



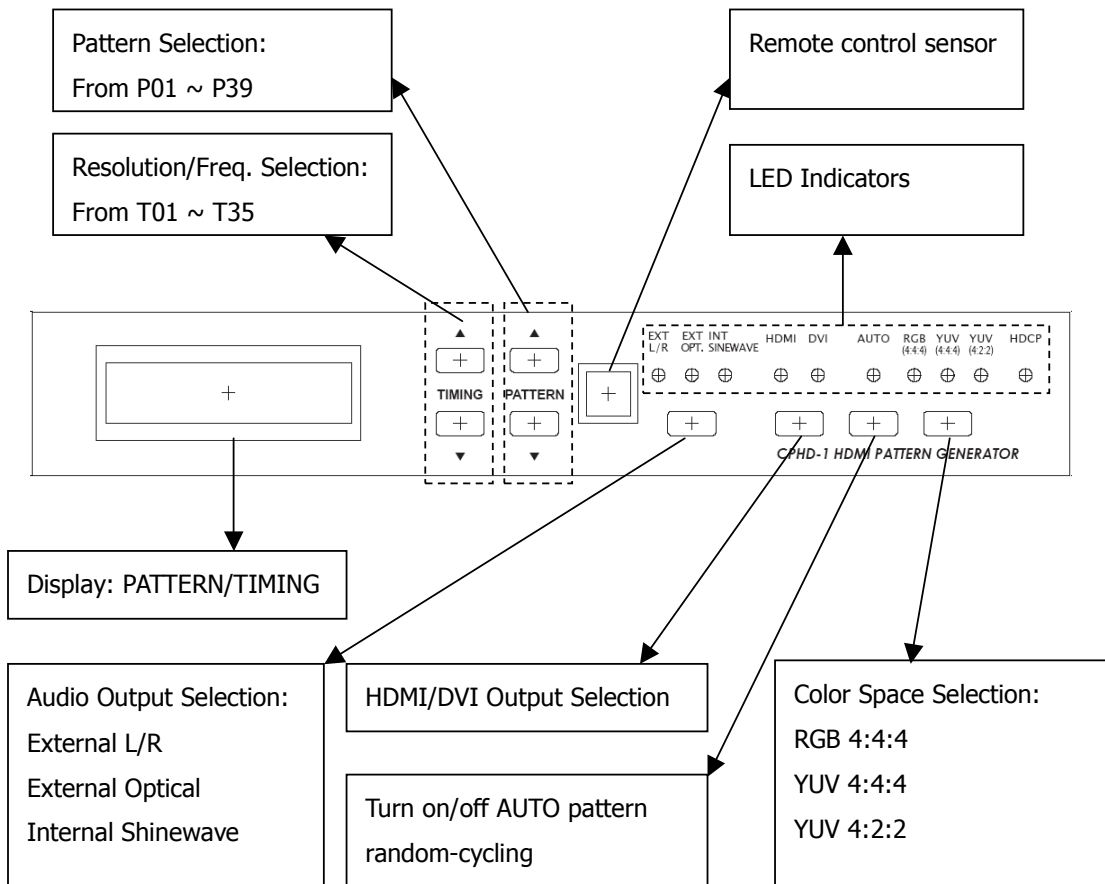
XGEN-PRO

High-Definition Video
Pattern Generator

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Part I: Front Panel Operation



NOTE:

1. Display of PATTERN/TIMING:

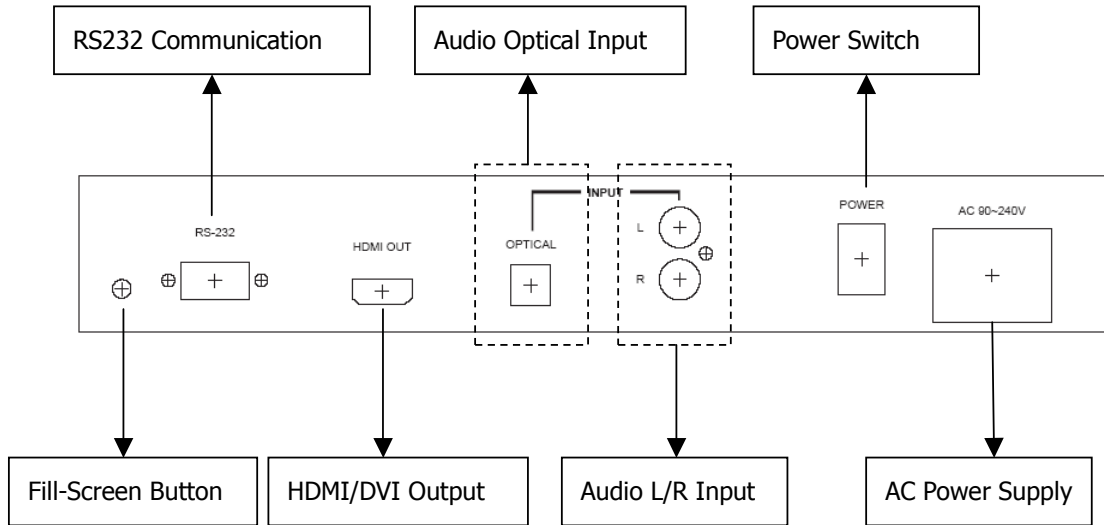
Upper line: Number of TIMING, Resolution and Frequency (Example: T01 640x480-60)

Lower line: Number of PATTERN and name of PATTERN (Example: P01 WHITE)

2. HDCP LED Indicator:

The LED will illuminate only when pattern "P39 HDCP-Produce" is selected and the output display (TV, monitor, etc.) supports HDCP.

Part II: Rear Panel Installation and Connection



NOTE:

1. Fill-Screen Button:

For some modals of TV/monitor, the video signal can not fill the screen of display completely, to correct this problem, press the button once when the power is on.

2. HDMI OUT:

The HDMI output can be connected to a HDMI display using HDMI cable, or to a DVI display using HDMI to DVI cable.

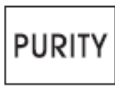







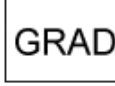
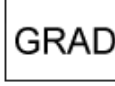
3. RS232 Communication Port:

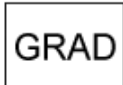






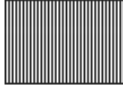
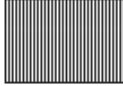

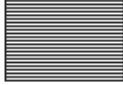
Connect to the COM1 or COM2 port of your PC, and control the unit remotely using the application provided.

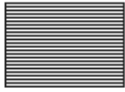



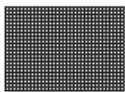




Part III: TIMING Table

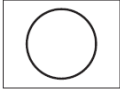
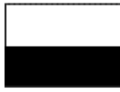




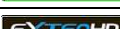
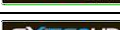
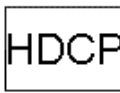
No.	Resolution	Frequency (Hz)
T01	640x480	60
T02	640x480	72
T03	640x480	75
T04	640x480	85
T05	800x600	56
T06	800x600	60
T07	800x600	72
T08	800x600	75
T09	800x600	85
T10	1024x768	60
T11	1024x768	70
T12	1024x768	75
T13	1024x768	85
T14	1280x960	60
T15	1280x960	85
T16	1280x1024	60
T17	1280x1024	75
T18	1280x1024	85
T19	1600x1200	60
T20	1920x1200	60
T21	720x480 i	59
T22	720x480 i	60
T23	720x480 p	59
T24	720x480 p	60
T25	1280x720 p	59
T26	1280x720 p	60
T27	1920x1080 i	59
T28	1920x1080 i	60
T29	1920x1080 p	59
T30	1920x1080 p	60
T31	720x576 i	50
T32	720x576 p	50
T33	1280x720 p	50
T34	1920x1080 i	50
T35	1920x1080 p	50

Part IV: PATTERN Table

No.	Signal Content	Description	Application
P01		Purity pattern White (100% Y) 3 primary colors: Red, Green, Blue 3 complementary colors: Magenta, Yellow, Cyan Black P01: White P02: Blue P03: Red P04: Magenta P05: Green P06: Cyan P07: Yellow P08: Black	-Brightness control -Purity checks and adjustment -Interference between sound and chroma carrier -Color A.G.C. -Chroma writing current of video recorders -White setting -Synchronization -FM demodulator (white level) -Beam current of picture tube -Luminance writing current
P02			
P03			
P04			
P05			
P06			
P07			
P08			
P09		Gradual pattern Gradual transition of colors.	-Brightness control -Luminance writing current -Linearity of video amplifier -Overall color performance -Amplitude response/
P10			

