OPERATING INSTRUCTIONS

SPM 8

RF signal level measuring instrument

v1.48

SAT–Kabel®
Satelliten- und Kabelfernsehanlagen/Industrievertretung GmbH
Chemnitzer Straße 11 · 09217 Burgstädt

We thank you for buying of a product of the company SAT-Kabel®.
This operating instructions shall help you to understand the functions of the instrument and to ease its use. If you have questions about this instrument or suggestions for further improvements, please get in touch with us.

Scope of delivery

In a plastic case are containing:

1× **SPM 8** incl. high-quality NiMH accumulator
1× Plugin charging device AC/DC
1× F-measuring cable 80 cm
1× Adapter **FI-BB** (F-socket to IEC-socket)
1× Attenuator 20 dB
Operating instructions

Description

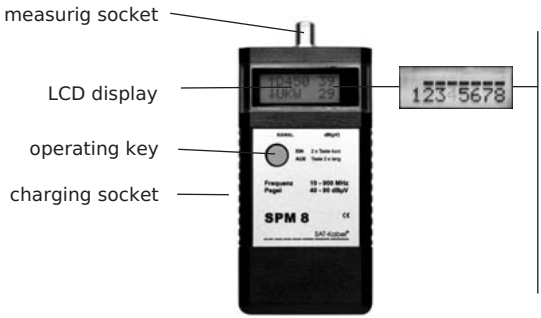
The **SPM 8** is low-priced, very small antenna level measuring instrument for a time-saving level checking on system outlets of CATV networks. It is also usable for troubleshooting in the distribution network. It can be measured analogue and digital levels. Because of its automatic self calibration of the instrument the measured values are nearly temperature independent.

The display takes place in the normal mode range by range by eight bars. Detected exceeding and undercuts of the level limits are especially marked in this case. Beyond that the level can be also measured channel by channel. For a clear operation and efficient measurement in the instrument can be created a channel plan. At this the channels to be measured can assigned the range measurement, the single channel measurement (favourite channels) or both of them. In the channel measuring menu at first is carried out also a minimum-maximum-scan.

The operation and if necessary also the programming are carried out with only one key. Because of its small dimensions you can put this instrument in your pocket. However for a better protection the instrument is delivered with the accessories in a good padded plastic case.

For the power supply the instrument is equipped with a high quality NiMH accumulator. The charging device as well as the measuring cable and adapter belongs to the scope of delivery. An also enclosed attenuator allows in problem cases to measure level up to 110 dB(µV).

Operational elements



channel range bars (**B**)	range
B 1 (range 1):	Ch2–Ch4
B 2 (range 2):	RF 87,5–108 MHz
B 3 (range 3):	S2–S10
B 4 (range 4):	Ch5–Ch12
B 5 (range 5):	S11–S20
B 6 (range 6):	S21–S41
B 7 (range 7):	Ch21–Ch37
B 8 (range 8):	Ch38–Ch69

Important notes

- Do not measure at live objects >65 VAC !
- Do not expose incident solar radiation, heath and extreme coldness!
- The working temperature range is 0 °C until +40 °C
- Avoid shocks by bumps or falling down.
- The F-measuring socket is a high-quality component.

The measuring socket is only suitable for a maximum diameter of the inner conductor of 1.1 mm.

Accumulator charging

Connect the plug-on power supply 12 VDC to the charging socket 5.5/2.1 mm (+pole inside). Display of the power supply voltage (11–16 V) and charging check on the display.

Cleaning and maintenance

The surface of the housing can be cleaned with a dry, soft and lintfree cloth. Do not use aggressive solvents for the cleaning.

Measuring principle

The total frequency range from 47 to 862 MHz is scanned. The respectively measured level of the channels according the programmed channel plan are compared with the programmed level limits. After that takes place the graphical display over eight bars. If a level value undercut or exceed the limits of the respective range, it will be shown in the display (see table).

Level limits for level evaluation – level in dB(µV)

	Level reduction	too small	on limit	okay	on limit	too large
graphic display By bars						
PAL B/G	0 dB	≤57	58–60	61–77	78–80	≥81
FM	–4 dB	≤53	54–56	57–73	74–76	≥77
DVB-C 64 QAM	–10 dB	≤47	48–50	51–67	68–73	≥74
DVB-C 256 QAM	–4 dB	≤53	54–56	57–73	74–79	≥80

Operating

The operation of the **SPM 8** is carried out only with one key. For it this key has two basic functions:

1. Key shortly push (tipping)
2. Key long push (1 second)

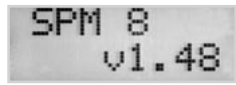
A special feature is the switch off. For it the key is to push longer (2 s) till the display shows the switch off. This can be made in any operation of the instrument.. It can be used as a kind of emergency exit at any male function .

