Video Pattern Generator

- ID# 793

Operation Manual

Introduction

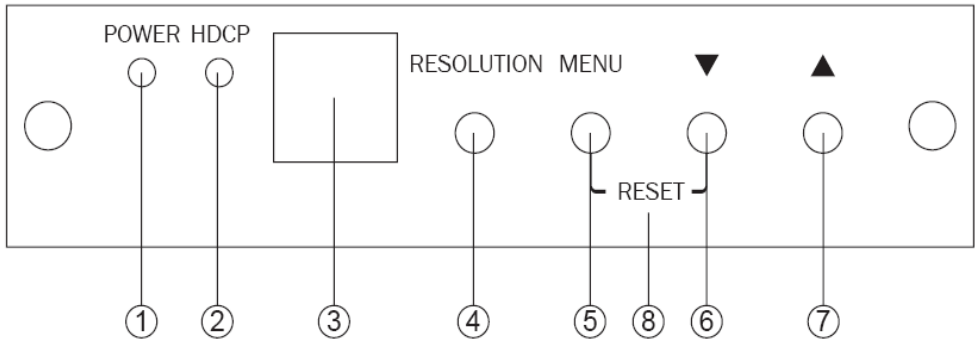
This is a scan converter box to convert a variety of computer image to Component/D2 (480p) signal. It support input resolution up to UXGA (1600x1200@60Hz) and output resolution supports 480i or 480p. This is ideal for use in applications like video conference, home theater, business presentation, lecturing room or viewing PC image on TV.

Features

- Supports HDCP signal verification pattern.
- OSD menu operation
- Remote control

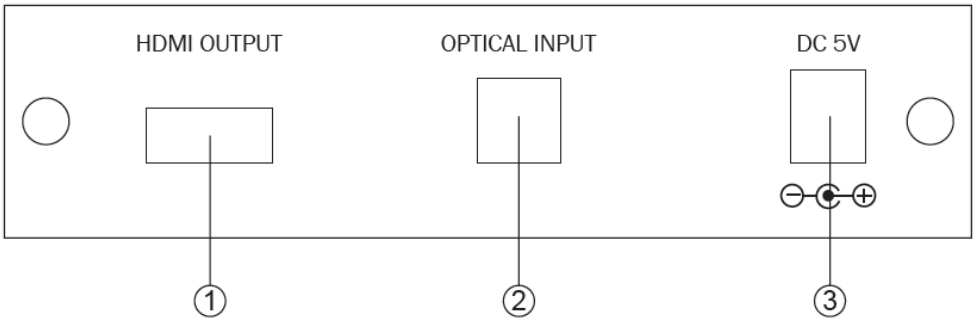
Operation Controls and Functions

Front Panel



1 Power ON/OFF indicator.
2 HDCP ON/OFF indicator: Press [HDCP ON]/[HDCP OFF] to switch HDCP ON/ OFF.
3 Remote control sensor.
4 Resolution: Switch resolution among VGA60→SVGA60→XGA60→SXGA60 →UXGA60→WUXGA60→576p50→480p60→720p50→720p60 →1080p50→1080p60
5 MENU (Enter): Press to view the OSD menu or press to enter the functions.
When OSD Menu shows up, the HDCP function will turn off by the system. After the OSD turn off, the HDCP function turn it on automatically.
6 ▼: Press to move the cursor down or switch to next pattern.
7 ▲: Press to move the cursor up or switch to previous pattern.
8 RESET: Press to return to factory setting.

Rear Panel



1 HDMI OUTPUT: HDMI/DVI output.
2 OPTICAL INPUT: Connected external S/PDIF audio source.
3 DC 5V/2A: Power input.

Pattern table

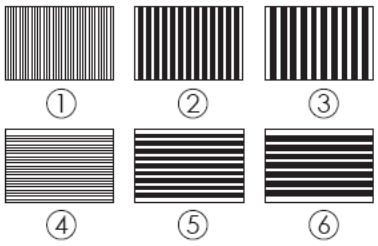
CPA-4 has 8 groups with 36 patterns.

GROUP	PATTERN	COMMENT
Color Bar	 ① ② ③ ④	H/V color bars
Application		
The color bar pattern in fact provides sufficient information for a good overall check on color performance. This includes the checks on burst keying, subcarrier regeneration, RGB amplifiers, the delay chrominance/luminance and saturation check.		
Grey Scale		step8 / 16 / 32
Application		
The Greyscale pattern is used to locate faulty linearity of the video amplifier or greyscale setting. Nonlinearities mainly result in a compression of the white level.		

