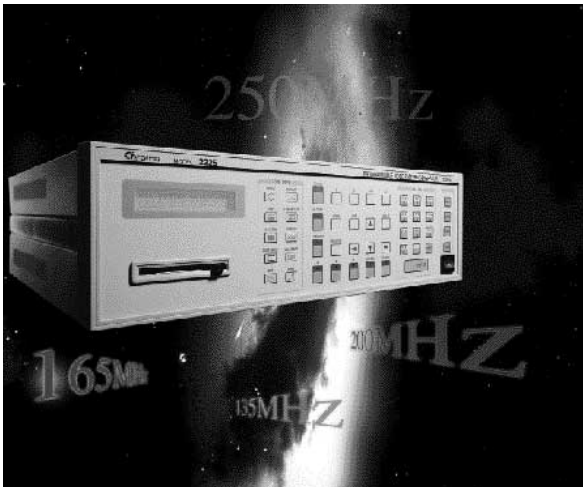




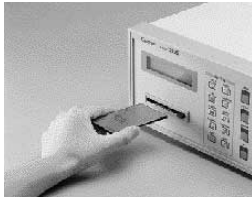
Advanced Test Equipment Rentals

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Large Space for User Data Storage

- The instrument is equipped with:
 - Factory installed 100 timing/ 100 pattern formats in Flash Memory.
 - User programmable 300 timing/ 100 pattern/ 100 program formats in NVRAM.
 - Optional memory card expansion for unlimited data storage.



Minimum Hook Up Fixture to Monitors

- MDA, CGA, EGA, VGA with the same connector.
- Xsync to select H, V, H+V sync type for testing multi-signal monitors without re-connecting sync signal.

Universal AC Input & ESD Protection

- 90-132/180-250Vac, 47-63Hz auto range input selection for universal application.
- ESD protection circuit to protect the instrument from damage caused by arcing and other external surges.

PROGRAMMABLE VIDEO PATTERN GENERATOR

Specifications

PIXEL RATE

Model	2213	2216	2220	2225
Range	3.126-135MHz	3.126-165MHz	3.126-200MHz	3.126-250MHz
Resolution	1KHz			
Accuracy	25PPM (typical), 1PPM (after calibration)			

GRAPHIC DISPLAY 2048 x 2048
4096 x 2048 (optional)

SCAN MODE Non-interface / Interface Video & Sync

HORIZONTAL TIMING
Total Pixels: 128 - 8192 pixels
Resolution: 1 pixel
Sync Width: 16 - 8191 pixels
Resolution: 1 pixel
Sync Position: Leading edge in blanking period

VERTICAL TIMING
Total Pixels: 6 - 4096 lines (non-interface)
6 - 2047 lines (interface)
Resolution: 1 line
Sync Width: 1 - 4095 lines (non-interface)
1 - 2046 lines (interface)
Resolution: 1 line
Sync Position: Leading edge in blanking period

ANALOG OUTPUT
Color: 256 colors (1-pixel resolution)
R, G, B (75 ohms loading)
Level: 0 - 1.0V programmable
Resolution: 0.37 mV
Sync on Green: On/Off Programmable
Level: 0 - 0.5V programmable
Resolution: 0.156 mV
White Level
Level: 0 - 1.2V programmable
Resolution: 0.66 mV
Black Level: 7.50 IRE programmable
Rise/fall time: 1.6nS (typical), 2.0nS (maximum)
Video & Sync Phase Shift: 0nS - 8nS
Separate sync: Hs, Vs, Xs (Xs can be Hs, Vs, Composite Sync) (TTL Level)

TTL Output
Pixel Rate Range: 3.126 - 80.000 MHz
Video: RGBbr, RGBI, MONO
Color: 64 colors
Rise/fall time: 3.0nS (typical), 5.0nS (maximum)
Video & Sync Phase Shift: ±4nS
Sync: Hs, Vs, Xs (Xs can be Hs, Vs, composite sync)

COMPOSITE SYNC
Programmable Mode: H+V, H Exclusive OR V, RS343A Waveform with Equalization & Serration Pulse

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 Keypad (optional), 16 output bits, RS232C

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

TEMPERATURE
Operation: +5 - +40 deg. C
Storage: -20 - +60 deg. C

HUMIDITY 20 - 90 %

DIMENSION (W X H X D) 430 x 133 X 380mm
16.9 X 5.2 X 15inch

WEIGHT 8.2 Kg / 18.04 lbs

Safety & EMC CE

Ordering Information

- 2213: Video Pattern Generator 135MHz
- 2216: Video Pattern Generator 165MHz
- 2220: Video Pattern Generator 200MHz
- 2225: Video Pattern Generator 250MHz
- A225002: Memory Card (16bits/512KB in JEIDA standard)
- A225003: Remote Keypad



A225002



A225003

All specifications are subject to change without notice.

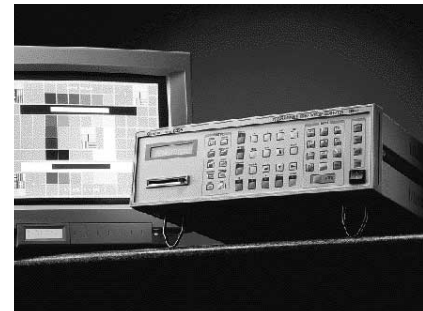
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PROGRAMMABLE VIDEO PATTERN GENERATORS

The Chroma 2225 series are fully programmable, microprocessor-based instrument for testing high resolution CRT display monitors, projectors, and video printers. Designed with precision phase lock loop (PLL) frequency synthesizer circuit (25PPM accuracy), it is capable of generating sophisticated video graphic display with 256 colors selection on every pixel. All horizontal and vertical timing parameters are fully programmable in one-pixel resolution. Manufacturers of monitors, projectors, and video printers can use the video pattern generators for design characterization, engineering, incoming inspection, production testing, and product demonstration.

