MONTEST-CMP

Component Video Pattern Generator

YPbPr PATTERN GENERATOR

Chapter 1 Introduction

MONTEST-CMP is a test pattern generator with RCA (YPbPr) connectors designed to be a useful tool for the new generation of digital TV products. MONTEST supports up to 7 resolutions and 34 patterns for you to test and calibrate a digital monitor. Further, it also can improve the quality of HDTV monitor with side by side comparisons. Through the friendly interface and smart design, not only is it easy to use the MONTEST but you can also reduce your test expenditure.

⚠Caution

To avoid and minimize the risk of damage to MONTEST, please pay attention to the safety instructions even though the MONTEST has been tested for conformance to safety requirements and certified for international use.

- Follow all instructions marked on the device during use.
- Do not attempt to maintain the device by yourself, any faults, please contact your vendor.
- Provide proper ventilation and air circulation and do not use near water.
- It is better to keep it in a dry environment.
- Only using the power adapter and connection cables that are supported with the device.
- After purchasing and before using the MONTEST the first time, please charge it continuously for more than 16 hours.
- It is better to charge the battery when the battery power indicator becomes low.
- The MONTEST will save the last setting values automatically.
- Do not use liquid or aerosol cleaners to clean the device.
- Always unplug the power to the device before cleaning.

1.1 Package Contents

- 1 HDTV Component Video pattern generator
- 1 power adapter with DC 12V 1.25A
- 4 replaceable plugs (for USA, UK, Europe and Australia DC plugs.)
- 1 user manual
- 1 YPbPr 1.2M cable

All packages have been checked carefully for their completeness and functionality before shipping. Please contact your vendor if any items listed above are missing or damaged.

1.2 Resolution

- Use for test and calibrating HDTV equipments.
- Use for test and calibrating DTV monitor.
- Use for Video product lines.

1.3 Features

- Intelligent functionality.
- With 148.5 MHz pixel frequency.
- Support total 10 timings. (up to 1080p)
- Support Sync Type: Bi-Level(EIA) and Tri-Level(SMPTE).
- Low cost.
- Single interface easily use.
- Portable design, working time up to 6~8 hours by inside Re-chargeable battery.
- Auto Power-off on Battery mode.
- Provide total 34 patterns, Include: Color bar, Gray, Grid, Block…
- By 16x2 Character LCD and key buttons, easily control.

1.4 Specifications

Function	MONTEST-CMP
Video Output Connector	YPbPr
Select Switch	7
LCD Module: 16*2 Character Display	1
Max. Resolution	1920x1080p @ 60 Hz
Highest Pixel Frequency	148.5MHz
Cable Distance	5M Max.
Power Adapter (Min.)	DC 12V 1.25A
Housing	Plastic
Weight	385 g
Dimensions (LxWxH)	180x96x34 mm

1.5 Front Panel

1. Video output port (Y,Pb,Pr)

2. LCD Module

3. Function Keys

4. Return

5. Power On/Off

6. Power Jack 2.0 ϕ

YPbPr
PATTERN GENERATOR
PG-Y1
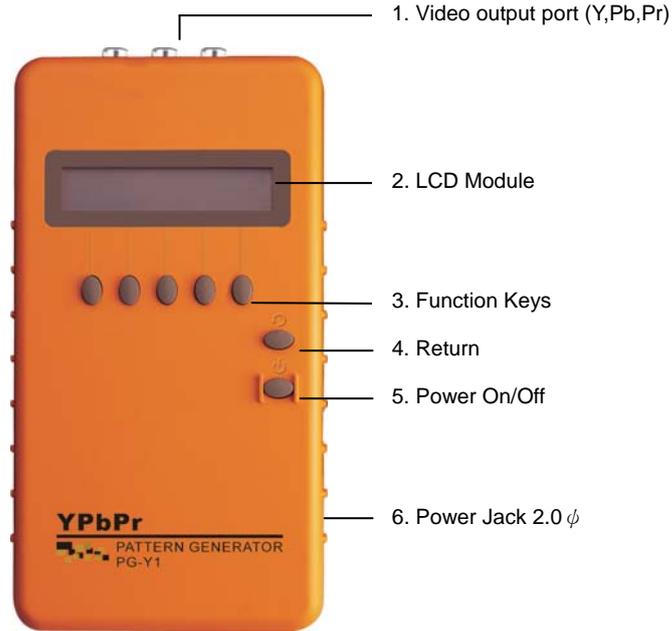
1. **Video Output Port (Y, Pb, Pr):** Connect to the attached Video cable. (refer to 1.6.1 RCA Connector chapter)
2. **LCD Module:** 16*2 Character Display.
3. **Function Keys:** Depend on the different operation configuration will show you different functions of the keys.
4. " ↻ " **Return:** Return to up configuration page.
5. " ⏻ " **Power On/Off:** Press at least more than 3 seconds to power on/ff the MONTEST.
6. **Power Jack:** Connect to the DC 12V 1.25A power adapter. (refer to 1.6.2 Power Jack chapter)

1.6 Side Panel

1.6.1 RCA connectors

Use for RCA cable connections. These connectors are labeled Y, Pb and Pr. These are HDTV-Component video connections to be connected to the Y, Pb and Pr connectors of a HDTV monitor or TV with component video input.

