



Signal Generator SMT

For receiver and EMS measurements
5 kHz to 1.5/3/6 GHz

New: 6 GHz

Signal Generator SMT covers the complete range of conventional analog receiver measurements up to 6 GHz. The SMT affords exceptionally high signal quality for a generator in this price category, as well as outstanding level accuracy, a wide variety of modulation

and signal generation modes, customized configuration, and great ease of operation. Features such as programmable RF, LF and level sweeps as well as the correction of external frequency response make the SMT an ideal source for EMS measurements.

- AM, FM, ϕ M, pulse modulation
- Broadband FM and ϕ M
- Options for signal generation:
 - pulse generator
 - LF generator
 - multifunction generator, eg for stereo and VOR/ILS signals



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Signal Generator SMT

Types of modulation

- Broadband FM from DC to 8 MHz, deviation up to 40 MHz
- Amplitude modulation
- Phase modulation from DC to 2 MHz

Standard functions

- Convenient RF, LF and level sweeps
- Memory sequence function for automatic measurements
- Programmable level correction for compensation of external frequency response

Innovative operating concept

- Large, backlit LCD for simultaneous display of all relevant settings
- All submenus and current instrument

ment status clearly arranged on the display

- On-line help system, thus no need to consult a manual

LF generator option

- Sinewave signals from 0.1 Hz to 500 kHz
- Triangular and squarewave signals up to 50 kHz
- Noise generator with 500 kHz bandwidth
- Multitone signals in conjunction with standard fixed-frequency generator or second LF generator option

Pulse modulator option

- Ideal for radar applications
- Rise/fall time <10 ns
- On/off ratio >80 dB
- Pulse frequencies up to 10 MHz

Multifunction generator option

- VOR/ILS signal generator for tests on VOR/ILS receivers
 - phase resolution 0.01°
 - DDM resolution 0.0001
- Stereo signal generator for measurements on FM broadcast transmitters and radio receivers
 - stereo separation >50 dB
 - unweighted S/N ratio >76 dB

Pulse generator option

- Single, delayed, double pulses
- Pulse width 20 ns to 1 s





The ideal EMS signal source

With a specified lower frequency limit of 5 kHz (underrange down to 1 kHz), the SMT fully covers the frequency range for EMS measurements stipulated by IEC 801.

The digital, step-by-step sweep function with preselectable start and stop frequency, span, step width and step time enables the convenient testing of wide frequency ranges. The sweep function can also be used for the RF level and AF frequency.

The frequency response of cables, amplifiers, TEM cells, etc can be compensated already in the signal generator by means of a level correction function. Complicated external level controls or test routines are superfluous.

Excellent RF characteristics at a reasonable price

For high-accuracy measurements on AM, FM and SSB receivers, the signal source must be superior to the DUT. The low residual FM and SSB phase noise of the SMT make it suitable for in-channel and blocking measurements even on high-end receivers. The small level error of <1 dB in the frequency range ≤ 1.5 GHz allows high-precision sensitivity measurements.

Minimum RF emissions – for sensitive DUTs

Measurements on highly sensitive receivers such as pagers not only require high signal quality but also extremely high RF shielding of the signal source. Elaborate shielding measures keep RF emissions of the SMT to a minimum, ie $<0.1 \mu\text{V}$, induced in a two-turn loop 25 mm in diameter in the immediate vicinity of the instrument.



Characteristics and features

High-grade modulation characteristics

A wealth of modulation modes, the user-selectable combination of various types of modulation and a multitude of modulation sources make the SMT a highly flexible instrument for use in development, production and repair of radio equipment.

AM

The modulation frequency range is DC to 100 kHz. Among the outstanding AM characteristics of the SMT are its extremely low distortion and flat frequency and phase response – characteristics that play a particularly important role in measurements on VOR/ILS receivers, for example.

