

VIDEO WAVEFORM MONITOR

Precise Video Signal Level Measurements with Cursor Provides Full Component Monitoring Capability

CE
Upon request



PAT. PEND.
The cabinet is sold separately.

5222 WAVEFORM MONITOR

GENERAL

The Model 5222 is a precision Waveform Monitor designed to monitor video signals. The 5222 with its bright CRT adds such extra features to conventional waveform monitors as a line selector, picture monitor mode, X-Y display mode for stereo audio signals, and menu screen for setting functions.

These instruments have eight video inputs and one external reference input channel. Up to four waveforms, component or composite signals, and the external reference can be displayed side-by-side to reduce system size.

FEATURES

- **Precise measurements with cursor**
The cursor permits signal level measurements with 0.5% accuracy.
- **Full line selector**
Since one or two lines of a video signal can be displayed, you can conveniently observe VITS, VIR, or teletext signals. The function also helps to test video camera characteristics.
- **Picture display function**
These instruments can display video signals as a TV picture even without a picture monitor. In the line selector mode, the selected line is highlighted for identification on the picture.

- **Eight video inputs and one external reference input channel**

These instruments have eight video inputs and one external reference input channel. Up to four waveforms, including the external reference, can be displayed simultaneously.

The parade (side-by-side) or ALT (overlaid) display is selectable.

The component signal can be displayed in the bowtie configuration. (Bowtie signal: U.S. PATENT 4,829,366 is used with permission of Tektronix, Inc.)

- **Menu function**

For user-friendly front panel control, a menu controller is provided for various functions.

- **Dual filter**

Both FLAT and LUM (low-pass filter) filtered characteristics can be displayed simultaneously.

- **Preset function**

The front panel settings, including vertical and horizontal positioning, can be stored in memory, and recalled from the front panel or via the remote control connector on the rear panel. You can reduce setup time by presetting frequently used measuring conditions.

- **Clamp position setting**

The clamp point can be set at any position, with the position being highlighted on the waveform.

- **RGB/YRGB display function**

- **Y/C input connectors**

- **Bright CRT, accelerating potential of 16.5 kV**

- **Universal AC power supply, 90 to 250 V**

SPECIFICATIONS

5222

CRT

Type: 150 mm rectangular (P4)
Accelerating Potential: 16.5 kV
Effective Display Area: 100 (H) x 80 (V) mm
Graticule: Illuminated internal graticule

Input

	625 line	525 line
Input Channel:	CH A: 1, 2, 3, 4 CH B: 1, 2, 3, 4	CH1, 2, 3
Input Impedance:	≥15 kΩ, 75 Ω loop-through	
Maximum Input Voltage:	±2 V (DC+peak AC)	
Return Loss:	≥40 dB, 50 kHz to 6 MHz	
Isolation between Channels:	≥60 dB, (Fsc)	
Gain Difference		
Between Channels:	≤0.5 % CH1 to CH4	
Loop Through Isolation:	≥70 dB (Fsc)	

Measurement Signal

NTSC/PAL/SECAM video signal (525/60, 625/50)

Vertical Axis

Deflection Factor: ±1 %: 1 Vp-p full scale (140 IRE ref)
±3 %: x5
±0.5 %: Cursor measurement
Variable Range: 0.5 Vp-p to 1.45 Vp-p: x1 full scale
0.1 Vp-p to 0.29 Vp-p: x5

Filter

FLAT: Within ±2 % (25 Hz to 6 MHz)
Within+2 to -5 % (6 MHz to 8 MHz)
(50 kHz ref.)

LUM

Attenuation: ≥35 dB (Fsc)

CHROMA

	625 line	525 line
Band-Pass Filter:		
Bandwidth:	Fac ±2.4 MHz	Fac ±2.2 MHz
Bandwidth error:	2.4 MHz ±200 kHz	2.2 MHz ±200 kHz
Amplitude error:	≤1 % (Fsc)	
DIF'D STEP:	400 kHz band-pass filter	
Gain:	x5 ±10 % (FLAT ref.)	
Attenuation:	≥20 dB (14 kHz, 2 MHz) 400 kHz ref.	
Attenuation:	≥40 dB (Fsc) 400 kHz ref.	
Step Response:	For 1 V full scale, FLAT, 2T pulse, 2T bar	
Overshoot:	±2 % or less	
Preshoot:	±1 % or less	
Ringing:	±2 % or less	
Pulse/Bar Ratio:	Within ±1 % (0.99: 1 to 1.01: 1)	
Vertical Tilt:	Within 1 %	
DG:	≤1 %	

