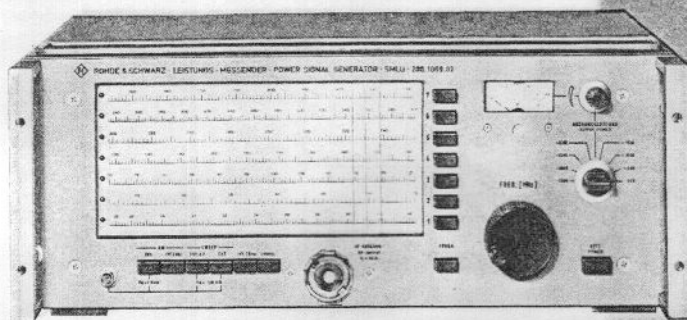




Power Signal Generator Type SMLU

♦ 25 – 1000 MHz

- Wide frequency range with seven linear subranges
- Maximum output level 33 dBm (2 W) with ALC
- External frequency sweep possible; frequency, range and power programmable
- For use as a power sweep generator see page 44

For each frequency subrange, the SMLU has a voltage-controlled oscillator, operating at the output frequency. A diode network ensures extremely good linearization of the tuning characteristic.

The provision of ALC and a well-defined 50-Ω output open up a number of new possibilities.

The Sweep Unit SMLU-Z converts the SMLU to a wideband power sweep generator for 25 to 1000 MHz (see page 44).

Characteristics of the SMLU:

Frequency selection. Pushbutton selection of frequency range, fine adjustment accurate to $\leq 1 \times 10^{-4}$ on linear scale with 0.2 to 5 MHz resolution. Manual tuning, programming and sweeping possible.

Sweeping. Either single internal sweep of one frequency subrange lasting 20 sec.—e.g. when using a chart recorder—or external sweep with $f_{\text{sw}} = 0 - 50$ Hz and max. sweep width = 1 subrange. The deflection voltage (sawtooth) of any oscilloscope is suitable as the sweep voltage. Frequency modulation is possible with manual or programmed adjustment of the centre frequency.

Modulation characteristics. In addition to FM (see under "Sweeping"), internal and external amplitude modulation of the SMLU output signal is possible. Amplitude modulation is performed via the ALC amplifier, ensuring a very linear modulation characteristic even at large depths of modulation. Internal AM: 1 kHz, $m = 80\%$, distortion $\approx 5\%$. External AM: 1 Hz – 10 kHz, $m = 90\%$ (6.5 V_{pp} for 80%).

The output power is extracted via a broadband directional coupler and kept constant by means of an ALC amplifier. The output power can be reduced continuously by 10 dB through variation of the reference level and also attenuated in 5-dB steps up to a maximum of 35 dB with a variable attenuator. Panel meter indication of level.

Frequency and output-level programming. Two SMLU models are available (see order designation). With model .02, the level and the frequency range can be remote-controlled. An analog input permits frequency adjustment.

parallel programming of the frequency, range and output level is possible in BCD code. The SMLU can also be programmed in serial ASCII code with the aid of the Code Converter PCW (see page 65) and is thus system-compatible. When using the PCW, the SMLU can be programmed by the Card Reader PCL or a punched-tape reader.

Specifications

Frequency range	25 – 1000 MHz
Subranges MHz	25 – 44 / 42.5 – 74 / 70.5 – 125 / 119 – 210 / 200 – 352 / 337 – 595 / 570 – 1000
Residual FM	0.7 – 15 kHz
Harmonic suppression	≥ 30 dB
Frequency synchronizing	via 2nd RF output and sync input
Output power	
Subranges 1 to 6 (25 – 595 MHz)	$\geq +33$ dBm (2 W, 10 V into 50 Ω)
Subrange 7 (565 – 1000 MHz)	$\geq +30$ dBm (1 W, 7 V into 50 Ω)
With AM (90%): subr. 1 to 6	$\geq +27$ dBm
subrange 7	$\geq +24$ dBm
Attenuation of output power	
Fine	– 10 dB
Coarse (attenuator)	– 35 dB in 5-dB steps
Panel meter	+ 22 to + 33 dBm (2 – 10 V)
Reflection coefficient	< 15 %
Remote control	
Logic function of programming inputs	negative logic without / with programming unit
E_{max}	+ 28 V DTL / TTL
I_{max}	50 mA compatible

Connectors

RF output I	Dezifix A, adaptable
Modulation input, sync input,	
RF output II	BNC

Order designations	► Power Signal Generator
SMLU without programming unit	Type SMLU 200.1009.02
with programming unit	200.1009.03

Recommended extras	Order No.
Code Converter PCW (page 65)	244.8015.92
Code Converter Board for SMLU	245.2610.02
Card Reader PCL (page 65)	248.6017.02
Sweep Unit SMLU-Z (page 44)	243.3010.92