Broadband FM

The modulation frequency range is DC to 8 MHz. Maximum deviation is 40 MHz (at 6 GHz carrier frequency). In the FM DC mode, high carrier frequency accuracy is ensured through the use of a special control circuit. There is virtually no drift. The SMT can thus generate highly accurate FSK signals as required for tests on radiopagers. The use of an external Gaussian filter permits GFSK signals in line with the DECT standard to be generated.

Broadband ϕ M

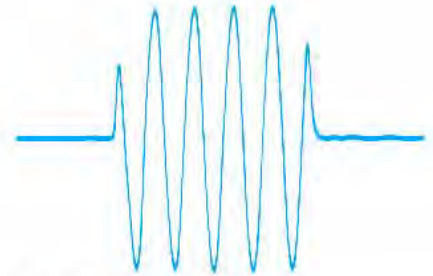
Phase modulation ranges from DC to 2 MHz. This wide span opens up fields of application for which most signal generators do not qualify, for instance tests on phase-sensitive circuits or the generation of PSK modulation with freely selectable phase deviation up to 20 rad.

Pulse modulation (option)

Its high-quality pulse modulation, featuring an on/off ratio better than 80 dB and a rise/fall time shorter than 10 ns, make the SMT an ideal choice for radar applications. The pulse generator option allows pulsed signals to be produced independent of an external source.

Memory sequence function for automatic measurements

For frequently repeated measurement series, eg frequency response measurements or sequences of different types of single measurements, the memory sequence function affords a convenience otherwise obtained only by means of processor control. Up to 50 instrument settings can be stored in a non-volatile memory. After programming the sequence of measurements and the step time in a list, the automatic test run can be started.

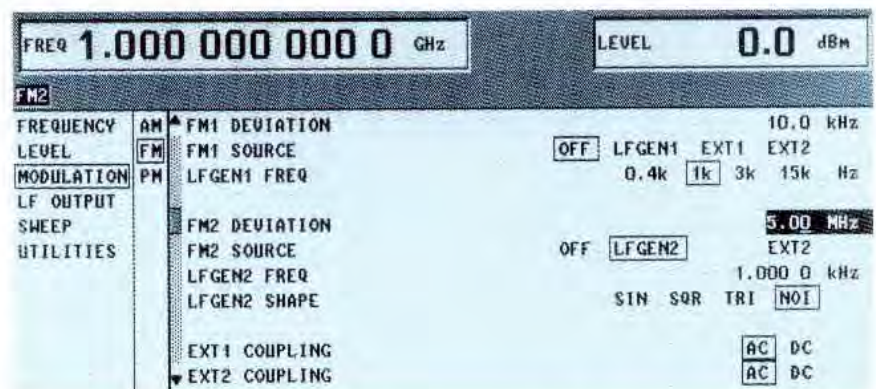


Pulse modulation of 50-MHz carrier

A wealth of functions – yet easy to operate

As a rule, the more functions provided in a unit, the more complex the operation. This certainly applies to conventional signal generators with multi-function keys and a variety of special functions.

But not with the SMT: operation is extremely easy thanks to a well thought-out operating concept featuring a large LCD display and menu guidance. All parameters selectable for a specific function are arranged in hierarchical order in a single display. Help texts for the individual functions mean that it is often unnecessary to consult a manual.



The FM modulation menu shows the clear-cut representation of selectable parameters and current instrument status on the display. Each setting can be made quickly and easily by means of the spinwheel and a few keys

