

2 SWEEP ANALYZERS

With compliments

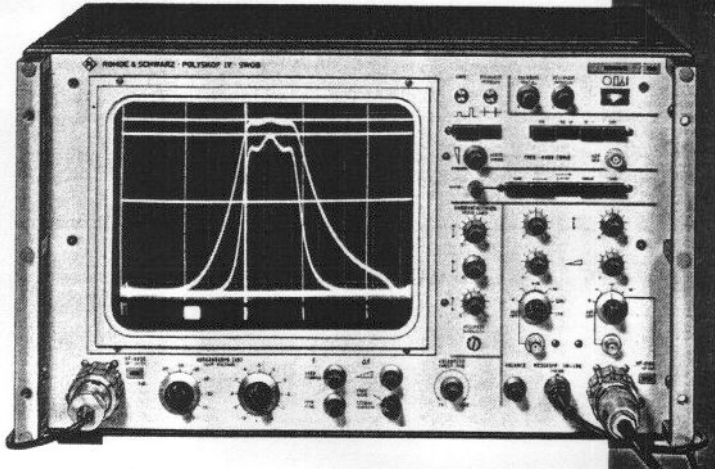
Helmut Singer Elektronik

www.helmut-singer.de info@helmut-singer.de

fon +49 241 155 315 fax +49 241 152 066

Feldchen 16-24 D-52070 Aachen Germany

SWOB



Polyskop IV SWOB

◆ 0.1 – 1000 MHz

- Fully transistorized sweep tester for dual-channel display
- Sweep width continuously adjustable from ≈ 150 kHz to full frequency range
- Precise electronic frequency and level markers
- Logarithmic deflection amplifier with 60 dB dynamic range

Characteristics and uses

Polyskop IV combines in a compact unit a sweep generator with 70-dB attenuator, display unit with logarithmic amplifier and large-size screen, frequency marker generator and adjustable level reference lines.

The Polyskop IV permits two quantities to be displayed simultaneously as functions of frequency. Many characteristics such as gain, attenuation or linearity can thereby be measured.

The technical concept of this latest instrument of the Polyskop family is based on long years of experience in this field. Like the time-proven Polyskop III, SWOB IV is also ideal for use in laboratories, test and production departments, especially where ease of operation is required together with large-scale and broadband display for long series of measurements.

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Description

Frequency range, sweep width. The Polyskop IV frequency range, 100 kHz to 1000 MHz, can be swept in one band with maximum sweep width setting. Wide or narrow sweep can be switch-selected. In the NARROW position the maximum width is about 30 MHz, minimum < 150 kHz.

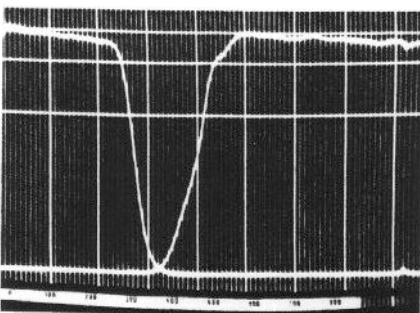
The frequency axis is linear in time and the sweep can be adjusted continuously from 20 ms to 2 s. In the SINGLE mode the sweep time is automatically extended to 30 s when a recorder is connected.

Frequency markers. Pulse or vertical-line markers provide a scale on the frequency axis with the decades identified by higher intensity; see illustration on the left. A bright bar at the lower edge of the screen marks the adjusted sweep range on a scale.

Display, dynamic range. The incorporated deflection amplifiers can be switched for positive and negative test voltages. The deflection factor is at least 0.5 mV/cm. DC voltages up to 50 V can be eliminated by clamping. When an RF signal of 25 mV is applied, the internal demodulator, which is match-terminated, gives a deflection voltage sufficient for full display height. With logarithmic amplification, the dynamic range covers 60 dB.

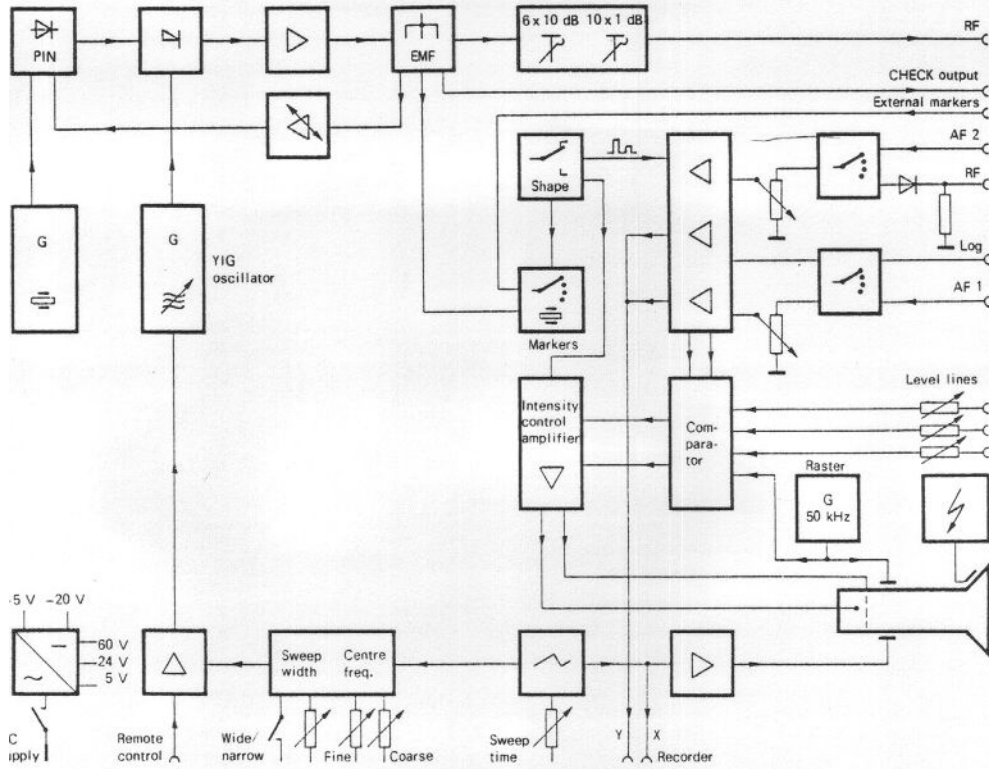
Sweep control. The modes manual, forward, forward with zero reference in the return sweep, and SINGLE can be selected by a switch. The SINGLE mode is also used for recorder operation.

