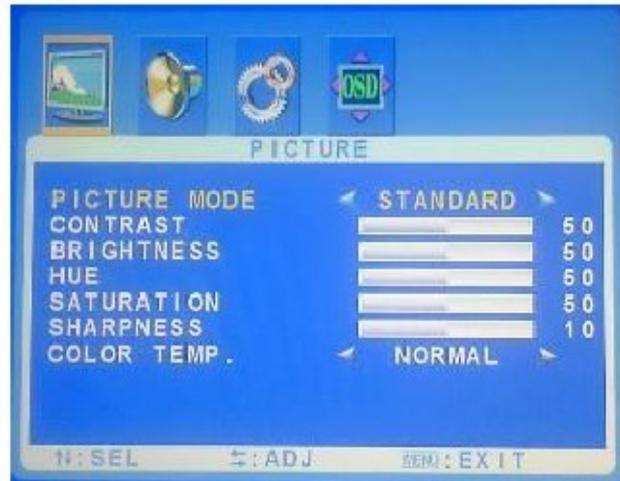
BRIGHTNESS: Brightness adjustment

HUE:Hue adjustment

SATURATION:Saturation adjustment

SHARPNESS:Sharpness adjustment

COLOR TEMP:Color temperature selection includes the modes of Normal, Warm, Cold and User.



Picture 3-7

Part of SOUND menu setup options:

SOUND MODE:Sound modes selection includes Standard、News、Music、Personal ( as picture 3-8 ) .

BASS:BASS parameter adjustment

TREBLE:TREBLE parameter adjustment

BALANCE:BALANCE parameter adjustment

AVC:ON/OFF.



Picture 3-8



Picture 3-10

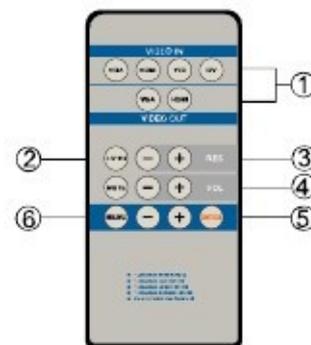
Part of ADVANCE menu setup options:  
 RESOLUTION:Resolution display selection  
 NOISE REDUCE:Noise reduction selection, including Off, Low, Mid, High and Auto.  
 SCALE:Picture zoom in/out modes selection including FULL, Normal and Auto



Picture 3-9

Part of OSD menu setup options:  
 OSD H-POSITION:OSD horizontal position adjustment  
 OSD V-POSITION:OSD vertical position adjustment  
 OSDHALFTONE:OSDtransparency adjustment  
 OSD DURATION:OSD display duration adjustment

### 3.3 Operation Instruction to Remote Controller



The operations and functions are the same as the front panel, as above picture shows:

- ① Mode and channel selection key  
Remote controller can more expressively select the corresponding channels to VGA, HDMI, Y/C and CV
- ② Key of picture mode  
Press picture zoom in/out key to select FULL/Normal/Auto mode, with 16:9 / 4:3 display output.
- ③ Key of resolutions selection  
Press key of resolutions selection to select the following display resolutions in rotation:  
 800×600 @60Hz  
 1024×768@60Hz  
 1280×720@60Hz

1280×800@60Hz  
 1280×1024@60Hz  
 1366×768@60Hz  
 1440×900@60Hz  
 1600×900@60Hz  
 1600×1200@60Hz  
 1680×1050@60Hz  
 1920×1080@60Hz

④ Main volume +/- key, MUTE to make it silence.

⑤ Confirm key

⑥ Key for menu function selection  3.2  
 Instruction to Menu Operation

3、 Press and hold EDID key for 3 seconds, then EDID indicator starts to flash, accessing to EDID reading and writing;

4、 During the process of reading and writing, rapid EDID indicator flashing means EDID has been erased and written successfully. If EDID indicator flashes for twice, it means the operation is successful.