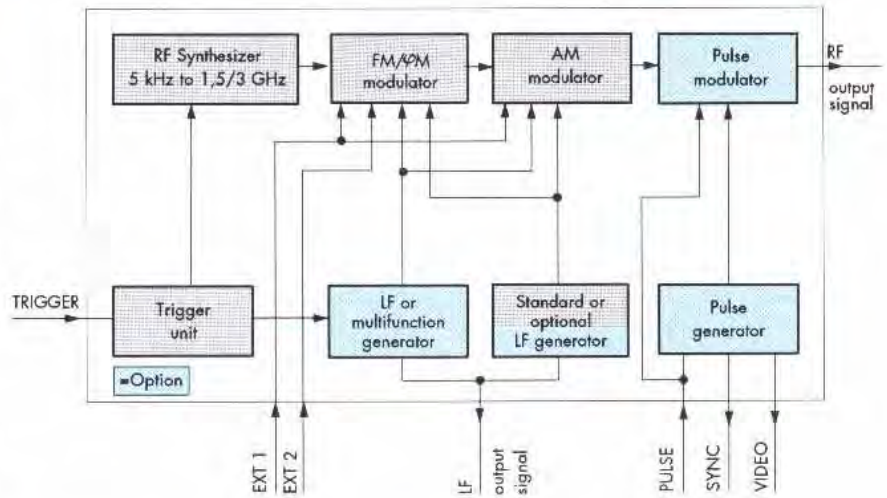
Configurable to user's requirements

AM, FM, ϕ M and pulse modulation can be used with various internal and external modulation sources. The SMT can be tailored to suit specific applications by means of optional modules. These can also be retrofitted quickly and easily at a later date.

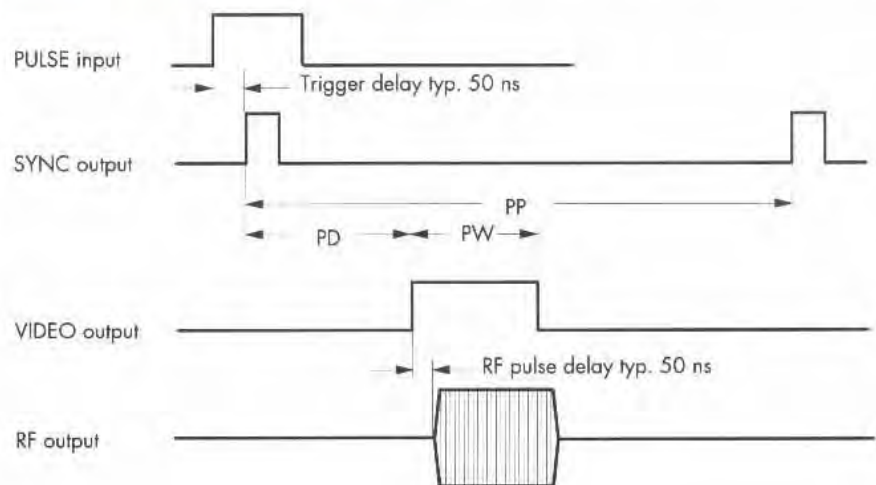
The **LF generator**, which can be fitted in addition to the fixed-frequency LF generator provided as standard, is a synthesizer up to 500 kHz. Besides sine wave, square wave and triangular signals, it also supplies a noise signal. If two optional LF generators are fitted in a unit, multitone signals can be generated internally.

The **multifunction generator** with a frequency range from DC to 1 MHz produces the same signals as the optional LF generator and, in addition, **stereo** multiplex and **VOR/ILS** modulation signals. The multifunction generator option makes the SMT suitable even for highly demanding measurements on FM stereo and navigation receivers.

The **pulse generator** provides single and double pulses as required for radar receiver testing. The pulse repetition period (PP), pulse width (PW) and pulse delay (PD) (see diagram) can be set with high accuracy and resolution.



The multifunction generator also supplies VOR/ILS signals for tests on navigation receivers



Specifications

Frequency

Range 5 kHz to 1.5 GHz (SMT02)
5 kHz to 3 GHz (SMT03)
5 kHz to 6 GHz (SMT06)

Underrange (specs not binding) down to 1 kHz
Resolution 0.1 Hz

Setting time after IEC/IEEE-bus delimiter to within $<1 \times 10^{-7}$ for $f > 67.5$ MHz and <70 Hz for $f < 67.5$ MHz

Phase offset <20 ms adjustable in steps of 1°

Reference frequency

Aging (after 30 days of operation) $<1 \times 10^{-6}$ /year
Temperature effect (0 to 55 °C) 2×10^{-6}

