

Test signal generator for GSM/DCS/PCS/UMTS networks

Test signal generator TSG-1 is designed specially for measurements in E-GSM900, DCS1800 and UMTS bands.

Features:

- Very stable
- Compact case
- Full frequency band cover
- Large built-in LCD
- Replaceable and rechargeable accumulators

Application areas:

- GSM/UMTS networks
- Cable networks



Figure 1: TSG-1 main view.

Product description:

TSG-1 generates one PLL-stabilized sinusoidal signal. Output signal frequency can be chosen from ordered frequency ranges. It is possible to choose any frequency from defined ranges with step 200 kHz (for example 880.2, 880.4 etc).

TSG-1 allows saving of the tuned frequencies into EEPROM and immediate recalling them in case of need. Built-in battery level indicator (right lower corner of LCD) shows remaining power of 3xAAA-cells. If level is equal to 4.5V (or above) the indicator will show 9. In case of low level (3.5V or less) value is 0.

TSG-1 can be switched into special "Idle Mode". Using generator in such mode the output of the device is free of any signal. In idle mode power consumption is much lower (that means longer battery life) and all chosen frequencies will be kept without changes.

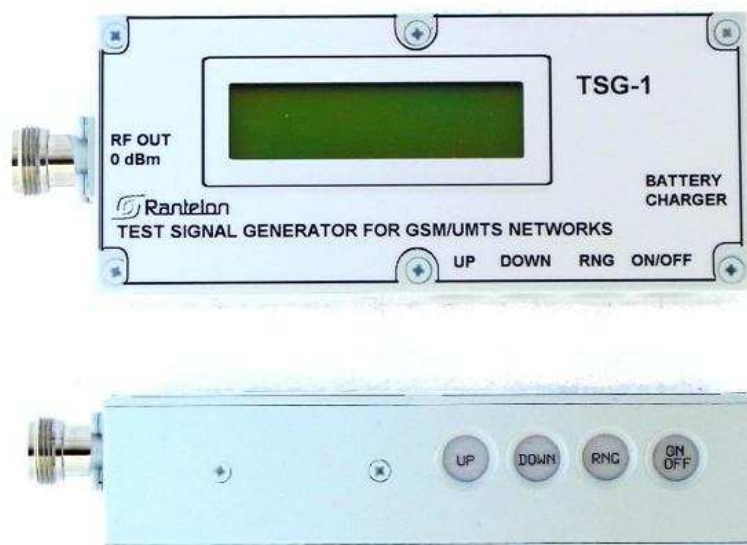


Figure 2: TSG-1 top and side view.

Technical specifications:

Parameter	Specification
Output frequency ranges *	880-915MHz 925-960MHz 1710-1785MHz 1805-1880MHz 1920-1980MHz 2110-2170MHz
Frequency tuning step	200kHz
Output impedance	50Ω
Output level	0dBm
Flatness	± 2dB (typ. 1dB)
Spurious	> 40dBc
Phase noise	110dBc @ 200kHz
Harmonics filter	built-in
Operating time (3xAA-type new accum. 2600mAh)	> 8 hours
Accumulators	3 pcs., AA-type, NiMH, 1.2V
Battery charging duration (2600mAh NiMH 3xAA with charger included in set)	≈ 3.5- 4.0 hours
Battery level indicator	digital, built-in
Settings saving possibility	internal EEPROM, built-in
External 3-cell charger ** 1000mA, 2.1mm DC-connector	part of a final set
RF-connector	N-type, female
Dimensions	161 x 64x 36 mm

* Optional! Frequencies from 750MHz up to 5GHz are available on order. For more details ask Rantelon.

** **NB!** Using external charger supply please ensure that center pin (inner conductor) of 2.1mm DC-connector is connected to positive lead. +12V protective transistor diode is mounted onto battery charger input. Begin charging only when the battery level indicator is showing “1” or less. If charging troubles are occurred at the beginning of charging process, probably initial battery charge is too low: pre-charge or replace the battery.

Do not use device in unspecified conditions! If there is a need for hardware reset (in case of firmware trouble etc.) the following sequence should be performed: first remove the cover, then remove the battery, wait at least 10 seconds, then insert the battery and put the cover on.

Buttons:

ON/OFF - switches device ON and OFF

RNG - switches between frequency ranges and Idle Mode

DOWN - changes current frequency to next lower frequency (step = 200 kHz) in chosen frequency range

UP - changes current frequency to next higher frequency (step = 200 kHz) in chosen frequency range

Settings and properties:

- Output level approximately equals to 0dBm in all ranges.
- Harmonics rejection degree: 40dB or more.
- When device is switched on output frequency is set to default frequency.
- To save desired frequencies into EEPROM, chose “Idle Mode” and push “DOWN”. If procedure successfully completed, in lower left corner of LCD the word “SAVED” must be blinking.
- To recall desired frequencies from EEPROM, chose “Idle Mode” and push “UP”. If procedure successfully completed, in lower left corner of LCD the word “DONE” must be blinking.
- To replace batteries/accumulators unscrew the case (there are 6 screws in the corners and center of the top cover) and replace batteries/accumulators.