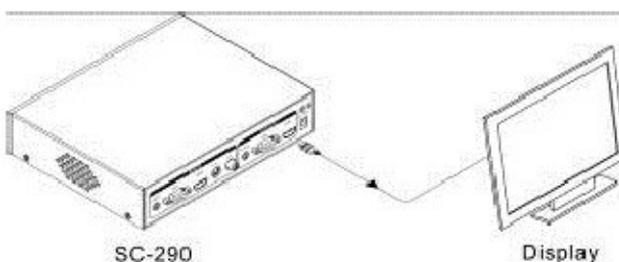
5、 If the operation is not successful, please check if HDMI cable has been correctly connected or if it is over-long, if so, please replace the HDMI cable and re-execute the operation of EDID reading and writing.

### 3.4 EDID Reading and Writing

#### Operation

When the signal output from HDMI port is not compatible with the screen connected, EDID reading and writing operation could be taken—writing the EDID mirror of screen connecting with HDMI output port to HDMI input port, with following detailed steps:

EDID reading and writing operation wiring diagram:



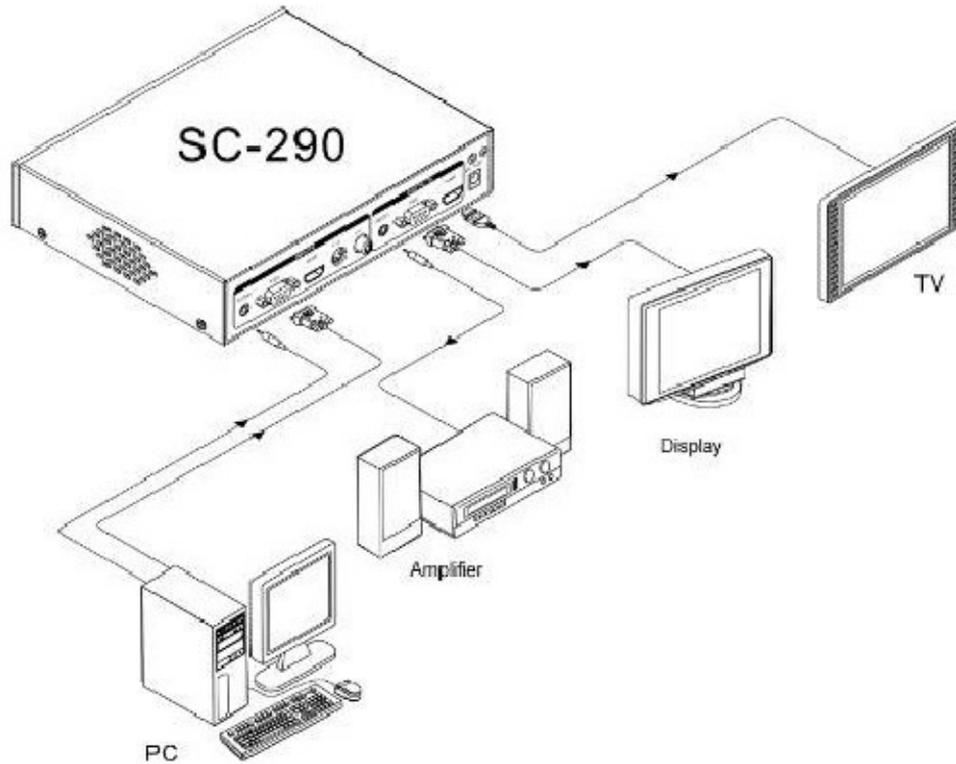
1、 Connect the screen with desired EDID to the HDMI output port in SC290 with HDMI cable, which shouldn't be longer than 7 meters;

2、 Disconnect with the HDMI input port in SC290.

