

# CPA-3

## Video Pattern Generator

### Quick Guide

#### Operation Manual



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# **1. Features and Specification**

## **Features**

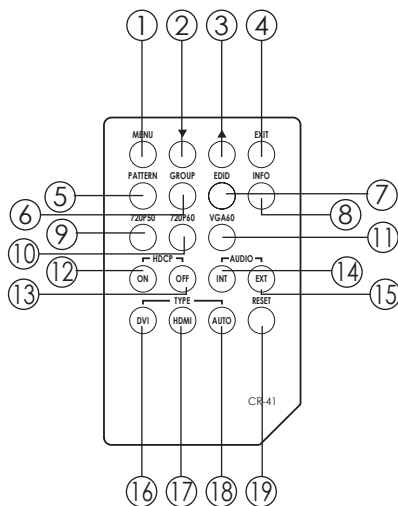
- Supports HDCP signal verification pattern.
- On-panel LED display and LED indicators
- Remote control

## **Specifications**

- HDMI v1.2, HDCP1.1 and DVI1.0 compliant
- HDMI frequency bandwidth: 1.65Gbps (single link).
- Output Resolution: 720p50 / 720p60 / VGA60
- Output Signal: DVI / HDMI / Auto Detect
- Patterns: 8 Groups with 35 patterns
- Audio Source: Internal 1 kHz Sinewave 48kHz sampling rate External optical input.
- EDID support: VESA EDID v1.3 and EIA/CEA 861 Version 3.
- Input: Toslink S/PDIF 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

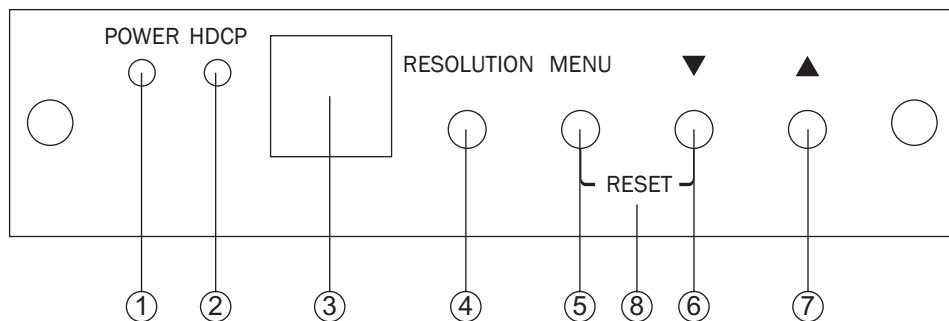
## 2. Overview of the Remote Control

- ① MENU (Enter): Press to view the OSD menu or press to enter the functions.
- ② ▼: Press to move the cursor down or switch to next pattern.
- ③ ▲: Press to move the cursor up or switch to previous pattern.
- ④ Exit: Exit the current process or return to the previous page.
- ⑤ PATTERN: Press to list pattern groups menu.
- ⑥ Group: Simultaneously press to show each group's first pattern.
- ⑦ EDID: Press to analysis EDID information.
- ⑧ INFO: Press to show unit setup information.
- ⑨ 720P50: Press to change timing to 720P50.
- ⑩ 720P60: Press to change timing to 720P60.
- ⑪ VGA60: Press to change timing to VGA60.
- ⑫ HDCP ON: Press to switch ON HDCP.
- ⑬ HDCP OFF: Press to switch OFF HDCP.
- ⑭ Audio INT: Press to select audio source from internal.
- ⑮ Audio EXT: Press to select audio source from external.
- ⑯ Type DVI: Press to change signal type to DVI.
- ⑰ Type HDMI: Press to change signal type to HDMI.
- ⑱ Type AUTO: Press to auto detects signal type HDMI/DVI.
- ⑲ Reset: Press to return to factory setting.



