WAVEFORM MONITOR

5222

LEADER

NTSC

PAL

SECAM

CE
Upon request

PAT. PEND.
The cabinet is sold separately.

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

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. These instruments can also be remotely controlled when combined with the 5212 Vectorscope.

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**

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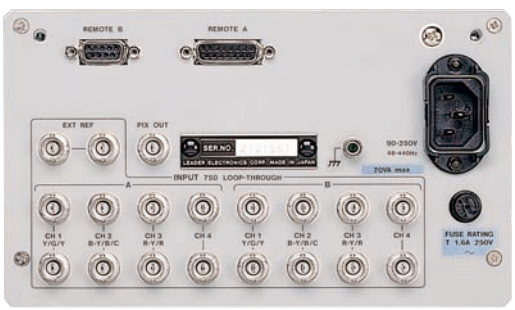
5222 SPECIFICATIONS

LEADER

CRT		
Type	150 mm rectangular (P4)	
Accelerating Potential	16.5 kV	
Effective Display Area	100 (H)×80 (V) mm	
Graticule	Illuminated internal graticule	
Input	**(625)**	**(525)**
Input Channel	CHA: 1, 2, 3, 4 CHB: 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 (625/50)	
Vertical Axis		
Deflection Factor	±1%: 1 Vp-p full scale (140 IRE ref) ±3%: ×5 ±0.5%: Cursor measurement	
Variable Range	0.5 Vp-p to 1.45 Vp-p: ×1 full scale 0.1 Vp-p to 0.29 Vp-p: ×5	
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		
Band-Pass Filter	**(625)**	**(525)**
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	×5 ±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)	**(525)**
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
Remote Sync Sensitivity	143 mV to 4 V composite sync amplitude 2.0 to 5.0 V square wave or 4.0 V composite sync (activates at sync leading edge)	
Line Selector	**(625)**	**(525)**
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	Up to 10 panel settings, Recallable	
Controllable Functions	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, %	
Measurement Range	**(625)**	**(525)**
	0 to 2000.0 mV	0 to 2000.0 mV
	0 to 286.0%	0 to 280.0 IRE
Calibration Accuracy	0.5%, vertical	
Resolution	0.5 mV, 0.1 IRE, or 0.1%	
Time Measurement	Time between the REF and Δ cursors	
Measurement Range	±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)	
Spec-Guaranteed	Temperature: 10 to 35°C Humidity: ≤ 80% RH (without condensation)	
Power Requirements	90 to 250 VAC, 48 to 440 Hz	
Power Consumption	50 Wmax.	
Dimensions and Weight	215 (W)×132 (H)×429 (D) mm, 4.2 kg 8 1/2 (W)×5 1/4 (H)×16 3/4 (D) in., 9.3 lbs	
Supplied 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



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