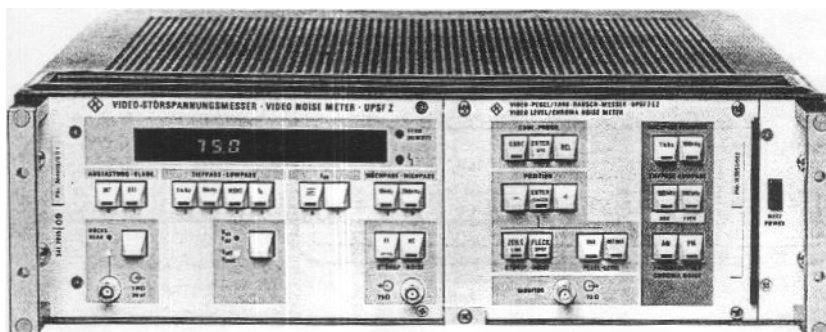


## 160 Sound and TV Broadcasting Measurements

### Video Noise Meter UPSF2

40 Hz to 10 MHz

Dual-standard instrument featuring great measurement convenience thanks to test programs



#### Uses

The Video Noise Meter UPSF2 measures noise voltages occurring in transmission systems either in the unweighted mode from 40 Hz to 10 MHz or in the weighted mode with the appropriate filters incorporated. The Video Level/Chroma Noise Meter UPSF2E2 affords further measuring possibilities. The relevant IEC and CCIR specifications are satisfied.

#### Main applications

- Weighted and unweighted measurement of noise voltages occurring in 625-line and 525-line systems
- Measurement on digital transmission systems (option), full-field, spot and line measurement
- Chroma noise measurement (AM and PM components)

#### Characteristics

##### Main features

- Automatic switchover to 625-line or 525-line systems (dual standard unit) using the standard-dependent filters
- Free choice of test point: full field or any test line

- Measurement of true rms and peak values
- Autoranging over 80 dB
- Alphanumeric readout of measured value and operational status
- System-compatible thanks to IEC/IEEE-bus interface (option)

#### Filters in the basic unit

- Band limiting filters  
Lowpass filters to CCIR Rec. 567, preventing measurement errors due to noise voltages above the upper video cutoff frequency. The filters with a cutoff frequency of 4.2 and 5 MHz are selected automatically
- Noise weighting filter  
Unified weighting network to CCIR Rec. 567 for noise voltage weighting in accordance with perception of the eye to noise
- 1-kHz lowpass filter  
for measuring hum voltages superimposed on a line-repetitive signal
- 200-kHz highpass filter  
to CCIR Rec. 567 for measurement without low-frequency components, always in circuit for test line and spot measurements
- 100-kHz highpass filter on request

- Wave trap for attenuating any residual colour subcarrier components by at least 26 dB. The colour subcarrier frequency is selected automatically
- 10-kHz highpass/lowpass filter to CCIR Rec. 567 for measurement below or above 10 kHz

#### Options

##### External filters

- 200-kHz highpass filter for eliminating the sawtooth component during quantizing noise measurement in digital transmission systems
- D2-MAC highpass filter (300 kHz) for sawtooth elimination
- D2-MAC lowpass filter (7.5 MHz)
- D2-MAC weighting network for measuring S/N ratio or quantizing noise (only in conjunction with highpass filter) on D2-MAC signals (synchronization of UPSF2 by TV Synchronizer SYNCER)

## Video Level/Chroma Noise Meter

The UPSF2E2 plug-in for a colour subcarrier frequency of either 4.43 or 3.58 MHz adds the following measurement capability to the basic unit:

- Chroma-noise measurement on magnetic tapes and VTRs in the range from 100 Hz to 1 MHz
- Measurement in line with the IEC standard currently being prepared for chroma-noise
- Measurement in line with IEC 883 or DIN IEC 883 for chroma-noise
- Automatic correction of differences in the colour subcarrier amplitudes; the lower and upper cutoff frequencies can be switch-selected for assessment
  - lower  $f_c$ : 100 Hz, 1, 10, 100, 200 kHz
  - upper  $f_c$ : 10, 100, 500 kHz, 1 MHz, WGHT
- Luminance measurements (referred to the measured luminance bar) with free selection of test point:
  - any line or
  - spot at any point
- Level measurement:
  - measurement of luminance bar amplitude
  - level difference measurement (sample-and-hold technique) between any two points
- Great measurement convenience thanks to (test) programs available. Examples from the code table in test program:
  - noise-voltage output in mV
  - pulse-level output in mV, % or IRE units
  - disabling luminance-bar reference
  - determination of gain range