Standard $<1 \times 10^{-6}$ /year
Option SM-B1 $<1 \times 10^{-9}$ /day
 $<5 \times 10^{-8}$
10 min

Warm-up time —

Output for internal reference

Frequency 10 MHz
Level (EMF, sinewave) $1 V_{\text{rms}}$
Source impedance 50Ω

Input for external reference

Frequency 5 or 10 MHz
Permissible frequency error 3×10^{-6}
Input level 0.1 to $2 V_{\text{rms}}$

Input impedance 200Ω

Electronic tuning (TUNE)

Input voltage range 1×10^{-7} /V
Input impedance $\pm 10 V$
 $10 k\Omega$

Spectral purity

Spurious signals

Harmonics

level ≤ 10 dBm $^{1)}$ <-30 dBc
level without overrange <-26 dBc

Subharmonics

$f < 1.5$ GHz none
 $f > 1.5$ GHz <-40 dBc
 $f > 3$ GHz <-34 dBc

Nonharmonics at >10 kHz from carrier

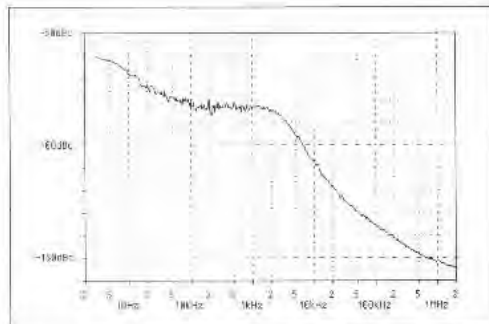
$f < 1.5$ GHz <-80 dBc
 $f > 1.5$ GHz <-74 dBc
 $f > 3$ GHz <-68 dBc

Broadband noise for CW $^{1)}$

at >10 MHz from carrier, 1-Hz bandwidth
 $f \leq 3$ GHz <-140 dBc (typ. <-145 dBc)
 $f > 3$ GHz <-134 dBc (typ. <-139 dBc)

SSB phase noise 20 kHz from carrier at

1-Hz bandwidth, FM/ϕM deviation $<1\%$ of maximum deviation
 <67.5 MHz <-120 dBc
80 MHz <-139 dBc
125 MHz <-134 dBc
250 MHz <-128 dBc
500 MHz <-122 dBc
1000 MHz <-116 dBc
2000 MHz <-110 dBc
3000 MHz <-109 dBc
6000 MHz <-103 dBc



Typical SSB phase noise at 1 GHz (CW)

Residual FM, rms, at carrier frequency
 <67.5 MHz <2 Hz
67.5 to 187.5 MHz <2 Hz
187.5 to 375 MHz <4 Hz
375 to 750 MHz <8 Hz
750 to 1500 MHz <16 Hz
1500 to 3000 MHz <32 Hz
3000 to 6000 MHz

0.3 to 3 kHz (CCITT) <4 Hz
0.03 to 20 kHz <10 Hz
 <3 Hz
 <5 Hz
 <10 Hz
 <20 Hz
 <40 Hz
 <80 Hz

Residual AM, rms (0.03 to 20 kHz) $^{1)}$ $<0.02\%$

Level

Range -144 to $+13$ dBm

Overrange (specs not binding) up to 16 dBm

Resolution 0.1 dB

Total error for levels >-127 dBm $^{1)}$

$f < 1.5$ GHz <1 dB
 $f > 1.5$ GHz <1.5 dB
 $f > 3$ GHz <2 dB

Level flatness at 0 dBm $^{1)}$

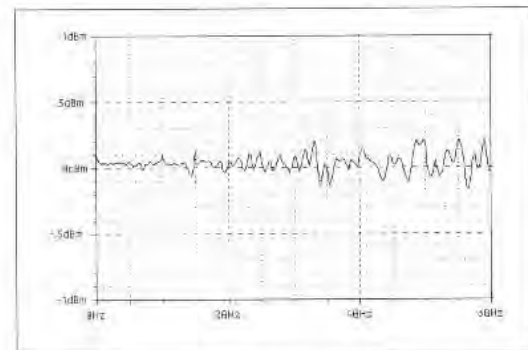
$f \leq 3$ GHz <1 dB
 $f > 3$ GHz <1.5 dB