The instrument has built-in software to let the user recall and edit test application of different video frequencies, video levels, timing parameters, patterns, and colors. It offers factory-installed selections of universal timing, pattern, and icon formats. Monitor testing, such as display size, pin-cushion, linearity, focus, geometry, resolution, contrast, color, convergence, high voltage regulation, etc. can be performed with minimum setup. Additionally,

the instrument has built-in user programmable NVRAM device and optional memory card to let the user store his customized timings, patterns, icons for instant recall.

In test application, the user can program and display various timing/pattern combinations on the monitor in an automatic sequencing mode or in a manual control mode. The screen drawing, including blinking function and motion picture, makes you operate more easily and friendly. It also has the power-saving mode test capability for testing your monitor's compliance with the standard of display power management. The instrument can be operated using the front panel keypad or from the remote controller via RS232C.

All the features and benefits applied to the Chroma 2225 series allow you to fully characterize the monitor's high-frequency performance and high-quality image. In view of the modern extremely demanding CRT monitor industry where every pixel of monitor is critical, the Chroma 2225 series must be your key to success.



Programmable Video Pattern Generator

MODEL 2213(135MHz)
2216(165MHz)
2220(200MHz)
2225(250MHz)

Key Features:

- Video pixel rate up to 250 MHz
- Precision signal output at 1 pixel resolution.
- Large graphic display size up to 4096 x 2048
- All timing parameters are fully programmable in one-pixel resolution
- Satisfactory color display performance up to 256 colors
- Natural picture for checking total balance of color
- Factory-installed standard pattern and timing library
- Screen drawing includes blinking function and motion picture
- Analog RGB and Digital TTL video outputs
- Power saving mode test capability
- Optional memory card expansion for unlimited data storage
- RS-232C interface
- ESD protection circuit
- 16-bit TTL output ports for external control
- CE marking





Advanced Test Equipment Rentals

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Solutions for Testing High Resolution Monitors

Precise, Easy Operation, FA Interface...

One-Pixel Video Performance

The instrument offers video output with pixel rate up to 250 MHz, horizontal scan up to 250 KHz, and vertical scan rate up to 1KHz for high resolution monitor application. All horizontal and vertical timing parameters are fully programmable in one-pixel resolution.

Excellent Graphic Display

The user has instant access to generate the most sophisticated color graphic display with 256 colors selection on very pixel of a 4096x2048 display monitor. Also, the user can use memory card to show natural picture for checking total balance of color.

Easy to Set Up Timing & Pattern Formats

The instrument uses simple question and answer query to guide the user in setting up all timing and pattern parameters. Preformatted and fully programmable ICON patterns, such as Circle, Line, Cross Hatch, Rectangle, Dot, Marker, Character, String, ColorBar, Gray Scale, make it very easy for the user to create any test patterns. Also, real-time error message is displayed to help identify invalid formats.



Versatile Operation

The instrument is very easy to operate by nature of the powerful built-in software utility. All video timing, pattern, and control functions can be set by the instrument front panel keypad, or from the remote controller via RS232C interface.

Over Range Pixel Rate Simulation

The instrument automatically scales down the pixel rate and maintain the same H/V frequencies when an over range pixel rate is entered. This unique function allows the instrument to operate with any display monitor up to 480MHz pixel frequency.

Flexible Output Control

Programmable test loop allows the user to switch timing/pattern combination output to the monitor in an automatic sequencing mode or in a manual control mode using one key operation.

Also, the user has instant on/off control of individual R, G, B or Reverse pattern using front panel one key operation.

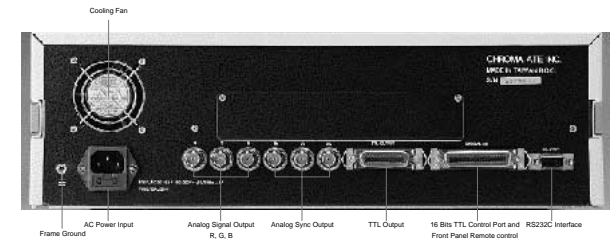
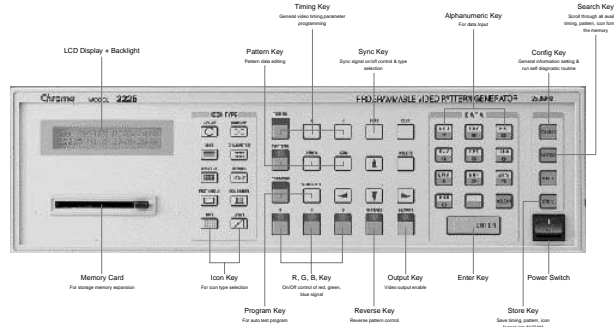
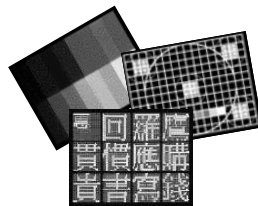
Additionally, the instrument has 16-bit user programmable TTL output ports to control any external device.



Comprehensive Pattern & Timing Library

Standard test patterns such as SMPTE, High-Voltage Regulation, X-Hatch, Color Delay, 256-color pattern, Interface Check, Dynamic Motion Pattern, etc., are built-in a pattern library. These patterns are easily called and displayed on the monitor screen for test or demo purpose.

Over 50 commonly recognized timing formats, including MDA, PGA, VGA, VGA-8514, etc., are factory installed in the instrument memory. The user can instantly recall any of the standard timing formats most suitable for his monitor test application.



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