

# WAVEFORM MONITOR

## 5861V(PAL) 5860V(NTSC)

### LEADER



**CE**  
Upon request  
(5861V only)



## Measurements of Composite Video Signal Amplitude, Timing, and Frequency Response

The 5861V and 5860V Waveform Monitors are oscilloscopes that are capable of quick monitoring amplitude, time and frequency response, etc. of composite TV signals, which are hard for ordinary oscilloscopes to measure. The waveform monitor is equipped with various modes and trigger functions that are optimum to video signal monitoring. Such various modes as 2H, 1H, 1  $\mu$ s/div, 2V, 1V, and 2V MAG can be selected by the horizontal axis sweep. As FLAT, LUM (5861V), IRE (5860V), CHROMA, DIF GAIN and DIF'D STEP can be switched, it is possible to observe various characteristics of video signals. Furthermore, the line selector function is provided for observing VITS and VIR signals which are inserted during the vertical blanking period. In addition, the blanking output connector for blanking other periods that lines selected by the line selector, video output connector and other functions necessary for video signal monitoring are provided.

### ■5860V FRONT PANEL



### FEATURES

- Depending on synchronization system and subcarrier frequency, the 5860V is compatible with the M system, and 5861V is compatible with the B, C, D, G, H, I, and K systems.
- Differentiated-step methods are used to display the differential of staircase signals to make measuring the linearity of transmission system luminance components easier.
- Built-in line selector function for monitoring VITS and VIR signals, a blanking output and a video output.
- Horizontal sweep mode selection from 2H, 1H, 1  $\mu$ s/div, 2V, 1V, and 2V MAG. The frequency response of the vertical axis is switchable among FLAT, LUM (5861V), IRE (5860V), CHROMA, DIF GAIN, and DIF'D STEP.
- K factor scale provided for checking of frequency characteristics.

### ■5861V REAR PANEL

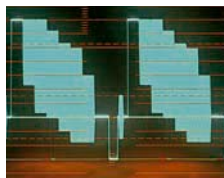


Model	5861V	5860V
<b>CRT Type</b>	150 mm rectangular, internal graticule with scale illumination	
<b>Accelerating Potential</b>	12 kV	
<b>Effective Display Area</b>	80 (V) × 100 (H) mm	
<b>Beam Rotator</b>	Adjustable from the front panel	
<b>Input Section</b>	A and B on the rear panel (loop-through, BNC connector)	
<b>Input Connector</b>	A and B on the rear panel (loop-through, BNC connector)	
<b>Input Impedance</b>	1 Vp-p full scale range: 15 kΩ, 50 pF 4 Vp-p full scale range: 60 kΩ, 50 pF	
<b>Maximum Input</b>	±5 V (DC+peak AC), AC coupled	
<b>Full Scale Graticule</b>		
<b>Full Scale</b>	1.0 scale	140 IRE
<b>SYNC</b>	0.3 scale	40 IRE
<b>VIDEO</b>	0.7 scale	100 IRE
<b>Deflection Accuracy</b>		
<b>1 V Full-scale Range</b>	Within ±2% of 1.0 scale at 1 V input	Within ±2% of 140 IRE at 1 V input
<b>4 V Full-scale Range</b>	Within ±4% of 1.0 scale at 4 V input	Within ±4% of 140 IRE at 4 V input
<b>Frequency Characteristics</b>		
<b>FLAT</b>	25 Hz to 3.6 MHz ±2%, 3.6 MHz to 5 MHz+2%, -5% at 50 kHz reference	
<b>LUM</b>	More than 35 dB of attenuation at 4.43 Mz	—
<b>IRE</b>	—	Conforms to IRE STD23S-1 (1958); more than 22 dB of attenuation at 4.43 MHz
<b>CHROMA</b>	4.43 MHz bandpass filter	3.58 MHz bandpass filter
<b>DIF GAIN</b>	4.43 MHz bandpass filter	3.58 MHz bandpass filter
<b>DIF'D STEP</b>	3 to 5.5 times of CHROMA amplitude For measuring the linearity of luminance 450 kHz bandpass filter Response at filter "FLAT" 400 kHz: Within ±2% 500 kHz: Within +0, -20% 14 kHz, 2 MHz: Within -90% 3.58 MHz (5861V), 4.43 MHz (5860V): -99%	
<b>Transient Response</b>	±1.5% or less in overshoot, preshoot, and ringing using the sin <sup>2</sup> pulse & bar signal at FLAT with 1 V full scale range.	±2 IRE or less in overshoot, preshoot, and ringing using the sin <sup>2</sup> pulse & bar signal at FLAT with 1 V full scale range.
<b>Sag (Vertical window signal) Variable Range</b>	2% or less Input voltage of 1.0 full scale	Input voltage of 140 IRE full scale
<b>1 V Full-scale Range</b>	0.25 V or less to 1 V	
<b>4 V Full-scale Range</b>	1 V or less to 4 V	
<b>DC Regeneration</b>	Clamped at the back porch	