Connectors for remote control and external instruments. The rear panel accommodates remote-control input, trigger input, RF check output, recorder output for AF 1 and a test socket to which supply voltages, display signal (squarewave) and sweep voltage (sawtooth) are applied.



Broadband measurement over > 800 MHz on a VHF-UHF filter for TV Bands III and IV/V

Block diagram of Polyskop IV SWOB



Specifications

Frequency range	0.1–1000 MHz (in one band; only centre frequency and sweep width need be adjusted)	
Sweep width	max.	min.
WIDE	≈ 1000 MHz	≈ 5 MHz
NARROW	≈ 25 MHz	≈ 0.15 MHz
Spurious sweep width (NARROW)	≤ 5 kHz, typ. 3 kHz	
Sweep linearity	better than 1:1.01	
Indication linearity	better than 1:1.1	
Centre frequency	freely adjustable: coarse–fine	
Output EMF into (adaptable Dezifix B connector)	50 Ω:	60 Ω: 75 Ω:
	1 V	1 V 0.7 V
	(can be increased by 6 dB in the range 0.5–300 MHz by rear switch)	
Frequency response (V_{out} with match-termination)	flat within 1 dB (typ. 0.5 dB) for 0.1–1000 MHz	
	flat within 0.15 dB for 10 MHz sweep	
Output level setting	attenuator 0–70 dB, 1-dB steps	
Attenuator error up to 1000 MHz	fine	coarse
	≤ ± 0.2 dB	≤ ± 0.5 dB
Harmonic suppression	≥ 30 dB	
0.1–1 MHz	≥ 36 dB (typ. 40 dB)	
> 1–1000 MHz	≥ 36 dB (typ. 40 dB)	
Suppression of non-harmonic spurious signals	≥ 40 dB	
Frequency markers	internal: 100: 100/10: 10/1 MHz	
external	V _{in} ≈ 0.2 V; 1–1000 MHz	
Marker display	pulse or vertical-line markers	

Frequency sweep:	HAND		SINGLE
Sweep mode, display	0 ←		
Forward only (rising f)	Forward/return with zero ref.	Manual	Triggered by button, return blanked

Sweep time	Forward	Return	20 ms, fixed
0.02–2 s	0.02–2 s	0.02–2 s	
	—	—	
	Forward	Return	0.02–2 s (≈ 30 s with recorder adapter cable)

Triggering	in SINGLE mode, trigger level +5 V	
Useful display area	21 cm × 16 cm, screen type GM	
AF input	2 BNC female connectors	
Deflection coefficient	0.2 mV/cm	
Max. input voltage	± 50 V	
Overload capacity	> 20 dB referred to full display height	
Selection of test signal to be displayed	rotary switch	
AF 1	OFF/+/–/+/–/–/–/Lin/Log	
AF 2	OFF/+/–/–/RF–/RF=	
Clamping of test signal	in switch position =, RF is blanked during return and AF clamped to 0 ± 50 V max.	
Superimposed DC	20 dB (linear)	
Display range	20 dB (linear)	
RF input	adaptable Dezifix B, match-terminated, VSWR ≤ 1.1 (up to 1000 MHz)	
Input voltage, rms	Minimum for full display height: 25 mV	
	Maximum permissible: 5 V	
Reference lines	three; separate adjustment of vertical position; common adjustment of intensity	
General data	Nominal temperature range: +5 – +40 °C	
	Shelf temperature range: –25 – +60 °C	
	AC supply: 110/125/220/235 V ± 10% (180 VA)	
	Dimensions, weight: 484 mm × 328 mm × 436 mm, 25 kg	

Order designations	▶ Polyskop IV SWOB	
50-Ω model	289.0013.52	
60-Ω model	289.0013.82	
75-Ω model	289.0013.72	

Accessories supplied 1 Demodulator (probe) SWOB 3-Z, power cable

Recommended extras	50 Ω:	60 Ω:	75 Ω:
RF Insertion Unit SWOB 4-Z	289.5711.00	154.8369.00	289.6763.00
Precision Cable (freq. resp.)	100.7870.10	126.2001.00	100.7687.00
Active Demodulator SWOB 4-Z	289.5773.52	—	289.5773.72
Impedance-match Bridge	912.7003.00	—	912.7303.00

Lin/Log Demod.	Probe SWOB 3-Z 241.1910.00 (0.1–500 MHz)	
Demodulator Probe SWOB 3-Z	241.2116.03 (0.5–400 MHz)	
Recorder Adapter Cable	289.5450.02 (sweep time switchover)	
Overvoltage Protection	289.6511.52 (for RF input or output)	