

Programmable Video Pattern Generator

MODEL 2237/2337

Analog 360 MHz

Digital 330 MHz

Key Features :

- Analog pixel rate to 360 MHz and Digital (TMDS) to 330 MHz
- Ultra fast slew rate less than 1.1ns for analog output (typical)
- Graphic display size up to 2048 X 2048 (4096 X 2048 Optional)
- One pixel resolution
- Superior frequency setting to 25PPM (typical) and 1PPM after calibration
- Natural picture with BMP format for checking total balance of color
- Factory-installed standard 100 timings and 100 patterns library
- Customer install 300 timings and 100 patterns
- DVI-I / DVI-D connector and One link / Two link support
- DDC2B: Read and Write to smart monitor
- Build-in self test and Auto calibration



MODEL 2237

Programmable Video Pattern Generator MODEL: 2237/2337

Chroma 2237/2337 Video Pattern Generator that follow the VESA and DFP Standards. They meet the high frequency digital and analog signal requirements of today and the near future to provide Video Display Device for display characteristics test. Besides the complete factory built-in test functions, the 2237 allows users to edit various timing parameters and patterns from the panel or through the windows based software VPG PLUS on PC.

This series of products provide both analog and digital signals to support the resolution above QXGA (2048 X 1536), and the digital signal (TMDS) is able to switch automatically between 165MHz or 330MHz in 1 Link or 2 Link transmission. The transmission interface uses the DVI-I or DVI-D standard for future display and supports DDC2B standard. The features of high frequency and complete signals with test functions are the best solution for high resolution CRT and LCD monitor test in development, manufacturing and quality assurance.

The 2237 is designed with the accurate Phase Lock Loop (PLL), which can reach 25PPM/1PPM after calibration and provide video signals for 256 colors per pixel. It's maximum video frequency is 330MHz for digital and 360MHz for analog. Both video horizontal and vertical sync signals are in one pixel resolution. The software built in the 2237 contains the functions like video frequencies, video levels, timing parameters, patterns, and colors for users to recall and edit. Its internal timing parameters, natural pictures and patterns make the monitor tests for

display size, response, linearity, focus, geometry, resolution, contrast, color, noise, cross talk, and voltage regulation more convenient. In addition, there are optional memory cards available for purchase to store the user defined timing parameters, natural pictures and patterns.

Users can edit various timing parameters and patterns from the front panel, or utilize the VPGplus software on PC to display them on monitor for auto execution or manual control. This makes the natural picture generation including flash and motion picture quite easy. The 2237 not only supplies monitor to test the function of power saving mode, it also provides panel operation and RS232 interface for input setting. To ensure it can work smoothly under extreme conditions, its unique 5 output protections can safeguard the high frequency output components effectively. Meanwhile its entire digitalized design without any adjustable components allows automatic calibration at any time that can maintain high accuracy and diminish the deterioration or offset situation.

The 2337 is a compact digital/analog test instrument, which the natural pictures and timing parameters are set by memory card or the 2237 Programmable Video Pattern Generator. It can be controlled by PC via RS232 interface. The 2337 is an economic and easy solution for you to keep your leadership in video display industry in production, testing, maintenance and application.

