

## Test signal generator

Test signal generator TSG-1 is designed specially for measurements in GSM900, GSM1800 and UMTS bands.

### Features:

- Very stable
- Compact case
- Full frequency band cover
- Large built-in LCD
- Easy software
- Replaceable accumulators
- Accumulators charging possibility

### Application areas:

- GSM/UMTS networks
- Cable networks

### Product description:

Generator TSG generates one PLL-stabilized sinusoidal signal. Frequency of output signal can be chosen from 6 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 tuned before frequencies into EEPROM and immediately recalling them in case of need.

Built-in battery level indicator shows (right lower corner of LCD) remaining power of three AA-cells. If level is equal with 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 output of device is free of any signal, power consumption is much lower (that means longer battery life) and all chosen frequencies will keep without changes.



Figure 1: 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. 1.5dB)
Spurious	> 40dBc
Phase noise	100dBc @ 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 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

\* on order other frequencies are available: 750MHz up to 5GHz. For more details ask Rantelon.

### Buttons:

ON/OFF - switching device ON and OFF

RNG - switching between six frequency ranges and Idle Mode

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

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

### Settings and properties:

- Output level approximately equals with 0 dBm in all ranges.
- Harmonics rejection degree comes to 40 dB or more.
- Switching the device on, output frequency is tuned onto lowest frequency of defined range.
- To save desired frequency set into EEPROM, chose "Idle Mode" and put "DOWN". If procedure successfully completed, in lower left corner of LCD it must be seen "SAVED".
- To recall desired frequency set from EEPROM, chose "Idle Mode" and put "UP". If procedure successfully completed, in lower left corner of LCD it must be seen "DONE".
- In case of need, batteries/accumulators can be replaced: unscrew case (in corners and center of top cover 6 screws) and replace batteries/accumulators.