Output impedance 50Ω

VSWR $^{1)}$	$f \leq 3$ GHz	$3 \text{ GHz} < f \leq 5 \text{ GHz}$	$f > 5 \text{ GHz}$
Level >0 dBm	<2	<2	<2
Level >0 dBm and option SM-B9 fitted (SMT06)	<2	<2	<2.5
Level ≤ 0 dBm	<1.5	<2	<2

Setting time (IEC/IEEE bus) <25 ms (<10 ms with electronic level setting)

Non-interrupting level setting (ATTENUATOR MODE FIXED)
Setting range 23 dB



Typical level frequency response at 0 dBm

Overvoltage protection

protects the unit from externally applied RF power (50-Ω source) and DC voltages
50 W (SMT02/03)
1 W (SMT06)
35 V (SMT02/03)
0 V (SMT06)

Max. RF power

Max. DC voltage

Simultaneous modulation	any combination of AM, FM (φM) and pulse modulation	
Amplitude modulation	internal, external AC/DC	
Operating modes	0 to 100%	
Modulation depth	modulation depths meeting AM specifications linearly decrease on increasing the level from 7 to 13 dBm; a status message will be output if the modulation depth is too great	
Resolution	0.1%	
Setting error at 1 kHz ($m < 80\%$) ¹⁾	<4% of reading $\pm 1\%$	
AM distortion at 1 kHz ¹⁾		
$m = 30\%$	<1%	
$m = 80\%$	<2%	
Modulation frequency range	DC to 100 kHz	
Modulation frequ. response ($m = 60\%$) ¹⁾		
20 Hz (DC) to 50 kHz	<1 dB	
Incidental φM with 30% AM, AF = 1 kHz	<0.2 rad ($f \leq 3$ GHz) <2 rad ($f > 3$ GHz)	
EXT 1 modulation input		
Input impedance	>100 k Ω	
Input voltage for selected modulation depth	1 V _P (high/low indication for inaccuracy >3%)	
Frequency modulation	internal, external AC/DC, two tone with two separate channels FM1 and FM2	
Operating modes		
Max. deviation at carrier frequency		
<130 MHz	5 MHz	
130 to 187.5 MHz	1.25 MHz	
187.5 to 375 MHz	2.5 MHz	
375 to 750 MHz	5 MHz	
750 to 1500 MHz	10 MHz	
1500 to 3000 MHz	20 MHz	
3000 to 6000 MHz	40 MHz	
Resolution	<1%, min. 10 Hz	
Setting error at AF=1 kHz (FM AC)	<3% of reading + 20 Hz	
FM distortion at AF=1 kHz and 10% max. deviation	<0.3%, typ. 0.1%	
Modulation frequency range, FM1	DC to 100 kHz	
FM2	DC to 8 MHz	
Modulation frequency response		
20 Hz (DC) to 100 kHz	<0.5 dB	
Incidental AM at AF=1 kHz, f > 1 MHz, deviation = 40 kHz	<0.1%	
Stereo modulation at		
40 kHz deviation, AF=1 kHz, RF= 88 to 108 MHz		
Stereo separation	>50 dB ²⁾	
Unweighted S/N ratio (rms)	>76 dB	
Weighted S/N ratio (rms)	>70 dB	
Distortion	<0.2%	
Carrier frequency offset with FM DC ²⁾	<0.1% of deviation	
EXT1, EXT2 modulation inputs		
Input impedance	>100 k Ω	
Input voltage for selected deviation, AF = 10 Hz to 100 kHz	1 V _P (high/low indication for inaccuracy >3%)	
Phase modulation	internal, external AC/DC, two tone with two separate modulation channels $\varphi M1$ and $\varphi M2$	
Operating modes		
Max. deviation (broadband φM only with $\varphi M2$)	Narrowb. φM, bandw. 100 kHz Broadb. φM, bandw. 2 MHz	
<130 MHz	50 rad 2.5 rad	
130 to 187.5 MHz	12.5 rad 0.625 rad	
187.5 to 375 MHz	25 rad 1.25 rad	
375 to 750 MHz	50 rad 2.5 rad	
750 to 1500 MHz	100 rad 5 rad	