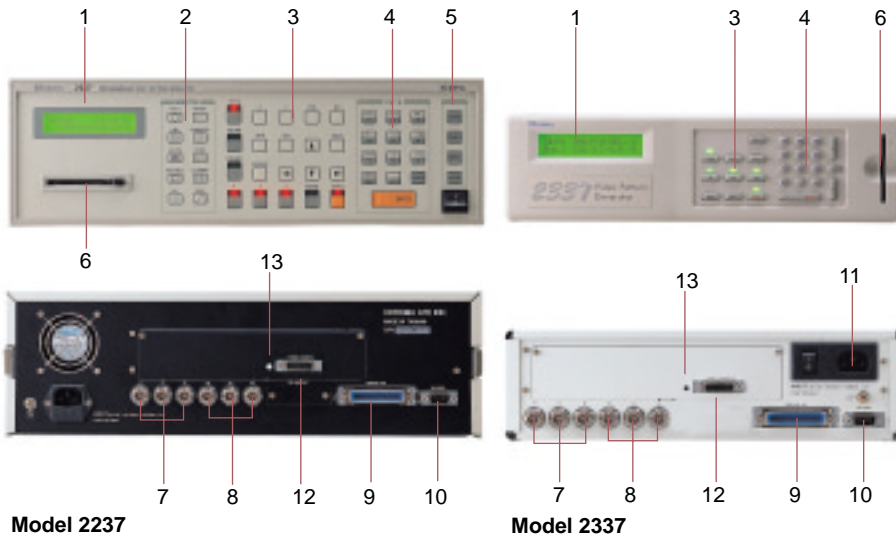
MODEL 2337



Chroma



Programmable Video Pattern Generator



- 1. LCD Display**
- 2. Icon Keys:** For icon type selection
- 3. Function Key:** Timing & Pattern
- 4. Alphanumeric Keys:** For data input
- 5. Config Key:** General information setting
- 6. Memory Card:** For storage memory expansion
- 7. Analog Signal Output R.G.B.**
- 8. Sync Output:** For analog R.G.B.
- 9. I / O Port:** Panel remote input & control output
- 10. RS-232C Interface**
- 11. AC Input**
- 12. DVI Output:** DVI-I & DVI-D
- 13. TMDS Output Voltage Swing Adjust**

Model 2237

Model 2337

SPECIFICATIONS

Model 2237 / 2337	
Pixel Rate Range	15 ~ 360MHz (Analog), 25 ~ 330MHz (TMDS)
Resolution	1Hz
Accuracy	25PPM (typical), 1PPM (after calibration)
DVI OUTPUT	
Pixel Rate Range	TMDS: 25-330MHz (1 link 165 MHz, 2 link >165 MHz) Analog: 3.126 ~ 360MHz
DDC2B	Read and Write to smart monitor
HORIZONTAL TIMING	
Horizontal Range	1K ~ 400K Hz
Total Pixels	128 ~ 8192 pixels
Resolution	1 pixels
Sync Width	16 ~ 8191 pixels
Resolution	1 pixel
Position	Leading edge in blanking period
VERTICAL TIMING	
Vertical Range	1Hz ~10K Hz
Total Pixels	6 ~ 4096 lines (non-interlace) 6 ~ 2047 lines (interlace)
Resolution	1 line
Sync Width	1~ 4095 lines (non-interlace) 1~ 2046 lines (interlace)
Resolution	1 line
Position	Leading edge in blanking period
ANALOG OUTPUT	
Color	256 colors (1- pixel resolution)
Video	R G B (75 ohms loading)
Level	0 ~ 1.0 V programmable
Resolution	1 mV
Accuracy	± 2 mV
Sync on Green	On / Off programmable
Level	0 ~ 0.5 V programmable
Resolution	1 mV
Accuracy	± 5 mV
White Level	
Level	0 ~ 1.2 V programmable
Resolution	1 mV
Accuracy	± 2 mV
Black Level	7.5/ 0 IRE
Rise/Fall time	< 1.1 nS (typical)
Video & Sync Phase Shift	(1pixel+8nS)
Separate Sync	Hs , Vs , Xs (Xs can be Hs , Vs , composite Sync)

Composite Sync

H+V, H Exclusive OR V, RS-343A
Waveform with Equalization & Serration

Data Storage Device

Flash Memory (Read only)	100 timings +100 patterns
NVRAM (R / W)	300 timings +100 patterns +100 programs
Memory Card (R / W)	Unlimited data storage
Disk on PC (R / W)	Unlimited data storage

User interface

LCD, Keypad, Remote (optional), 16 control bits, RS232C

AC INPUT

90 ~ 132 V / 180 ~ 250 V, 47-63Hz auto range

Temperature

Operation +5 ~ +40 deg .C
Storage -20 ~ +60 deg . C

HUMIDITY

20 ~ 90%

DIMENSION (W x H x D)

2237	2337
430 x 133 x 380 mm	318 x 100 x 320 mm
16.9 x 5.2 x 15 inch	12.5 x 3.9 x 12.6 inch

WEIGHT

2237	2337
8.2Kg / 18.07 lbs	4.4Kg / 9.7 lbs

All specifications are subject to change without notice.

Developed and Manufactured by:

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Distributed by:

Worldwide Distribution and Service Network
2237/2337E-2001-10-2000