- **Y** connector: Y is for luminance signal drive a 1V peak-to peak signal into a 75-ohm load. The Y signal can be used alone in some cases, just like using luminance to test only of an NTSC, PAL or SECAM TV with its Composite input. The signal will be seen as a monochrome image, which is fine for most patterns which are monochrome.
- **Pb** connector: Pb is for the chrominance (color) signal drive 0.7V peak-to-peak signals into 75-ohm loads.
- **Pr** connector: Pr is for the chrominance (color) signal drive 0.7V peak-to-peak signals into 75-ohm loads.

1.6.2 Power Jack

Use for the DC 12V 1.25A power adapter. The **Power Jack** is on the right side of the device. PG-Y1 supports 4 replaceable plugs (for USA, UK, Europe and Australia DC plugs.)

 Power Jack

Chapter 2 Connection

2.1 Preparation

⚠Caution

Please power off the TV monitor and MONTEST before you begin the connection

2.1.1 Plugs

MONTEST-CMP supports up to 4 replaceable plugs (for USA, UK, Europe and Australia DC plugs.). Please depend on where the location is to exchange the suitable plug.

US Plug   UK Plug   AU Plug   EU plug
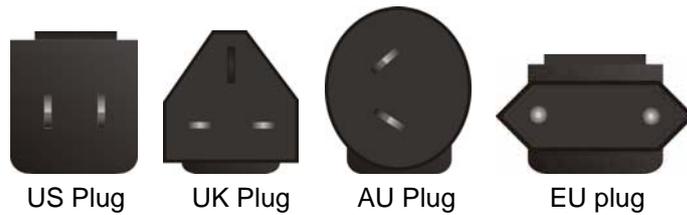
2.1.2 Plug replacement

MONTEST supports a power adapter DC 12V 1.25A with a plastic ring to protect the connector. Before you connect the adapter, you have to dismantle the plastic ring first. Refer to the pictures below to dismantle the plastic ring.

⚠Caution

Please also pull down the slider to exchange the suitable plug.

2.2 Connect MONTEST-CMP to Monitor
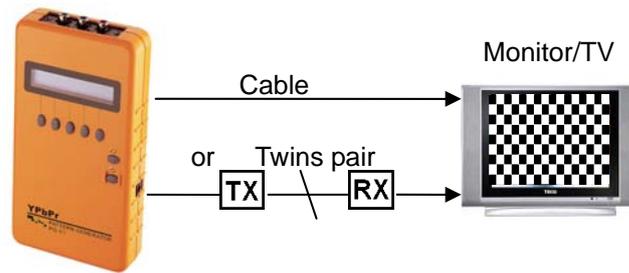
- Connect the attached DC adapter cable from MONTEST to the power source (outlet).
- Connect the RCA cable from MONTEST to the Monitor/TV.
- Power on the Monitor/TV.
- Press the power key of MONTEST for more than 3 seconds to power on/off the MONTEST.

⚠Caution

Please power off the Monitor/TV before begin the connection.

Chapter 3 Operation

☞ 1. After pressing the power On/Off key for 2~3 seconds
the MONTEST will sound a long **"beep"**.
2. Only for the valid key of MONTEST will sound a short
confirmed **"beep"** after pressing the key.
3. The chosen option will blink.
4. After changing the values, remember to press
"**Enter**" indicated key to save the changed values
effectively.

3.1 Starting Status

After pressing the **Power** key to power on the MONTEST, the
LCD screen will show you the MONTEST (PG-Y1) version suddenly
then show you the main screen as below (or previous
setting values saved in the MONTEST's memory):
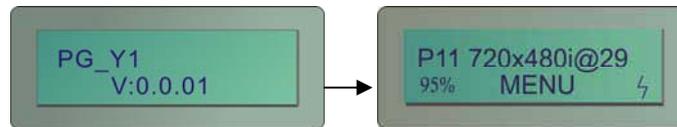
P11 720x480i @29

- **P11:** Pattern 11 (refer to Appendix B: **Pattern chart)**
- **720x480i:** Resolution is 720X480i
- **@29:** Refresh rate is 29Hz
- **95%:** OVERSCAN (dump percentage 0~10%).
- "⚡": The power of battery is charging.