1500 to 3000 MHz	200 rad 10 rad	
3000 to 6000 MHz	400 rad 20 rad	
Resolution	<1%, min. 0.001 rad	
Setting error at AF=1 kHz	<[3% of reading + 0.01 rad]	
Distortion at AF=1 kHz and max. deviation	<0.5%, typ. 0.1%	
Modulation frequency range, $\varphi M1$	DC to 100 kHz	
$\varphi M2$	DC to 2 MHz	
EXT1, EXT2 modulation inputs		
Input impedance	>100 k Ω	
Input voltage for selected deviation, AF = 10 Hz to 100 kHz	1 V _P (high/low indication for inaccuracy >3%)	
Pulse modulation		
Operating modes		
Frequency range		
50 MHz to 1.5 GHz (SM-B3)		
50 MHz to 3.0 GHz (SM-B8)		
50 MHz to 6.0 GHz (SM-B9)		
Max. output level		
10 dBm (SM-B3)		
9 dBm (SM-B8)		
8 dBm (SM-B9)		
Harmonics		
On/off ratio		
Rise/fall time (10/90%)		
Pulse repetition rate		
Pulse delay		
Video feedthrough		
PULSE modulation input		
Input level		
Input impedance		
TTL (HCT)		
50 Ω or 10 k Ω		
Internal modulation generator		
Frequency	0.4/1/3/15 kHz $\pm 3\%$	
Open-circuit voltage	1 V _P $\pm 1\%$ ($R_{out} = 10 \Omega$, $R_L > 200 \Omega$)	
LF generator		
Waveforms	option SM-B2 sinewave, triangular, squarewave, noise	
Frequency range		
sinewave, noise	0.1 Hz to 500 kHz	
triangular, squarewave	0.1 Hz to 50 kHz	
Resolution	0.1 Hz	
Frequency error	<1 x 10 ⁻⁴	
Frequency response (sinewave)		
up to 100 kHz	<0.3 dB	
up to 500 kHz	<0.5 dB	
Distortion (20 Hz to 100 kHz)	<0.1% (level >0.5 V)	
Open-circuit voltage	1 mV _P to 4 V _P ($R_{out} = 10 \Omega$, $R_L > 200 \Omega$)	
Resolution	1 mV	
Setting error at 1 kHz (sinewave)	1% + 1 mV	
Frequency setting time	<10 ms (after receipt of last character from IEC/IEEE bus)	
Multifunction generator		
Waveforms	option SM-B6 sinewave, triangular, sawtooth, squarewave, noise, stereo MPX signals, VOR/ILS modulation signals	
Frequency range		
sinewave, noise	0.1 Hz to 1 MHz	
triangular, sawtooth, squarewave	0.1 Hz to 50 kHz	
Resolution	0.1 Hz	
Frequency error	same as for reference frequency	
Frequency response (sinewave)		
up to 100 kHz	<0.3 dB	
up to 1 MHz	<0.5 dB	
Distortion (20 Hz to 100 kHz)	<0.1% (level >0.5 V)	
Open-circuit voltage	1 mV _P to 4 V _P ($R_{out} = 10 \Omega$, $R_L > 200 \Omega$)	
Resolution	1 mV	
Setting error at 1 kHz	1% + 1 mV	
Frequency setting time	<10 ms (after receipt of last character from IEC/IEEE bus)	
Stereo multiplex signal		
Stereo operating modes	with multifunction generator R, L, R=L, R=-L, ARI (pilot tone/MPX signal can be connected to LF socket)	
Frequency range of L, R signal	0.1 Hz to 1.5 kHz	
Preemphasis	50 μs , 75 μs	
Pilot-tone frequency	19 kHz ± 1 Hz	
Pilot-tone phase	0 to 360°	
Resolution	0.1°	
Stereo separation	>60 dB	
Distortion	<0.1% (L, R=1 kHz)	
Carrier suppression (38 kHz)	>65 dB	
Settings selectable for ARI ³⁾ (ARI = broadcast information for motorists)		
Area identification	A, B, C, D, E, F	
Traffic announcement identification	on/off	
Additional signals (RDS, RDS+ARI)	application via EXT 1 input	