P11		P11: Blue P12: Gray	resolution -Linearity of chroma amplitude
P12			
P13		Color Bar Comprises 8 vertical bars- White, Yellow, Cyan, Green, Magenta, Red, Blue and Black	-Overall color performance -Burst keying -Subcarrier regeneration -Matrix circuit check -RGB amplifiers -Color delay versus B/W signal saturation
P14		Grayscale Full screen linear staircase signal with 8/16/32/64 identical steps from black to white P14: 8 steps P15: 16 steps P16: 32 steps P17: 64 steps	-Brightness + contrast circuitry -Grayscale tracking -Linearity of video amplifier
P15			
P16			
P17			
P18		Black-White Vertical Full screen linear vertical bar signal with black/white intervals of 1/6/12 pixels. P18: 1 pixel P19: 6 pixels P20: 12 pixels	-Check bandwidth and phase behavior of a video transmission -Verify video amplifier -Verify color temperature
P19			
P20			
P21		Black-White Horizontal Full screen linear Horizontal bar signal with	-Check bandwidth and phase behavior of a video transmission

P22		black/white intervals of 1/3/6 pixels.	-Verify video amplifier -Verify color temperature
P23		P21: 1 pixel P22: 3 pixels P23: 6 pixels	
P24		Multi-burst Full screen definition pattern of frequencies 0.5, 1.0, 2.0, 4.0, 4.8, and 5.8 MHz for 625 line systems.	-Video bandwidth -Check luminance amplifier in B/W -Amplitude response/resolution -Check resolution of monitors and video recorders -Measure the frequency amplitude response
P25		P24: Multi-burst 1 P25: Multi-burst 2	
P26		Grid Full screen grid with black/white intervals of 1/3/6/12 pixels.	-Static convergence -Dynamic convergence -Pin-cushion correction -E/W-N/S corrections -Amplitude response
P27		P26: 1 pixel	
P28		P27: 3 pixels P28: 6 pixels P29: 12 pixels	
P29			
P30		Running H Full screen filled with lines of H characters, a new line of H will run from upper left corner and fill down when a line is completed.	-Text verification -Check refreshing rate -Video motion verification

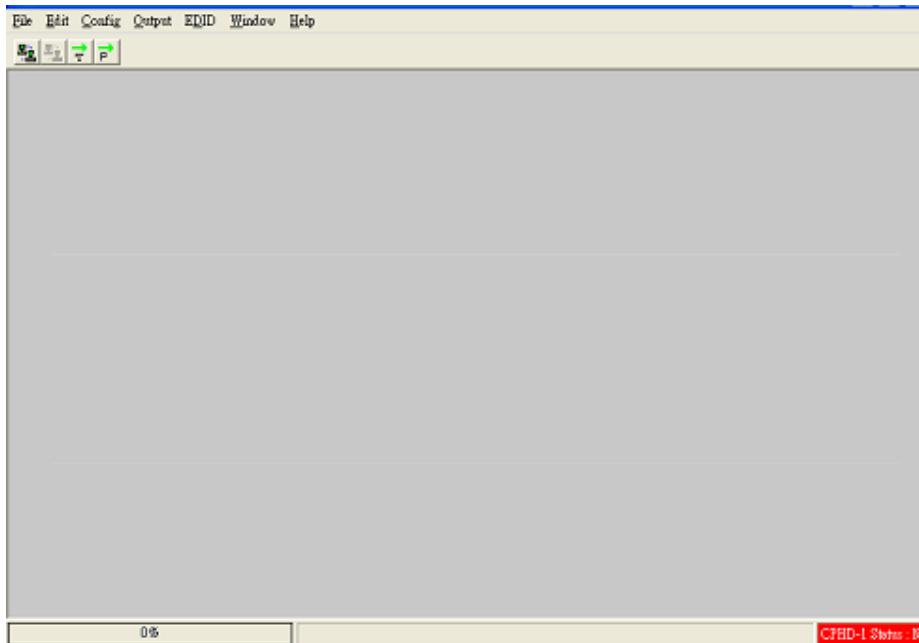
P31		Circle Black circles on white background, 640x480 has 4 by 3 total 12 circles, 800x600 has 5 by 3 total 15 circles, 1024x768 has 6 by 4 total 24 circles,	-Overall linearity -Overall geometry -Framing -Reflections
P32		Black/White Up/Down Full screen filled with upper half of 100% white and lower half of 100% black.	-Brightness control -Purity checks and adjustment -White setting -Synchronization
P33		eXtenHD Patterns eXtenHD specifically designed patterns. P33: EXT-1 P34: EXT-2 P35: EXT-3 P36: EXT-4 P37: EXT-5 P38: EXT-6	-Multiple purposes
P34			
P35			
P36			
P37			
P38			
P39		HDCP-Produce Green/Blue horizontal bars with HDCP verification and data comparison on the upper first third area of black background	-HDCP verification -HDCP data comparison -HDCP authentication check -HDCP transmitting encrypted data check

