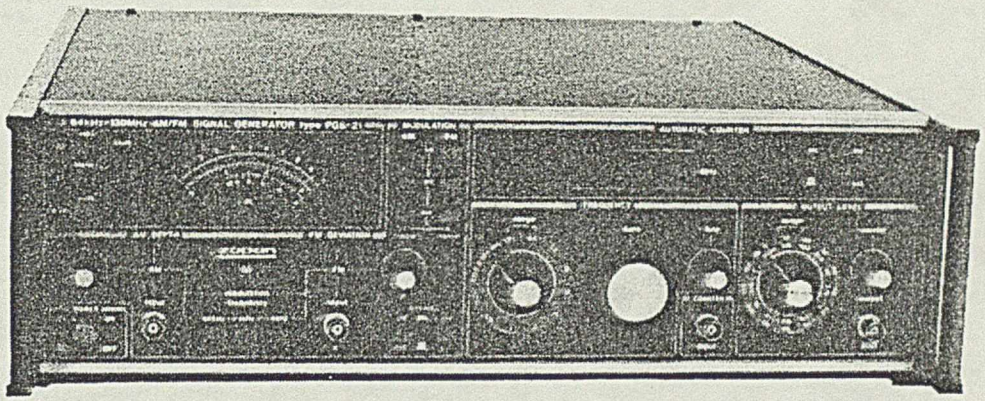
MEIRONEX

1987

AM/FM Signal Generator Type PGS-21



- digital frequency readout	
- frequency range	64 kHz - 130 MHz
- output voltage	
64 kHz - 30 MHz range	1 μV - 1 V
30 MHz - 130 MHz range	1 μV - 0,5 V
- AM and FM modulation	
- internal modulation frequencies	400 Hz, 1 kHz and 4 kHz
- external AM modulation	20 Hz - 20 kHz
- external FM modulation	20 Hz - 60 kHz
- maximum modulation depth	90%
- maximum deviation	100 kHz
- composite stereo modulation capability	
- digital frequency measurement of external signals in 20 Hz - 130 MHz range	

APPLICATIONS

The type PGS–21 Signal Generator is a laboratory-grade instrument providing a source of sinusoidal voltage,amplitude- or frequency-modulated, with adjustable amplitude and frequency. The output voltage can be amplitude-modulated in a frequency range from 20 Hz to 20 kHz, or frequency-modulated in a frequency range from 20 Hz to 60 kHz, from an external generator. The output can also be frequency-modulated by a composite stereo signal.
The instrument enables external signal frequency to be digitally measured in the range from 20 Hz to 130 MHz.
The PGS–21 Generator is intended for testing and alignment of electronic circuits in the frequency range from 64 kHz to 130 MHz.

SPECIFICATIONS

Frequency

Range	64 kHz - 130 MHz in 11 subranges
Accuracy	0,005%
Stability	
short-term	± 0.01% per 15 min
long-term	0,1% per 3 hours

Voltage

Output voltage /open circuit/ stepwisely adjustable in 10 db steps, and continuously, within each 10 dB range, in frequency ranges	
64 kHz - 30 MHz	1 μV - 1 V
30 MHz - 130 MHz	1 μV-0,5 V
Output voltage setting accuracy when adjusted for meter FSD	
64 kHz - 30 MHz	1 dB ± 1 μV
30 MHz - 130 MHz	1,5 dB ± 1,5 μV
Source impedance	50 Ohms
VSWR for voltages above 100 mV	<1,5
Voltage level change when tuning from 1 MHz reference	≤1 dB
Nonlinear distortion	<5%

AM MODULATION

Rated modulation depth	5 - 90%
Modulation depth setting accuracy	± 10% with respect to FSD
External modulation frequency range	20 Hz - 20 kHz
Maximum modulation frequency to carrier frequency relation	
Carrier frequency	Maximum modulation frequency
64 kHz - 125 kHz	3 kHz
125 kHz - 250 kHz	5 kHz
250 kHz - 500 kHz	10 kHz
0.5 MHz - 1 MHz	15 kHz
1 MHz - 130 MHz	20 kHz
Modulated output signal envelope distortion	< 6% at 80% modulation depth