DC Restoration

Frequency Response

Slow Mode: ≤20 % (absolute attenuation value for 60 Hz input)

Fast Mode: ≥80 % (absolute attenuation value for 60 Hz input)

Clamp Point: Back porch

Variable Range: 5 to 7 μs or more (with respect to sync pulse leading edge)

Blanking Level Shift: ≤1 % (With 10 to 90 % APL or color burst on/off)

Video Output

Frequency Response: Within ±3 % (25 Hz to 6 MHz)
Input /Output Gain Ratio: 1.1 ±3 % (75 Ω term.)
Return Loss: ≥30 dB (50 kHz to 6 MHz)
DG, DP: ≤1 %, ≤1 °

Horizontal Axis

Time Accuracy: Within ±3 % (1 μs/div)
Within ±3 % (0.2 μs/div)

Sweep Length: 12.5 div ±0.7 div

Linearity: Within ±3 %

Position Control Range: Anywhere in the screen

RGB/YRGB

Selectable: Factory setting: RGB
Staircase Input: 10 V ±15 %, 9 divisions display
Maximum Input Voltage: ±12 V (DC+peak AC)

CAL

Amplitude: 1 V ±0.5 %

EXT REF

Input Impedance: ≥15 kΩ, 75 Ω loop-through
Return Loss: ≥40 dB (50 kHz to 6 MHz)
Maximum Input Voltage: ±12 V (DC+peak AC)

Synchronization

Sync Amplitude: 5222: CH1A, 4A, 1B, 4B

	625 line	525 line
INT:	0.3 Vp-p ±6 dB	0.286 Vp-p ±6 dB
EXT:	0.3 Vp-p ±6 dB	0.286 Vp-p ±6 dB

143 mV to 4 V composite sync amplitude
Remote Sync Sensitivity: 2.0 to 5.0 V square wave or 4.0 V composite sync (activates at sync leading edge)

Line Selector

	625 line	525 line
Field 1, 3:	Line 1 to 313	Line 1 to 263
Field 2, 4:	Line 314 to 625	Line 1 to 262
ALL :	Line 1 to 312	Line 1 to 262

Preset Function

Controllable Functions: Up to 10 panel settings, Recallable
All front panel controls (except REMOTE, INTEN, ROTATION, FOCUS, GAIN VAR, POWER)

Remote Control

Combinations: 5222→5212 (NTSC/PAL/SECAM)
Controllable Functions: All front panel controls (except INTEN, ROTATION, FOCUS, GAIN VAR, POWER)
Control Input: Rear panel
D-sub, 15-pin (REMOTE A)
D-sub, 9-pin (REMOTE B)

Cursors

Configuration: Horizontal cursors (REF, Δ)
Vertical cursors (REF, Δ)

Amplitude Measurement: Voltage between the REF and Δ cursors
Unit: V, IRE, %

	625 line	525 line
Measurement Range:	0 to 2000.0 mV 0 to 286.0 %	0 to 2000.0 mV 0 to 280.0 IRE

Calibration Accuracy: 0.5 %, vertical
Resolution: 0.5 mV, 0.1 IRE, or 0.1 %

Time Measurement
Measurement Range: Time between the REF and Δ cursors
±6 div or more from center
Calibration Accuracy: ±3 %
Resolution: 1/80 div

Frequency Measurement: Frequency between the REF and Δ cursors those apart 1 cycle

Environmental Conditions

Operating: Temperature: 0 to 40 °C
Humidity: ≤ 90 % RH (without condensation)

Power Requirements

90 to 250 VAC, 48 to 440 Hz

Power Consumption: 40 Wmax.

Dimensions and Weight

215 (W)x132 (H)x429 (D) mm, 4.2 kg

Accessories

Illumination lamp	5
Screw, rack mounting (inch size).....	2
15-pin D-sub connector	1
Metal case, 15-pin D-sub connector..	1
Power cord	1
Cover, inlet stopper	1
Screw lock.....	2
E-ring	1
Instruction manual	1

Optional Accessories

LR 2427B (Cabinet, with handle)
LR 2404A (Cabinet, without handle)
LR 2700A-I (Rack-Mount Adapter, inch size)

5222 REAR PANEL