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3.2 Power and Battery

The device is suited to the DC 12V 1.25A power adapter and 4 inside Re-chargeable batteries. The signals of PG-Y1's battery on the lower right are described as below:

- "⚡": The power of battery is charging.
- "▮": The power of battery is in full charging.
- "⊠": The battery is fault.

☞ 1. When the device stands by for about 39 minutes, it will sound two short **"beep".** After the two short "beep" sounds about 1 minute, the device will sound a long **"beep"** and shout down automatically.

2. When the battery power is lower than 5% just as "▱", a warming sound **"beep"** will be heard each second. The sound will continue for 5 minutes, if you don't get the external power to instead of the internal battery power. The device will shout down immediately. We suggest you it is better to charge the batteries when they are in the lower status. (Before the device shout down, the device will save the last set values including Pattern No., Resolution, Ver. Frequency, P02 Blinking_BLK&WHT No. and Sync_MODE automatically.)

3.3 MENU Configurations

☞ The figures in this chapter are for **P11 720x480i@29** mode reference

After you power on the MONTEST, please press the **MENU** indicated key. The **MENU** configuration screen will be showed as below:

```
P11 720x480i @29
Tim Ptn Info Hky
```

3.3.1 Tim configuration

Press the **Tim** indicated key, the **Tim** configuration screen will be showed as below:

```
720x480i @29
 ▲    ▼    ◄    ►         ↵
```
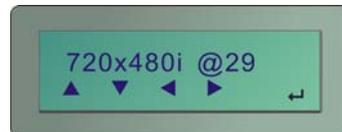
- "▲": Adjust the **Resolution** and **Refresh Rate** with up values. (refer to Appendix A: PG-Y1 output signal specification chart)
- "▼": Adjust the **Resolution** and **Refresh Rate** with down values. (refer to Appendix A: PG-Y1 output signal specification chart)
- "◄"," ►": Switch between **Resolution** and **Refresh Rate** options.
- "↵": Confirm the changed value. (After press the "↵" indicated key the screen will be showed as below:)

```
720x480i @29
Output ...
```
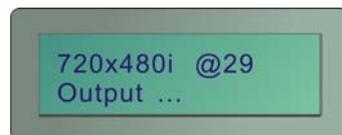
3.3.2 Ptn configuration

Press the **Ptn** indicated key, the **Ptn** configuration screen will be showed as below:

```
┌──────────────────────┐
│                      │
│  P11 GRAY_8          │
│   ▲   ▼            ↵  │
│                      │
└──────────────────────┘
```

- "▲": Switch the **Pattern** mode with up page. (refer to Appendix B: Pattern chart)
- "▼": Switch the **Pattern** mode with down page. (refer to Appendix B: Pattern chart)
- "↵": Confirm the changed value. (After press the "↵" indicated key the screen will be showed as below:)

```
┌──────────────────────┐
│                      │
│  GRAY_8              │
│  Output ...          │
│                      │
└──────────────────────┘
```
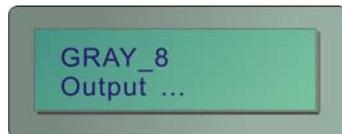
P02 Blinking mode configuration:

```
┌──────────────────────┐
│                      │
│  P02 BLINKING        │
│   ▲   ▼      Set   ↵ │
│                      │
└──────────────────────┘
```
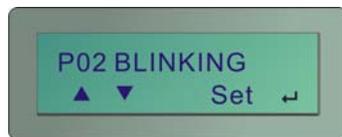
Press the **Set** indicated key to enter the black and white setting configuration as below (you can set the black and white blinking frequency (frames/value) here):

```
┌──────────────────────┐
│                      │
│  BLK:002  WHT:002    │
│   ▲   ▼   ◄   ►    ↵ │
│                      │
└──────────────────────┘
```

- "▲": Increase the **BLK** or **WHT** blinking frequency value. The value is up to 255.
- "▼": Decrease the **BLK** or **WHT** blinking frequency value.
- "◄","►": Switch between **BLK** and **WHT** options.
- "↵": Confirm the changed value.

☞ 1. Both **BLK/WHT** are the condensations for **Black/White**.
2. The bigger Value is set, the lower blinking frequency is supported.
3. When the value is 001, the "▼" indicated key is no any function.