Purity		Purity Color White, Blue, Red, Magenta, Green, Cyan, Yellow, Black

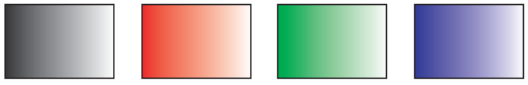
Application

The red and green patterns are most frequently used for checking color purity. In a correctly adjusted receiver, each electron beam will strike only one set of color dots or stripes on the screen. If the red pattern is selected only this color should be visible; the presence of any other color is an indication that color purity needs adjustment.
The green pattern provides a purity check for three in-line tubes. In addition the pattern serves as a reference to locate any geometrical distortions in these picture tubes. In the in-line tubes, the guns are in a horizontal position and the green gun is located in the center.
Blue as well as the complementary colors are often used to check the color performance.
The Patterns (mainly RED) are used to ensure that there is no interference between the sound and chroma carrier.
In addition to the primary and complementary colors 100% white can be selected as well as black pattern with color burst to check.
Furthermore purity patterns are used for measuring unwanted amplitude and phase modulation of the subcarrier, AM and PM noise as it occurs with VCRs.

Black / White Line		H/V B/W line

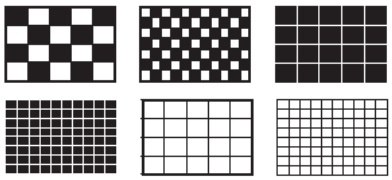
Application

The vertical pattern serves for a quick check of color monitor's horizontal bandwidth and phase behavior of a video transmission. Also, verify video amplifier and color temperature.
The horizontal pattern serves for a quick check of color monitor's vertical bandwidth and phase behavior of a video transmission. Also, verify video amplifier and color temperature.

Gradual		Graudal Black/White, Red/White, Green/White, Blue/ White

Application

Checks and adjustment of decoders, especially video de-emphasis and bell filters (cloche).
In the receiver, after the antibell filter, the chrominance signal should have the same amplitude in the active video part.

Grid		Checker Board, Grid, Inverse Grid
Application		
This pattern is mainly used for checking and aligning dynamic and corner convergence of TVs or monitors.		

HDCP Pattern		HDCP test and link-integrity check
Application		
To test DVI and HDMI receivers with HDCP. All DVI and HDMI options, including analyzer options, support HDCP production keys if the HDCP option is installed.		
Others		H Pattern, Dot Pattern, Cross Center, Motion
Application		
The H pattern is mainly used for checking aligning dynamic The Dot pattern is used for checking and adjusting the static convergence. The screen should contain pure white dots. The presence of colored dots points to faults in focusing and convergence. The Cross center is present in the corners of the screen to check and adjust the geometric distortion. The Cross center is ideal to center TV monitors and TV screens and alignment of picture height/picture width. Furthermore, it is used to check the deflection linearity and the pincushion correction. The Motion pattern is to check the correct digital video processing, especially AD conversion of modern TV equipment. When motion pattern ON, the HDCP function will turn off by system, After the user switch to other patterns, the HDCP function turn it ON automatically.		

OSD main menu

Press [MENU] to display main menu.

5.1 Pattern

Press [▲/▲] to move the cursor and then press [Menu] to enter the pattern mode. There are 8 different pattern groups; you can move the cursor and press [Menu] to enter each pattern group. Press [↑/↓] to select pervious/next pattern.

MAIN MENU		**PATTERN**
PATTERN		COLOR BAR
AUDIO SOURCE		GRAY SCALE
HDCP SETUP		PURITY
EDID ANALYSIS	→	BLACKWHITE LINE
RESOLUTION		GRADUAL
SIGNAL TYPE		GRID
INFORMATION		HDCP PATTERN
EXIT		OTHERS
		EXIT

Press [Exit/Menu] to return to pervious page. Or press [Exit/Menu] twice to return to the Main menu.

Audio source

Press [▲/▲] to move the cursor and then press [Menu] to enter the audio source. After the audio source been selected press [Menu] to confirm the selection.

MAIN MENU		**AUDIO SOURCE**
PATTERN		INTERNAL
AUDIO SOURCE		EXTERNAL
HDCP SETUP	→	OFF
EDID ANALYSIS		EXIT
RESOLUTION		
SIGNAL TYPE		
INFORMATION		
EXIT		

Press [Exit/Menu] to return to the Main menu.

HDCP setup

Press [▲/▲] to move the cursor and then press [Menu] to enter the HDCP setup. After the HDCP setup been selected press [Menu] to confirm the selection.

MAIN MENU		**HDCP SETUP**
PATTERN		OFF
AUDIO SOURCE	→	ON
HDCP SETUP		EXIT
EDID ANALYSIS		
RESOLUTION		
SIGNAL TYPE		
INFORMATION		
EXIT		

Press [Exit/Menu] to return to the Main menu.

EDID analysis

Press [▲/▲] to move the cursor and then press [Menu] to enter the EDID analysis. After enter EDID analysis sub-menu, the user can move the cursor and then press [Menu] to check the EDID information.

MAIN MENU		**EDID ANALYSIS**
PATTERN		BK0. Binary List
AUDIO SOURCE	→	BK0. Vendor / Product Id
HDCP SETUP		BK0. Basic Display Barameters
EDID ANALYSIS		BK0. Color Characteristics
RESOLUTION		BK0. Established Timings
SIGNAL TYPE		BK0. Standard Timings
INFORMATION		BK0. Detail Timings
EXIT		BK1. Binary List
		BK1. DTV Monitor Support
		BK1. Video Data Block

BK1. Audio Data Block
BK1. Other Data Block
BK1. Detail Timings
EXIT

Press [Exit/Menu] to return to pervious page. Or press [Exit/Menu] twice to return to the Main menu.

