ShibaSoku®

VN32A6

TELEVISION INSTRUMENTS

HDTV VIDEO NOISE METER

General

The VN32A6 video noise meter is designed for measuring the noise contained in luminance signal, color difference signal, GBR component signals of high-definition television (HDTV) equipments, including television cameras, television broadcasting equipments, VCRs and others.

Features

- WINDOW mode that allows you to set the measuring range freely. In addition to full field measuring mode (in which fixed range measurement is performed), WINDOW mode, with which the particular measuring area setting is possible, is also available.
  In the WINDOW mode, independent measurement of ODD field and EVEN field is possible.
  Size and position of the measuring area can be confirmed easily by simply connecting the color monitor.
- Judge function, convenient feature for production line and QC. This function performs GO/NG evaluation of noise level based on the preset threshold level, and shows the result by LED.
- Automatic level control (ALC)
- Automatic sag compensation
- Remote operation by GP-IB interface

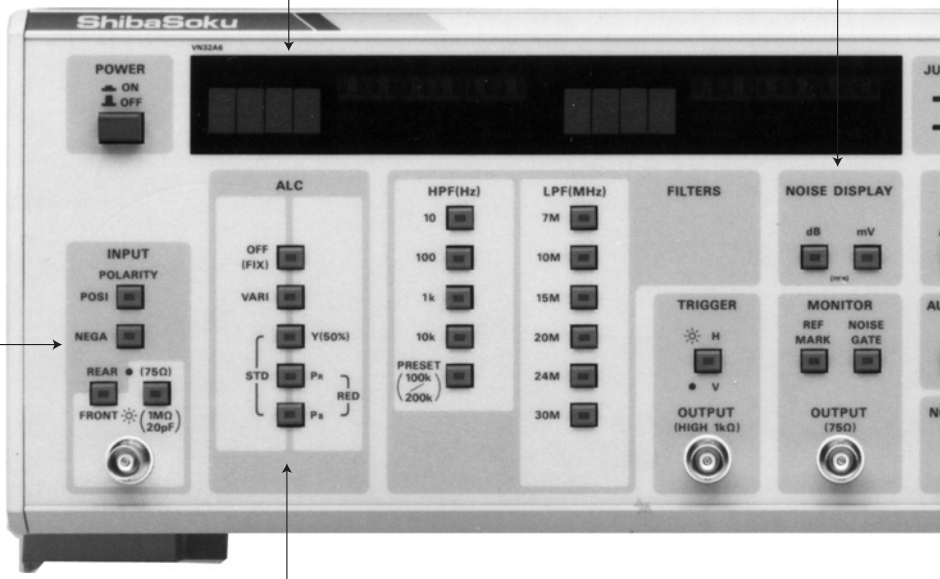
Specifications

- Measurement items
  Video luminance noise
  Color difference signal noise
  Component signal noise
- Television systems
  1125/60 HDTV
- Frequency range 10Hz to 30MHz
- Noise level measuring rage
  - 7 to - 77 dB (Vrms/Vp-p)
- Full field accuracy ±0.3dB, - 7 to - 60 dB
  ±0.6dB, - 60 to - 65 dB
  ±1.2dB, - 65 to - 70 dB
  (Under the conditions of HPF 100KHz, LPF 30MHz and full-field mode)
- Measuring filters
  - High pass filter cut-off frequency
    10, 100 Hz, 1, 100, 200 kHz
    (Selection of 100K/200KHz is preset by switch inside of the unit)
  - Low pass filter cut-off frequency
    7 MHz (for MUSE encoder output noise measurement)
    10 MHz (for chrominance signal of 1-inch VCR noise measurement)
    15 MHz (for chrominance signal noise measurement conforms to BTS)
    20 MHz (for luminance signal of 1-inch VCR noise measurement)
    24 MHz (for EPU and internal of MUSE encoder noise measurement)
    30 MHz (for luminance signal noise measurement conforms to BTS)
- Monitor outputs
  - Noise gate: Noise gate maker is superposed on the input signal
  - REF MARK: The detective point for ALC is superposed on the input signal as reference marker
  Connector type: BNC, 75 Ω, unbalanced,
  Output level: Max. 1 Vp-p
- Noise outputs: Noise component from which blanking signal has been removed is output, convenience for spectrum analysis
  Connector type: BNC, 75 Ω, unbalanced,
  Output level: Max. 0.5 Vp-p
- General specifications
  Power supply: AC 100, 120, 220, 240 ±10%, 50/60 Hz
  Power consumption: Approx. 83 VA
  Operating temperature range: 0℃ to 40℃
  Relative humidity: 25% to 90% RH (non-dewing)
  Dimensions: 426(H) x 149 (W) x 460(D)mm
  Weight: Approx. 20 kg

● JUDGE FUNCTION
This function performs GO or NG evaluation of noise level based on the user defined preset threshold level, and shows the result through lighting corresponding LED.