FM MODULATION

Rated deviation range: /5 - 100/·K kHz
K=factor dependent on frequency subrange selected

Frequency MHz	65-130	32-65	16-32	8-16	4-8	2-4	1-2
K	1	2^{-1}	2^{-2}	2^{-3}	2^{-4}	2^{-5}	2^{-6}

Frequency kHz	500-1000	250-500	125-250	64-125
K	2^{-7}	2^{-8}	2^{-9}	2^{-10}

Deviation setting accuracy	15% of FSD
External modulation frequency range	20 Hz - 60 kHz
Maximum modulation frequency- - carrier frequency relation	
Carrier frequency relation	Maximum modulation frequency
64 kHz - 125 kHz	2 kHz
125 kHz - 250 kHz	4 kHz
250 kHz - 500 kHz	7 kHz
0,5 MHz - 1 MHz	10 kHz
1 MHz - 2 MHz	14 kHz
2 MHz - 4 MHz	20 kHz
4 MHz - 8 MHz	30 kHz
8 MHz - 130 MHz	60 kHz
Modulation distortion	< 2% with maximum deviation

Modulation Voltage Generator

Modulation frequency	400 Hz, 1 kHz, 4 kHz
Frequency accuracy	± 3%

Stereo Modulation

Stereo encoder drive modes:
- l.f. signal from internal or external generator applied to L channel input,
- l.f. signal from internal or external generator applied to R channel input,
- l.f. signal from internal or external generator, having identical frequency, level and phase, applied to both L- and R channel inputs simultaneously,
- l.f. signal from internal or external generator, having identical frequency and level but opposite phase, applied one to L-, the other to R channel input simultaneously,
- l.f. signals from external generator, having different frequencies, applied to L- and R channel inputs,
- 19 kHz pilot carrier signal

Pilot signal frequency	19 kHz
Pilot frequency accuracy	2 Hz
Maximum deviation by stereo signal	50 kHz
Deviation by pilot signal	5 kHz ± 15%
Channel separation at 1 kHz	35 dB
Spurious Effects	
Amplitude modulation effect on frequency	< 0,005%
Frequency deviation with modulation switched off	<0,001% of minimum subrange frequency
Frequency deviation due to the presence of AM	<0,02% of minimum subrange frequency
Amplitude modulation with modulation switched off	< 2%
Amplitude modulation due to the presence of FN	<5%
RF radiation. A voltage induced in coil, 2 turns 25,4 mm in diameter, spaced by 25,4 mm from the generator, measured with a microvoltmeter having 50 Ohm internal resistance	
with frequency counter on	≤3μV
with frequency counter off	≤1μV
External Generator Frequency Measurement	
Measurement range	f_x=20 Hz - 130 MHz
Gate time	t_g=1 ms, 10 ms, 100 ms, 1 s /autoranging
Measurement accuracy	$\pm \frac{\Delta f_{st}}{f_{st}} \times f_x \pm \frac{1}{t_g}$
	f_{st}=standard frequency
	$\frac{\Delta f_{st}}{f_{st}}$ = relative error of standard frequency generator
Input voltage	
100 Hz - 5 MHz	100 mV - 1 V
20 Hz - 130 MHz	300 mV - 1 V
Standard /clock/ frequency	1 MHz
Standard frequency stability	$5 \cdot 10^{-6}$ per 24 hours
Frequency display	7 - segment
Ambient Temperature Range	+5 +20 +40°C
Supply	
Voltage	220V ± 10%; 50 Hz
Power consumption	60 VA
Dimensions /incl. parts protruding beyond cabinet/	height 142 mm width 446 mm depth 455 mm
Weight	15 kg

The manufacturer reserves rights for changes in above specifications after development of prototypes.

zopan

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