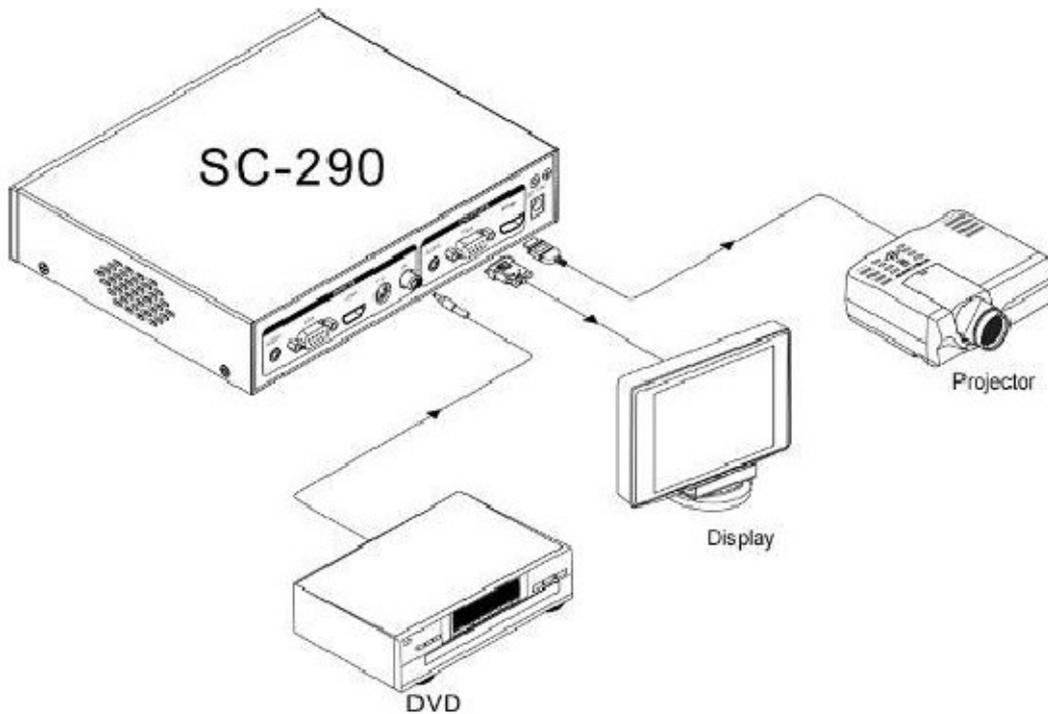
### 3.5 System Diagram

SC-290 Scaler System has extensive application, suitable for a variety of situations, providing various connections. Some connection methods are introduced as follows:

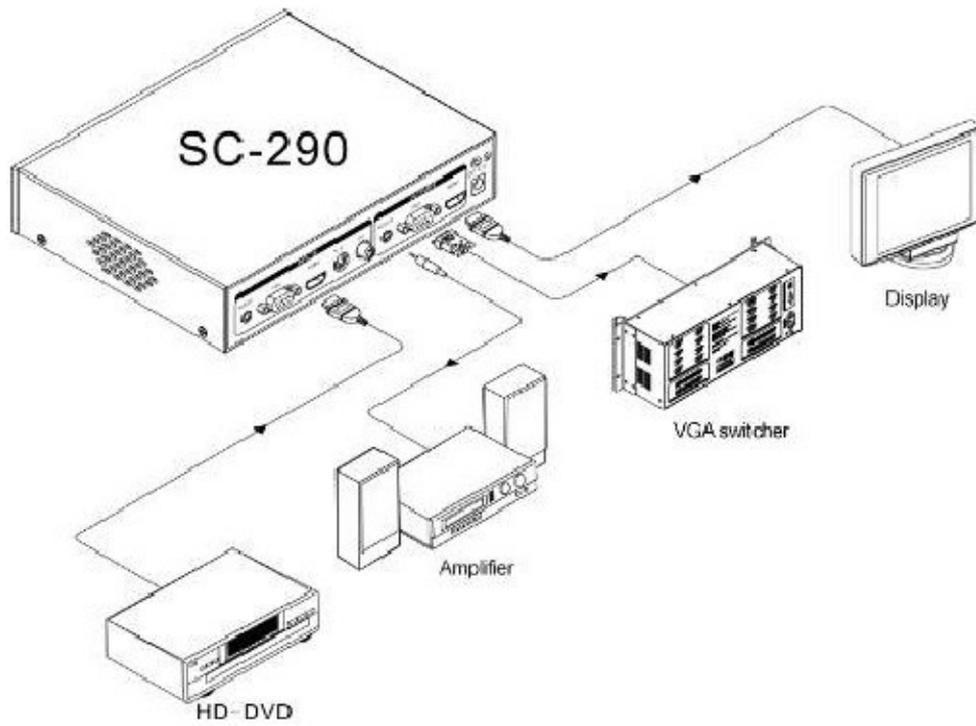
Picture 1:



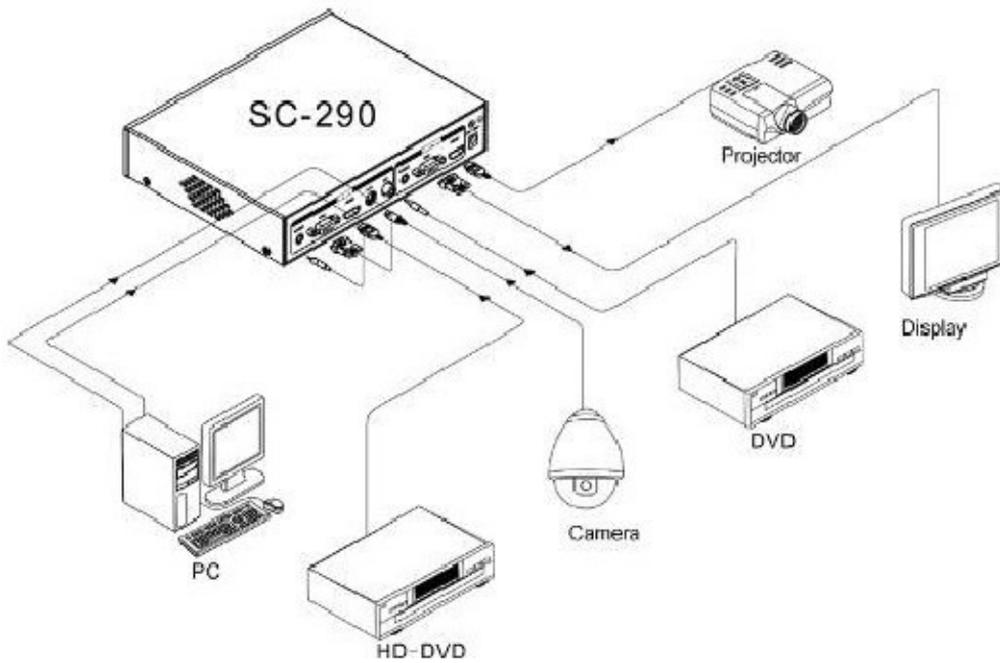
Picture 2:



Picture 3:



Picture 4:



## Chapter 4 Technical Specifications

Type	SC-290
Video	
Gain	0 dB
Bandwidth	VGA video:375 MHz,HDMI video:2.25Gbps.
Differential phase I/OS	<1.28°,3.58 MHz
Error of differential phase	0.1°, 3.58-4.43 MHz
DG error time	0.1%, 3.58-4.43 MHz
Signal type	VGA,HDMI.
VGA video input	
Signal strength	0.7V p-p: VGA ( PC signal ) ;
Min/Max LEV	-2V/+2V
Impedance	75 Ω
Return loss	<-30dB@5MHz
Response to horizontal frequency	30-200KHZ
Response to vertical frequency	20Hz-240Hz
HDMI video output	
Port	HDMI-A port (Type A connector )
Min/Max LEV	T.M.D.S. 2.9V/3.3V
Impedance	50 Ω
Max. output distance recommended	Less than 10m, at 1920x1080p@60 (recommended to use special HDMI wire with authentication, like Molex TM)
Working environment	
Power	Input:AC 220V 50/60Hz ; Output:DC +12V 1.5A
Temperature	Storage and use temperature: -20° ~ +70°C
Humidity	Storage and use humidity:10% ~90%

## Chapter 5 Troubles Shooting

In this chapter, we have a guideline to cope with a variety of minor failures, which are the consequences of improper use or installation. For more serious failures, please contact with professional technicians:

Failure	Resolution
When not output from local port, screen is flickering.	<ul style="list-style-type: none"><li>• Check whether DVI input cable is damaged, try to have a replacement</li><li>• Check whether DVI output cable is damaged, try to have a replacement</li></ul>
No HDMI output	<ul style="list-style-type: none"><li>• Check whether EDID reading is normal</li></ul>
If POWER indicator is off and no display on monitor	<ul style="list-style-type: none"><li>• Check whether power input is well-connected</li></ul>
Output image is interfered	<ul style="list-style-type: none"><li>•Possibly input/output device is not grounded well.</li></ul>