Part V: RS232 Remote Control Application

1. Main Window

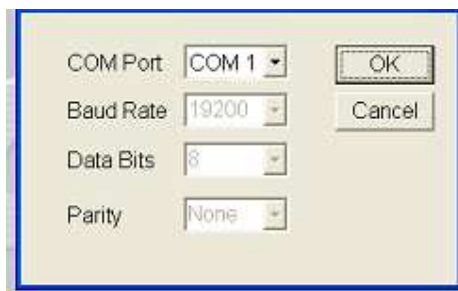
Double-click the executable exe file to launch the application, the main window will show up.

Click the Connect  button to link to the unit.



2. Select COM port to control

The application will prompt you to select which COM port connected to the unit you want to control. Select from COM1 or COM2 and click OK.



3. Switch TIMING

Click the TIMING  button to launch the TIMING selection window.

Click "Show List" button to select from TIMING list and adjust the

Horizontal/Vertical/Pixel Clock settings, when complete, click "Run Timing" button to start the output of selected timing (resolution/frequency.)

Timing No. Select
Timing No. 1 640x480-60 Show List Run Timing

Horizontal

Total	800	Pixels	31.778	µS
Active	640	Pixels	25.422	µS
Pulse Delay	16	Pixels	0.636	µS
Pulse Width	96	Pixels	3.813	µS
Polarity	-			
Rate	31.469			KHz

Vertical

Total	525	Lines	16.633	mS
Active	480	Lines	15.253	mS
Pulse Delay	10	Lines	0.318	mS
Pulse Width	2	Lines	0.064	mS
Polarity	-			
Rate	59.940			Hz