VOR modulation signal¹⁾

Settings
Phase
Phase resolution
Bearing error (RF output,
108 to 118 MHz)
FM error (deviation 480 Hz)

with multifunction generator
30 Hz (VAR, REF)/9.96-kHz FM
carrier, FM deviation, COM/ID tone
0 to 360°
0.01°

<0.05°
<1 Hz

ILS modulation signal¹⁾

Settings
DDM setting range
DDM resolution
DDM error (RF output)
Localizer (108 to 112 MHz)
Glideslope (329 to 335 MHz)

with multifunction generator
90-Hz, 150-Hz tone, COM/ID tone,
marker beacon
0 to ±0.8
0.0001

<0.0004 + 2% of DDM reading
<0.0008 + 2% of DDM reading

Pulse generator

Operating modes
Active trigger edge
Pulse repetition period
Resolution
Accuracy
Pulse width
Resolution
Accuracy
Pulse delay
Resolution
Accuracy
Double pulse
Resolution
Accuracy
Trigger delay
PULSE modulation input
Input level
Input impedance
Sync output
Video output

option SM-B4
single pulse, delayed pulse,
double pulse
positive or negative
100 ns to 85 s
5-digit, min. 20 ns
same as for reference frequency
20 ns to 1 s
4-digit, min. 20 ns
5% of reading ±5 ns
40 ns to 1 s
4-digit, min. 20 ns
5% of reading -10 to +20 ns
60 ns to 1 s
4-digit, min. 20 ns
5% of reading -10 to +20 ns
typ. 50 ns
TTL (HCT)
50 Ω or 10 kΩ
TTL level (HC), 40 ns pulse width
TTL level (HC)

Sweep

RF sweep, LF sweep
Operating modes

digital, in discrete steps
LF sweep with option SM-B2
automatic, single-shot, manual or
externally triggered, linear or
logarithmic

freely selectable
0.01 to 100%

Sweep range and
step width (lin)
step width (log)
Level sweep
Operating modes

automatic, single-shot, manual or
externally triggered, logarithmic
0.1 to 20 dB
0.1 to 20 dB
10 ms to 5 s
0.1 ms
3, freely selectable
TTL/HC logic signal, selectable
polarity
0 to 10 V
TTL/HC logic signal, selectable
polarity

Sweep range
Step width
Step time
Resolution

Markers
MARKER output signal

X output
BLANK output signal

Memory for instrument settings

Storable settings
Memory sequence modes

50
automatic, single-shot, manual or
externally triggered
50 ms to 60 s
1 ms

Step time
Resolution

Remote control

System
Instruction set
Connector
IEC/IEEE-bus address
Interface functions

IEC 625 (IEEE 488)
SCPI 1993.0
24-contact Amphenol
0 to 30
SH1, AH1, T6, L4, SR1, RL1, PP1,
DC1, DT1, C0

General data

Power supply

90 to 132 V (AC), 47 to 440 Hz,
180 to 265 V (AC), 47 to 440 Hz,
autosetting to AC voltage,
max. 300 VA,
safety class I VDE 0411
(IEC 348)

Electromagnetic compatibility

Standards met

German Postal Decree 243/1991,
EN 55011 (VDE 0875 T11), class B,
VDE 0875, interference suppression
level K, MIL-STD 461 B
- RE 02 radiated emissions
- CE 03 conducted emissions
- CS 01/02 conducted
susceptibility