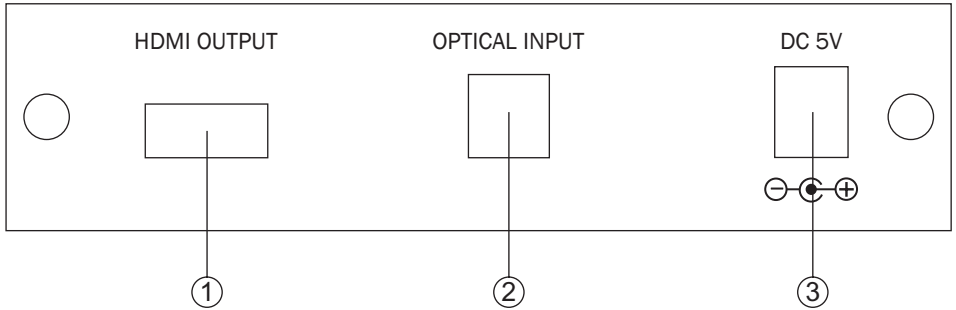
### 3. Installation and Connections

#### 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 720P50, 720P60 and VGA60.
- ⑤ MENU (Enter): Press to view the OSD menu or press to enter the functions.
- 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.

## 4. Pattern table

CPA-3 has 8 groups with 35 patterns.

| GROUP   | PATTERN | COMMENT         |
|---|---------|-----------------|
| Color Bar   |         | H/V color bars  |
| Application   |         |                 |
| <p>The color bar pattern in fact provides sufficient information for a good overall check on color performance. This includes the checks on burst keying, sub-carrier regeneration, RGB amplifiers, the delay chrominance/luminance and saturation check.</p> |         |                 |
| Grey Scale  |         | step8 / 16 / 32 |
| Application   |         |                 |
| <p>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.</p>  |         |                 |

|        |  |  |
|--------|--|--|
| 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.

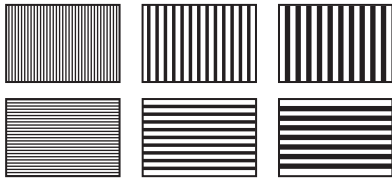
The green pattern provides a purity check for three in-line tubes. In addition the pattern serves as a reference to locate any geometrical distortions in these picture tubes. In the in-line tubes, the guns are in a horizontal position and the green gun is located in the center.

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.

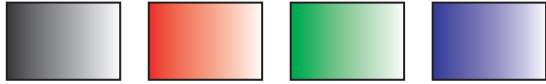
Furthermore purity patterns are used for measuring unwanted amplitude and phase modulation of the subcarrier, AM and PM noise as it occurs with VCRs.

|                    |  |              |
|--------------------|--|--------------|
| Black / White Line |  | H/V B/W line |
|--------------------|--|--------------|

**Application**

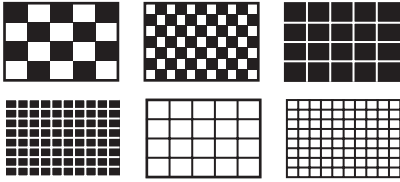
The vertical pattern serves for a quick check of color monitor's horizontal bandwidth and phase behavior of a video transmission. Also, verify video amplifier and color temperature.

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 |  | Gradual Black/White,<br>Red/White,<br>Green/White, Blue/<br>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,<br>Inverse Grid |
|------|---|--------------------------------------|

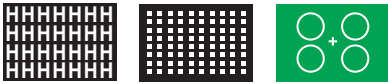
Application

This pattern is mainly used for checking and aligning dynamic and corner convergence of TVs or monitors.

|                 |   |  |
|-----------------|---|--|
| HDCP<br>Pattern |  | HDCP test and link-<br>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 Pat-<br>tern, Circle Center |
|--------|---|--|

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 circle center is present in the corners of the screen to check and adjust the geometric distortion. The center cross 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.