Pixel Clock: 25.175 MHz

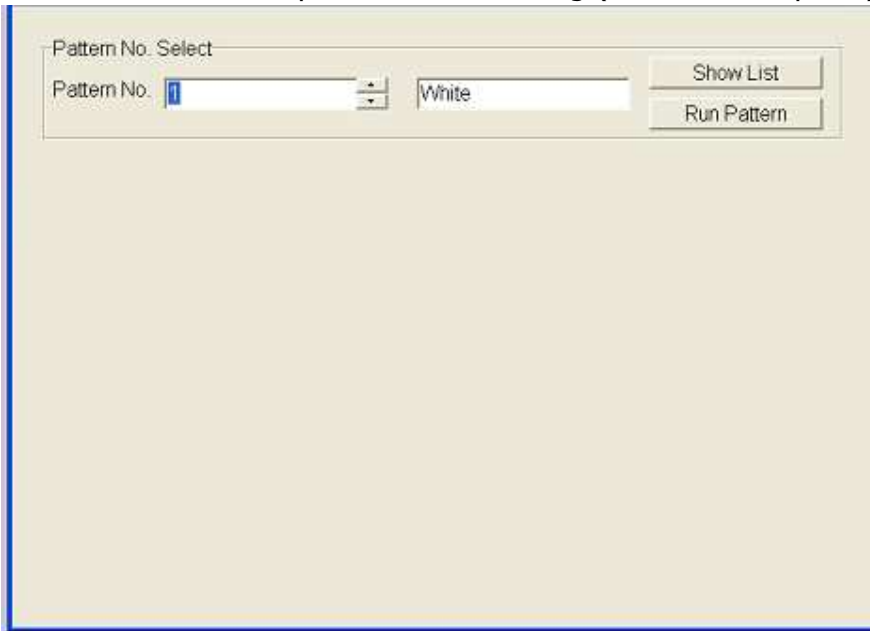
List of Timings

Timing Name	Pixel Rate	Horizontal	Vertical
640x480-60	25.175 MHz	31.469 KHz	59.940 Hz
640x480-72	31.500 MHz	37.861 KHz	72.809 Hz
640x480-75	31.500 MHz	37.500 KHz	75.000 Hz
640x480-85	36.000 MHz	43.269 KHz	85.008 Hz
800x600-56	36.000 MHz	35.156 KHz	56.250 Hz
800x600-60	40.000 MHz	37.879 KHz	60.317 Hz
800x600-72	50.000 MHz	48.077 KHz	72.188 Hz
800x600-75	49.500 MHz	46.875 KHz	75.000 Hz
800x600-85	56.250 MHz	53.674 KHz	85.061 Hz
1024x768-60	65.000 MHz	48.363 KHz	60.004 Hz
1024x768-70	75.000 MHz	56.476 KHz	70.069 Hz
1024x768-75	78.750 MHz	60.023 KHz	75.029 Hz
1024x768-85	94.500 MHz	68.677 KHz	84.997 Hz

4. Switch PATTERN

Click the PATTERN  button to launch the PATTERN selection window.

Click "Show List" button to select from TIMING list and adjust the Horizontal/Vertical/Pixel Clock settings, when complete, click "Run Timing" button to start the output of selected timing (resolution/frequency.)



List of Patterns



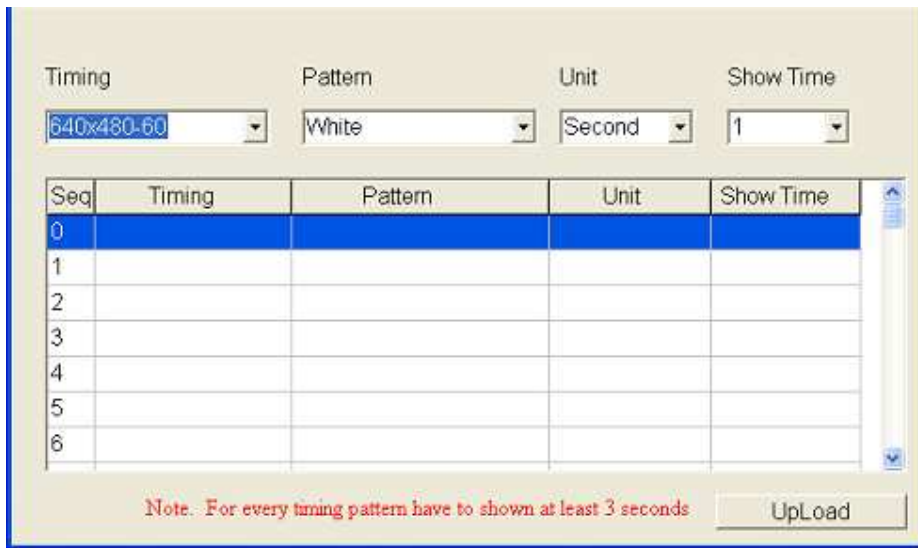
Pattern NO	Pattern Name
1	White
2	Blue
3	Red
4	Magenta
5	Green
6	Cyan
7	Yellow
8	Black
9	Gradually Red
10	Gradually Green
11	Gradually Blue
12	Gradually Gray
13	Color Bar
14	Gray-8

5. Programming TIMING/PATTERN

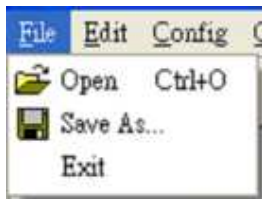
Click and select the "Program" from "Edit" option of the tool bar to launch the Program window.

Program the desired sequence of timing/pattern/unit/show time, then click

“Upload” to send the program to the unit.



Click and select the “Save as” from “File” option of the tool bar to save your program. You click the “Open” from “File” option of the tool bar later on to load your saved program.



Part VI: Remote Control