RF emissions (f < 1 GHz)

<0.1 μV (induced in a two-turn loop
25 mm in dia at a distance of 25 mm
from any surface of the enclosure)
10 V/m

Radiated susceptibility

10 V/m
Operating temperature range
Storage temperature range
Humidity

Ambient conditions

Operating temperature range
Storage temperature range
Humidity

0 to 55 °C⁴⁾
-40 to +70 °C
DIN IEC 68-2-30, +40 °C

Mechanical stress

Shock

to MIL-STD 810 D,
40 g shock spectrum
to DIN IEC 68-2-6, 5 to 55 Hz
10 m/s² rms, 10 to 300 Hz

Vibration, sinewave

Vibration, noise

Dimensions (W x H x D)

435 mm x 192 mm x 350 mm

Weight

20 kg for fully equipped unit

Ordering information

Order designations

Signal Generator SMT02
1039.2000.02
Signal Generator SMT03
1039.2000.03
Signal Generator SMT06
1039.2000.06

Accessories supplied

power cable, operating manual

Options

Reference Oscillator OCXO	SM-B1	1036.7599.02
LF Generator ⁵⁾	SM-B2	1036.7947.02
Pulse Modulator for SMT02 ⁵⁾⁶⁾	SM-B3	1036.6340.02
Pulse Modulator for SMT03 ⁵⁾⁶⁾	SM-B8	1036.6805.02
Pulse Modulator for SMT06 ⁵⁾⁶⁾	SM-B9	1039.5100.02
Pulse Generator (only with option SM-B3 or SM-B8/SM-B9)	SM-B4	1036.9310.02
Multifunction Generator ⁵⁾	SM-B6	1036.7760.02
Rear Connectors for RF and AF	SMT-B19	1039.4003.02

Recommended extras

19" Rack Adapter	ZZA-94	0396.4905.00
Service Kit	SM-Z2	1039.3520.02
SMT Service Manual		1039.3359.24



¹⁾ Does not apply to non-interrupting level setting
(ATTENUATOR MODE FIXED and USER CORR).

²⁾ Applies to a period of one hour after calibration and with temperature
variations <5 °C.

³⁾ In the ARI mode, L = R = OFF.

⁴⁾ Contrast of LCD display degraded at high temperatures.

⁵⁾ A second optional modulation generator (SM-B2 or SM-B6) can be fitted
only if no pulse modulator (SM-B3, SM-B8 or SM-B9) is fitted.

⁶⁾ Retrofit by authorized service centers only.

Minimum maintenance requirements

Calibration

Calibration of the unit is required every three years at the earliest. Calibration values are loaded via the RS-232-C or IEC/IEEE-bus interface to ensure frequency and level accuracy to specifications. The unit neither needs to be opened, nor are any mechanical adjustments to be made.

Self-diagnostics

For maintenance and calibration, precise data on the instrument status are needed. Using the built-in test equipment, the SMT supplies these data without any extra equipment required.

Self-test for enhanced reliability

The signal generator status is continuously monitored. The SMT indicates malfunctions and deviations from nominal values by means of a message on the display.

Built-in test equipment

The signal generator can be fully checked without any extra test equipment required and without opening the unit. There are 65 test points covering all crucial areas in signal generation such as RF signal levels and control circuit monitoring voltages. When a test point is called up via the keyboard or the IEC/IEEE bus, its number and value appear on the display. The source of error can thus easily be identified in the event of a malfunction.

A diagnostic and adjustment program for process controllers compatible with the industry standard (included in Service Kit SM-Z2) enables the automatic evaluation and logging of the instrument status. Adjustments can easily and rapidly be made without any extra test equipment required. During the several days of burn-in following production, the SMT is continuously checked through with the aid of this program. This ensures that an extremely reliable instrument tested throughout the entire temperature range will be supplied to the customer.

Rear panel of SMT





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