## 5. Using the 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.

#### **MANI MENU**

PATTERN  
AUDIO SOURCE  
HDCP SETUP  
EDID ANALYSIS  
RESOLUTION  
SIGNAL TYPE  
INFORMATION  
EXIT



#### **PATTERN**

COLOR BAR  
GRAY SCALE  
PURITY  
BLACKWHITE LINE  
GRADUAL  
GRID  
HDCP PATTERN  
OTHERS  
EXIT

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

### 5.2 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.

#### **MANI MENU**

PATTERN  
AUDIO SOURCE  
HDCP SETUP  
EDID ANALYSIS  
RESOLUTION  
SIGNAL TYPE  
INFORMATION  
EXIT



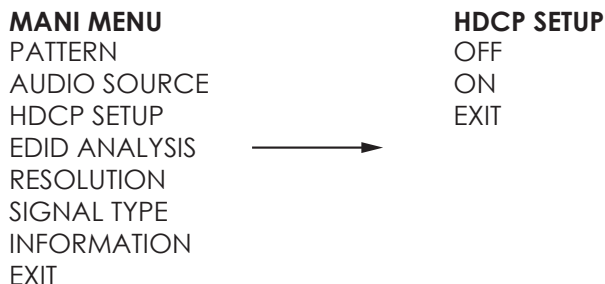
#### **AUDIO SOURCE**

INTERNAL  
EXTERNAL  
OFF  
EXIT

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

### 5.3 HDCP setup

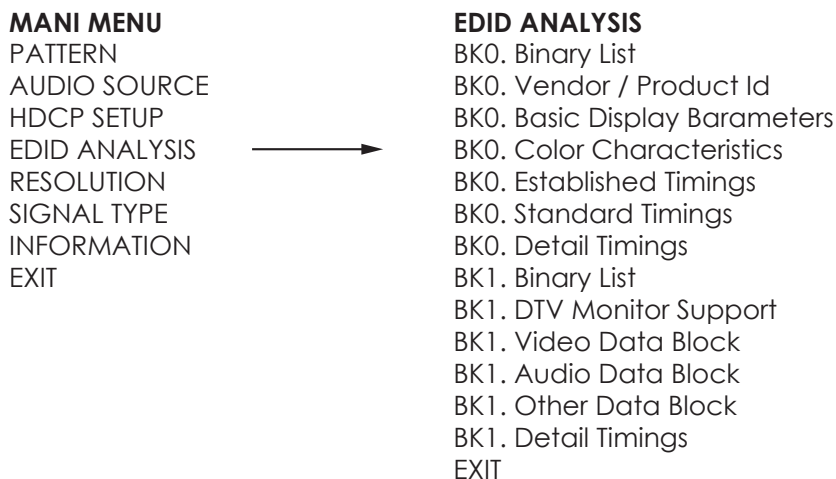
Press [▲/▼] to move the cursor and then press [Menu] to enter the HDCP setup. After the HDCP setup been selected press [Menu] to confirm the selection.



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

### 5.4 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.



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

## 5.5 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.

| <b>MANI MENU</b> |   | <b>RESOLUTION</b> |
|------------------|---|-------------------|
| PATTERN          |   | 720P50            |
| AUDIO SOURCE     |   | 720P60            |
| HDCP SETUP       |   | VGA60             |
| EDID ANALYSIS    | → | EXIT              |
| RESOLUTION       |   |                   |
| SIGNAL TYPE      |   |                   |
| INFORMATION      |   |                   |
| EXIT             |   |                   |

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

## 5.6 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.

| <b>MANI MENU</b> |   | <b>SIGNAL TYPE</b> |
|------------------|---|--------------------|
| PATTERN          |   | DVI                |
| AUDIO SOURCE     |   | HDMI               |
| HDCP SETUP       |   | AUTO DETECT        |
| EDID ANALYSIS    | → | EXIT               |
| RESOLUTION       |   |                    |
| SIGNAL TYPE      |   |                    |
| INFORMATION      |   |                    |
| EXIT             |   |                    |

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

## 5.7 Information

Press [▲/▼] to move the cursor and then press [Menu] to show system information.

| <b>MANI MENU</b> |   | <b>INFORMATION</b>       |
|------------------|---|--------------------------|
| PATTERN          |   | RESOLUTION, VGA60        |
| AUDKO SOURCE     |   | RATTERN, GRID            |
| HDCP SETUP       |   | AUDIO. OFF               |
| EDID ANALYSIS    | → | HDCP. OFF                |
| RESOLUTION       |   | SIGNAL TYPE. AUTO DETECT |
| SIGNAL TYPE      |   | DVI                      |
| INFORMATION      |   | EXIT                     |
| EXIT             |   |                          |

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



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