Resolution

Press [▲/▲] to move the cursor and then press [Menu] to enter the resolution setup. After the resolution setup been selected press [Menu] to confirm the selection.

MAIN MENU		**RESOLUTION**
PATTERN		PC Mode: VGA60 / SVGA60 / XGA60
AUDIO SOURCE		SXGA60 / UXGA60 / WUXGA60
HDCP SETUP	→	HD MODE: 576p50 /480p60 / 720p50
EDID ANALYSIS		720p60 / 1080p50 / 1080p60
RESOLUTION		EXIT
SIGNAL TYPE		
INFORMATION		
EXIT		

Press [Exit/Menu] to return to the Main menu.

Signal type

Press [▲/▲] to move the cursor and then press [Menu] to enter the signal type setup. After the signal type been selected press [Menu] to confirm the selection.

MAIN MENU		**SIGNAL TYPE**
PATTERN		DVI
AUDIO SOURCE		HDMI
HDCP SETUP	→	AUTO DETECT
EDID ANALYSIS		
RESOLUTION		EXIT
SIGNAL TYPE		
INFORMATION		
EXIT		

Press [Exit/Menu] to return to the Main menu.

Information

Press [▲/▲] to move the cursor and then press [Menu] to show system information. The system default status as below:

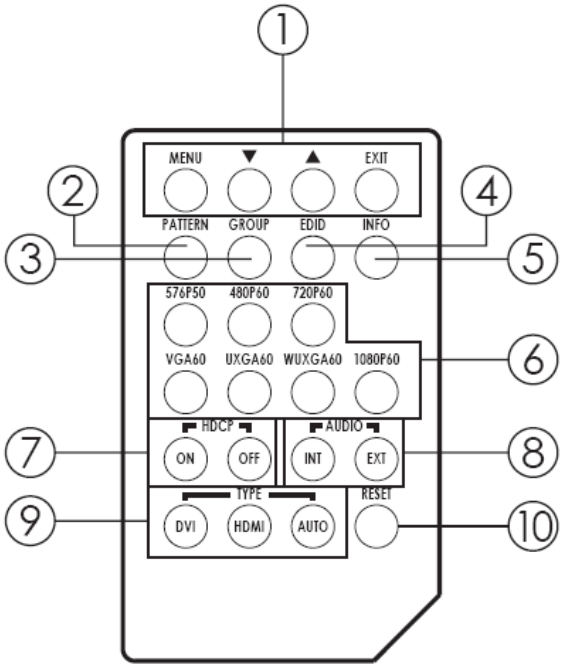
MAIN MENU		**INFORMATION**
PATTERN		RESOLUTION. 720P60
AUDIO SOURCE		PATTERN. Color bar
HDCP SETUP	→	AUDIO. internal
EDID ANALYSIS		HDCP. OFF
RESOLUTION		SIGNAL TYPE. AUTO DETECT

SIGNAL TYPE	DVI (depends on EDID of display device.)
INFORMATION	
EXIT	EXIT

Press [Exit/Menu] to return to the Main menu.
Note: After the user change the system status, the information status will changed.

Remote Control

1 OSD menu operation
2 PATTERN menu shows up.
3 Select a group of patterns.
4 Do EDID analysis.
5 Show system's infomation
6 Output Resolution Hot keys:
Press the Hot Keys for output resolution:
VGA60 / UXGA60 / WUXGA60 / 576p50 / 480p60 / 720p60 / 1080p60
7 HDCP turns on or off.
8 Select audio source - internal 1kHz sine wave or external optical
9 Select output signal type - DVI , HDMI or Auto-Detect
10 Reset system.



Specifications

- HDMI v1.2, HDCP1.1 and DVI1.0 compliant
- HDMI frequency bandwidth: 1.65Gbps (single link).
- **Output Resolution:**
  PC Mode: VGA60 / SVGA60 / XGA60 / SXGA60 / UXGA60 / WUXGA60
  HD Mode: 576p50 /480p60 / 720p50 / 720p60 / 1080p50 / 1080p60
- **Output Signal:** DVI / HDMI / Auto Detect
- **Patterns:** 8 Groups with 36 patterns
- **Audio Source:**
  1. Internal 1 kHz Sinewave 48kHz sampling rate
  2. External optical input.
- **HDMI Audio output:**
  1. From internal 1KHz Sinewave and converted to 8 channels LPCM, 48 KHz Sampling rate.
  2. From external optical input.
- **EDID support:** VESA EDID v1.3 and EIA/CEA 861 Version 3.
- **Input:** optical x1
- **Output:** HDMI female port (type A connector) x1
- **Power Supply:** 5VDC/2A power supply (AC 90~240V).
- **Weight:** 334g
- **Dimensions (W x D x H):** 125 x 125 x 30 mm