## Specifications

### Basic unit

Frequency range	40 Hz to 10 MHz (with frequency response flat within $\pm 0.25$ dB)
Test signal	picture or composite video signal with and without test lines
Standard	625 or 525 lines (automatic switchover)
Modes of operation	full field and test line
Synchronization	internal or external
Measurement range	0 to $-80$ dB
Range switchover	automatic
Reference	0 dB corresponding to 714 mV or 700 mV (automatic switchover)
Types of rectification	true rms- or peak-responsive measurement
Readout	digital (mV, V, dB, %)
Error	$\pm 1$ dB
Inherent S/N ratio (band-limited)	$\geq 80$ dB <sub>rms</sub>
Filters used	see text
Test input	
on front panel	1 M $\Omega$    30 pF
on rear panel	75- $\Omega$ loop-through filter
Return loss	$\geq 40$ dB (up to 6 MHz)
Synchronization input	75- $\Omega$ loop-through filter (on rear panel)
Return loss	$\geq 36$ dB (up to 6 MHz)
Sync amplitude	$-4$ V $\pm 1$ V
Noise-voltage output (test signal blanked)	on front panel
Output impedance	75 $\Omega$
Return loss	$\geq 36$ dB (up to 6 MHz)
Remote control (option)	interface to IEC 625-1 (IEEE 488)

### Basic unit plus plug-in UPSF2E2

Chroma-noise measurement	AM and PM components
Colour subcarrier	4.43 or 3.58 MHz (depending on model)
Measurement range	$-25$ to $-70$ dB
TV standard	PAL and NTSC
Filters used	see text
Luminance noise voltage measurement	
Reference	current luminance bar in test line
Line measurement	measurement time 40 $\mu$ s
Line number	freely selectable
Spot measurement	4 $\mu$ s, 10 lines
Test point	freely selectable

### Level measurement

Measurement range	0 to $\pm 1500$ mV
Tolerance range	$\pm 0.5\%$ $\pm 3$ mV
Luminance bar	to CCIR Rec. 569
Video signals	test points can be selected in 1- $\mu$ s steps

### Level-difference measurement

Sampling-pulse duration	1 $\mu$ s
Sampling points	freely selectable
Monitor output	on front panel (unblanking of testpoint coordinates)

### General data

Power supply	115/125/220/235 V $\pm 10/-15\%$ , 47 to 63 Hz, 65 VA
Dimensions (W x H x D); weight	
19" bench model	492 mm x 161 mm x 514 mm; 18 kg
19" rackmount	483 mm x 132 mm x 506 mm; 14 kg

## Ordering information

### Video Noise Meter

Basic Unit (without plug-in) for 625 and 525 lines		
19" bench model	UPSF2	0341.7019.09
19" rackmount	UPSF2	0341.7019.08
Standard I (with chroma bandpass)		
19" bench model	UPSF2	0394.4720.19
19" rackmount	UPSF2	0394.4720.18

### Options

Video Level/Chroma Noise Meter		
Standard B/G, PAL	UPSF2E2	0342.0018.03
Standard M, NTSC	UPSF2E2	0342.0018.13
200-kHz Highpass Filter	UPSF2-Z	0347.5176.02
7.5-MHz D2-MAC Lowpass Filter	UPSF2-Z	0842.9003.02
D2-MAC Weighting Network	UPSF2-Z	0842.9255.02
300-kHz D2-MAC Highpass Filter	UPSF2-Z	1037.8501.02
IEC/IEEE Bus	UPSF2-Z	0341.8238.02

### Extra

TV Synchronizer (see next page)	SYNCER	0750.3000.02
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