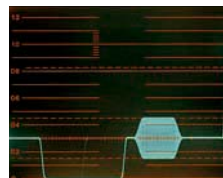
Model	5861V	5860V
<b>Video Output</b>		
<b>Output Connector</b>	BNC connector on the rear panel	
<b>Output Voltage</b>	1 V ±15% at full scale input	
<b>Output Impedance</b>	75 Ω ±10%	
<b>Frequency Characteristics</b>	25 Hz to 5 MHz ±5%	
<b>Sweep</b>		
<b>1H Sweep</b>	Display of 1H waveform	
<b>2H Sweep</b>	Display of 2H waveform	
<b>1 μs/div</b>	10 times magnification of 2H sweep, 1 μs/div ±3%	
<b>1V Sweep</b>	Display of 1 V waveform	
<b>2V Sweep</b>	Display of 2 V waveform	
<b>2V MAG Sweep</b>	Approx. 20 times magnification of 2V sweep	
<b>Linearity</b>	±3%	
<b>RGB/YRGB Display</b>	RGB is standard. (YRGB is optional.)	
<b>Staircase</b>	10 V ±15%/9 div	
<b>Maximum Input Voltage</b>	±12 V (DC+peak AC)	
<b>Sweep</b>	1H display at 2H sweep 1V display at 2V sweep	
<b>Sweep Line Length</b>	RGB: 30% × 3 or composite display YRGB: 22% × 4 of composite display	
<b>Composite to YRGB</b>	Remote control from external or internal control signal	
<b>Control Signal</b>	12 to 15 V (negative or positive), 15 mA	
<b>Control Signal</b>	9-pin MT socket on the rear panel	
<b>RGB and YRGB Input</b>	9-pin D-sub connector (option)	
<b>External Synchronization</b>		
<b>Input Connector</b>	2 terminals, BNC, loop-through type on the rear panel	
<b>Input Impedance</b>	15 kΩ	
<b>Input Sensitivity</b>	0.143 to 5 Vp-p (Level of sync signal in composite video signal)	
<b>Maximum Input Voltage</b>	±8 Vp-p	
<b>Line Selector</b>		
<b>Display Line</b>	13 to 22 and 325 to 334 lines	14 to 21 lines of first and second fields
<b>Blanking Output</b>		
<b>Output Connector</b>	BNC connector on the rear panel	
<b>Voltage Level</b>	0 V: selected by line selector -2 V: for other duration	
<b>Calibrator</b>		
<b>Waveform</b>	Square waveform	
<b>Amplitude</b>	1 Vp-p ±1%	
<b>Frequency</b>	32 kHz	
<b>Environmental Conditions</b>		
<b>Operating</b>	Temperature: 0 to 40°C	
<b>Power Requirements</b>	100, 120, 200, 240 VAC, 50/60 Hz, 50 Wmax.	
<b>Dimensions and Weight</b>	215 (W) × 132 (H) × 429 (D) mm, 7.4 kg 8 1/2 (W) × 5 1/4 (H) × 16 3/4 (D) in., 16.3 lbs	
<b>Accessories</b>	Scale illumination lamp .....5 9-pin MT plug .....1 Cover/Inlet stopper .....1 Screw, rack mounting(inch size) .....2 Power cord .....1 Instruction manual .....1	

## ■5861V WAVEFORMS DISPLAY

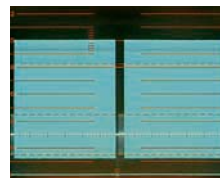
### •Sweep Range



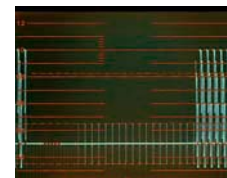
2H



1 μs/div

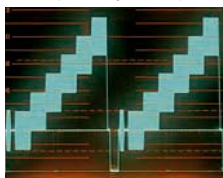


2V

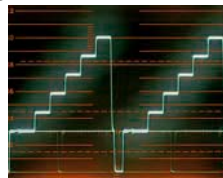


2V MAG

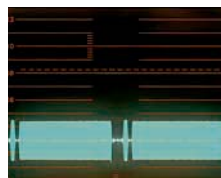
### •Frequency Response Range



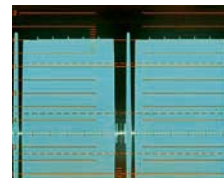
FLAT



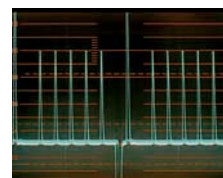
LUM



CHROMA



DIF GAIN



DIF'D STEP