



ROHDE & SCHWARZ

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FM Sound Modulator SBUF-E5

For TV dual-sound or
stereo measurements.

The TV Dual-Sound Coder E7
is required for operation.

AF input signal	
Signal level	+ 6 dBm for 0 to ± 80 kHz deviation, continuously adjustable
Frequency range	40 Hz to 75 kHz
Input	floating, Z_{in} approx. 5 k Ω , switchable external/internal
Connector	front panel: 3-way female rear panel: 30-way male
Internal AF generator	
Frequency, switchable to	0.04/1/5/ 15 kHz and "off"
Amplitude response	< ± 0.3 dB, ref. to 1 kHz
Harmonic distortion	< 0.3%
IF output signal	
Sound carrier frequency ³⁾	
Standard B/G	33.4 MHz (sound 2: 33.158 MHz)
D/K	32.4 MHz
I	32.9 MHz
M	34.4 MHz (CATV: 41.25 MHz)
Frequency error	< ± 500 Hz
Centre frequency stabilization	frequency and phase control; ref.: vision carrier
Output level ¹⁾ SBUF-E2	≤ 45 to ≥ 90 mV _{rms} } carrier can
SBUF-E5	≤ 20 to ≥ 40 mV _{rms} } be disabled
Nominal level for single sound	45/63/90 mV, corresponding to vision/sound power ratio 20:1/10:1/5:1
dual sound	45 mV (20:1) for sound 1, 20 mV (100:1) for sound 2
Modulation characteristics for standards B/G, D/K, I, M	
Type of modulation	F3, with preemphasis
Modulation frequency response flatness	$\leq \pm 0.3$ dB, 40 Hz to 53 kHz $\leq \pm 0.5$ dB, 53 to 75 kHz ref.: 1 kHz, preemphasis disabled
Preemphasis (switched)	50 μ s ± 5 % (M: 75 μ s)
Modulation distortion	≤ 0.5 %, 40 Hz to 15 kHz deviation ± 75 kHz (preemphasis disabled)
Stereo crosstalk	> 40 dB down, 0.1 to 5 kHz (measured with coder and decoder)
Signal-to-noise ratio	> 70 dB (mono), > 66 dB (stereo), weighted and unweighted; ref.: ± 40 kHz deviation
Incidental AM	> 40 dB down; for f_{mod} 1 kHz and deviation ± 40 kHz; ref.: 100% modulation
Modulation characteristics for standard L (differing characteristics)	
Type of modulation	A3, without preemphasis
AF input signal, level	+ 12 dBm for 0 to 100% modulation, continuously adjustable
Frequency range	30 Hz to 15 kHz
IF output signal	
Sound carrier frequency	39.2 ³⁾ MHz ± 500 Hz, crystal-controlled
Output level ⁴⁾	≤ 50 to ≥ 100 mV _{rms}
Modulation frequency response flatness	< ± 0.5 dB, 30 Hz to 15 kHz; ref.: 1 kHz
Modulation distortion	≤ 1 % (up to 90% modulation)
Signal-to-noise ratio	> 70 dB, weighted and unweighted; ref.: 100% modulation
General Data	
Nominal temperature range	+ 5 to + 35 °C
Operating temperature range	+ 5 to + 45 °C
Storage temperature range	- 20 to + 70 °C
Connectors (rear panel)	
IF summing output (BNC)	2 for modulator configuration ⁴⁾ 1 for channel transmitter configuration
Return loss	≥ 18 dB, 30 to 48 MHz
Monitoring output	for vision carrier, 50 Ω , BNC
Video input	loop-through filter, BNC; see SBUF-E1
AF/control/status lines	30-way male connector to DIN 41 622
AC supply	110/125/220/235 V + 10/- 15%, 47 to 63 Hz (70 VA for vision and sound modulators, 125 VA for fully equipped frame)
Overall dimensions (W x H x D), weight	
19" bench model (design 80) ..	492 mm x 161 mm x 514 mm, 17 kg fitted with vision and sound modulators, 21 kg fully equipped
19" rackmount	483 mm x 132 mm x 506 mm, 15 kg fitted with vision and sound modulators, 19 kg fully equipped

¹⁾ Level at rear-panel IF summing outputs.

²⁾ Measured via TV Demodulator AMF 2; ref.: black-to-white transition.

³⁾ Please enquire for different frequencies.

⁴⁾ Separate IF outputs for vision and sound carriers if separate Channel Unit SBTF 2 is used; IF summing output for Transposer Section SBUF.