● NOISE DISPLAY
The measured noise level can be displayed in either dB or mV (both rms)

● INPUT VIDEO LEVEL
When the ALC is OFF (FIX), input level of either the luminance or the chrominance is displayed. When the ALC is ON, the corresponding ALC output voltage is displayed.
Display unit: mVp-p
Minimum display: 1 mVp-p
Maximum display: 1023 mVp-p
Accuracy: −1% or −2 mVp-p



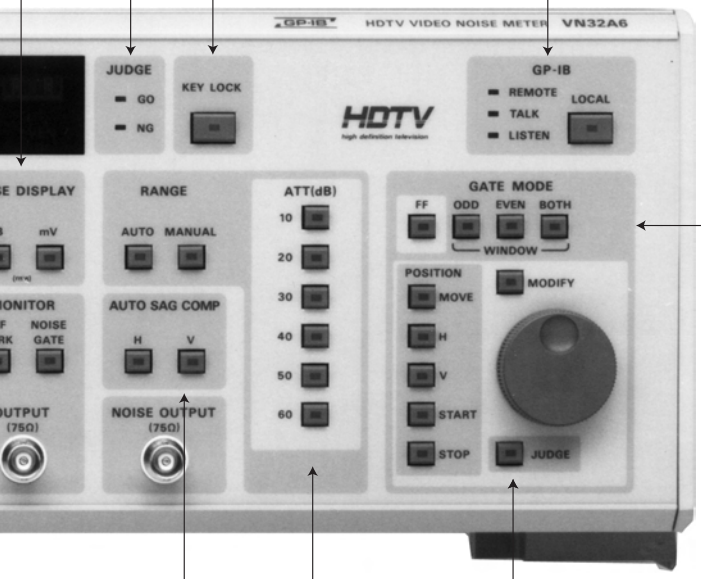
● INPUT SELECTOR
Polarity : Positive/Negative
Terminal : Front panel/Rear panel
Impedance: 75 Ω/1 MΩ, 20 pF

● AUTOMATIC LEVEL CONTROL (ALC)
FIX : ALC OFF
VARI : 10% to 140% ALC, rotary dial setting
Y (50%) : 50% ALC, use for 50% gray level
RED ALC (P_R): User for P_R of the red color bar signal
RED ALC (P_B): User for P_B of the red color bar signal

● AUTOMATIC SAG COMPENSATION
Amplitude direction:
Compensation is possible in case sag amplitude of the input video signal is within 200 mVp-p
Time axis direction:
In the WINDOW gate mode, both horizontal and vertical gate width compensations are possible for the gate width of 1/5 of the time axis, sag compensation is turned off.
Sag improvement:
Both horizontal and vertical window gate widths are equal to those of the effective picture.
.....Approx. 1/100
Both horizontal and vertical window gate widths are 1/5 of the effective picture.
.....Approx. 1/20
*Improved amount may differ depending on the window size.

●KEY LOCK FUNCTION
The KEY LOCK function prevents inadvertent parameter alternation during measurements. However, the following functions will not be locked for convenience:
POWER SWITCH
TRIGGER
MONITORs

●GB-IB
The REMOTE LED is lit when the GP-IB is connected and operating. The LISTEN and TALK LEDs correspond to the external control. The LOCAL key enables the local functions on the front panel. Local lock-out can be set via the external control disabling all front panel keys except POWER switch.



●GATE MODE
・FULL-FIELD GATE (FF)
Measuring gate width
Horizontal: 1/2 H in total (1/4 in front and 1/4 behind from the center of the horizontal effective period)
Vertical : Vertical effective period width from which the vertical blanking period plus 10 H in front and behind of blanking period is removed.
・WINDOW GATE (one of following modes are selectable)
ODD field gate: Only odd fields are measured
EVEN field gate: Only even fields are measured
BOTH field gate: Both odd and even fields are measured
(window position and size of the odd and even fields are relatively identical to each other)
Window gate width
Horizontal: Time width is obtained by removing both ends of approx. 0.5 μs from the minimum 4 μs to effective picture frame.
Vertical : Minimum 1 H to vertical effective picture frame.
Window gate position movement
Horizontal: In the period from which both ends of the effective picture frame are removed by approx. 0.5 μs can be moved in 0.23 μs increments.

●NOISE MEASUERMENT AREA SETTING (MODIFY)
In order to create user-defined measurement window, first to press MODIFY key then press H (Horizontal) or V (Vertical) key. When window construction is completed, MODIFY key should be pressed to terminate the job. The window is displayed in white color on the screen of the monitor.
The START key enables to adjust the left-side or top limit of the window. The STOP key enables to adjust the right-side or bottom limit of the window depending on H and V selection.
The MOVE key enables to shift the position of user-defined window.

●MEASURING RANGES
AUTO range:
Measuring range is automatically switched in 10 dB increments.
MANUAL range:
Measuring range is switched by manually in 10 dB increments.
OVER range:
In the AUTO range, when a noise of - 7 dB or higher is input, in manual range, when a noise of +3 dB higher than the selected range is input, HI OVER RANGE warning is displayed. In addition, when a noise of - 77 dB or less is input in AUTO range, or when a noise of - 17 dB or less than the selected range is input in MANUAL range, LO UNDER RANGE is displayed.