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3.3.3 Info configuration

Press the **Info** indicated key, the **Info** configuration screen will be showed as below:

the **Info** configuration screen including:

> Pixel Clock
> Hor Freq
> Hor Total
> Hor Active
> Hor Front Porch
> Hor Back Porch
> Hor Sync Width
> Ver Freq
> Ver Total
> Ver Active
> Ver Front Porch
> Ver Back Porch
> Ver Sync Width
> Sync Type

3.3.4 Hky (Hot key) configuration

Press the **Hky** indicated key, the **Hky** page 1 configuration screen will be showed as below:

- **"O"**: Represent for **"Enable"**.
- **"X"**: Represent for **"Disable"**.
- **"Pr"**: Pr component output.
- **"Y"**: Y component output.
- **"Pb"**: Pb component output.
- **"Rev"**: Pattern reverse
- **"⌄"**: Next page.

Press the "⌄" to enter the **Hky** page 2 configuration screen as below:

```
0
OUT   OVS          ⌃
```
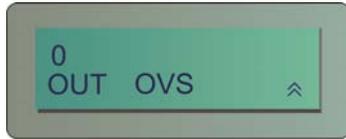
- **"O"**: Represent for **"Enable"**.
- **"X"**: Represent for **"Disable"**.
- **"Out"**: Video Output control (On/Off).
- **OVS** mode configuration:

```
OVERSCAN: 0%
  ▲    ▼
```
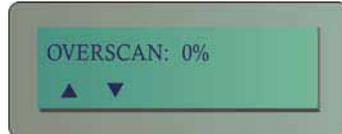
- "▲": Increase the OVERSCAN dump percentage.
   The value is up to 10.
- "▼": Decrease the OVERSCAN dump percentage.
   The value is down to 0.
- "⌃": Next page.

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Chapter 4 Troubleshooting

1. If there is no image when using the MONTEST, please ensure the following matters:

    a. If it is unable to switch on→there is a possibility of fault battery or inferior battery. Please connect it with the transformer.
    b. If it is able to switch on but there is no image→
       ■ Lower the resolution or change the resolution and vertical frequency.

2. What should be done when using the MONTEST the first time?

    After purchasing and before using the MONTEST the first time, please charge it continuously for at least 16 hours.

3. What is the Pattern Generator's function?

    a. Use to test and maintain studio equipment, such as monitor, cabling, and recording equipment.
    b. For a TV engineer or technician wants to test and calibrate a DTV monitor during repair.
    c. A home-theater user wants to get the best results out of the DTV equipment.
    d. A studio installer wants to test cables and equipment so that can get the best effect.
    e. For the DTV sets seller to show side by side comparisons of quality.
    f. For teacher to train their students about the latest DTV quality test technologies.
    g. To test a new DTV set whether compatibility with the ATSC standards.

4. How to save the changed setting values?

    The MONTEST will save the last changed setting values automatically.

5. When should I have to charge the battery?

    We suggest that you charge the battery when the battery power indicator indicates it is low.

Appendix A

YPbPr Output Signal Specification Chart:

NO	Resolution	Ver Freq (Hz)	Pixel Freq (MHz)	Sync Type
1	720x480i	59	13.5	Bi- Level
2	720x576i	50	13.5	Bi- Level
3	720x480p	59	27	Bi- Level
4	720x576p	50	27	Bi- Level
5	1280x720p	50	74.25	Tri- Level
6	1280x720p	60	74.25	Tri- Level
7	1920x1080i	50	74.25	Tri- Level
8	1920x1080i	60	74.25	Tri- Level
9	1920x1080i	50	148.5	Tri- Level
10	1920x1080i	60	148.5	Tri- Level

Appendix B

Pattern chart:

1. FLAT	2. Blinking	3. GRADUALLY	4. GRID_4x3
5. GRID_16x12	6. COLOR_GRID	7. COLORBAR_1	8. COLORBAR_2
9. COLORBAR_3	10. COLORBAR_4	11. GRAY_8	12. GRAY_16
13. GRAY_32	14. GRAY_64	15. DYNAGRAY	16. GRAY_1
17. COLORGRAY64	18. BWSWING	19. BW2SWING	20. WINDOW_1
21. WINDOW_2	22. WINDOW_3	23. WINDOW_4	24. VLINE_1
25. VLINE_2	26. VLINE_3	27. H Pattern_1	28. H Pattern_2
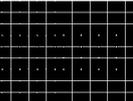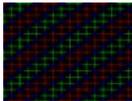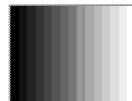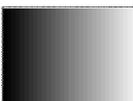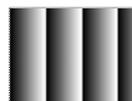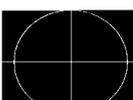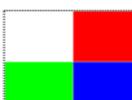
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29. BLOCK_1	30. BLOCK_4x3	31. BLOCK_16x12	32. HLINE_1

33. HLINE_2	34. HLINE_3