For special functions, such as the programming of the channel lists, combinations of shortly and long pushing of the key are used. This kind of operation is easy to learn. The total operation procedure for measurements is graphic displayed on the page 6 and 7.

If a switched on instrument is not operated more than 2 minutes, it switch off automatic itself. The same happens, if the accumulator voltage is less than 5.5 V to protect the accumulator.

SWITCH ON

Push key shortly →



instrument designation
Software version
(only shortly)

Battery symbol
voltage
Charging condition
– Accu. full: ca. 7 V
– Accu. empty: 5.5 V

Push key shortly

ranges

instrument in operation
– display of the channel

SWITCH OFF

Push key longer (2 s)

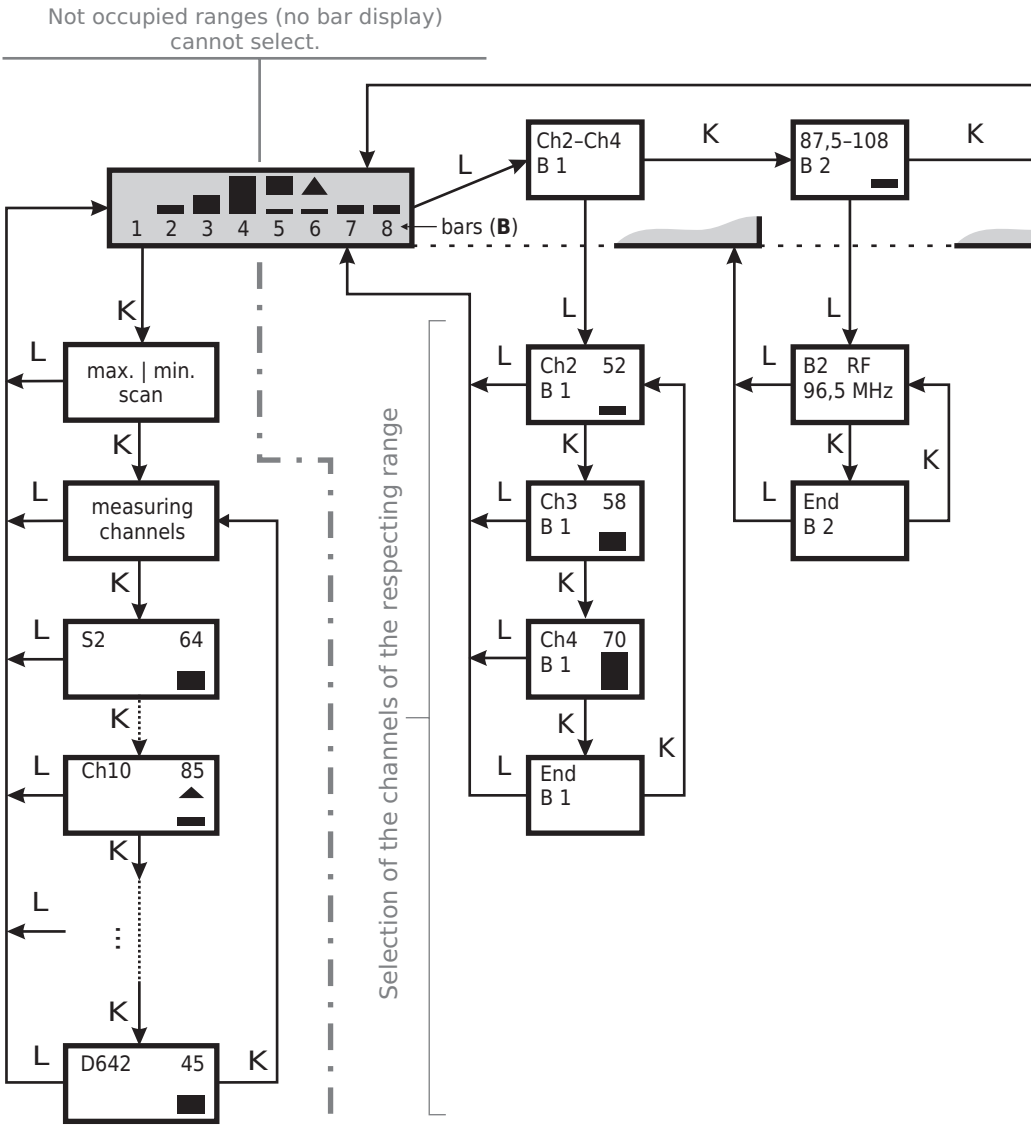
(Without operation automatically after 2 minutes)

decrease the accumulator voltage down to 5.8 V, blinks the level-display.

at 5.5 V the **SPM 8** switch off.

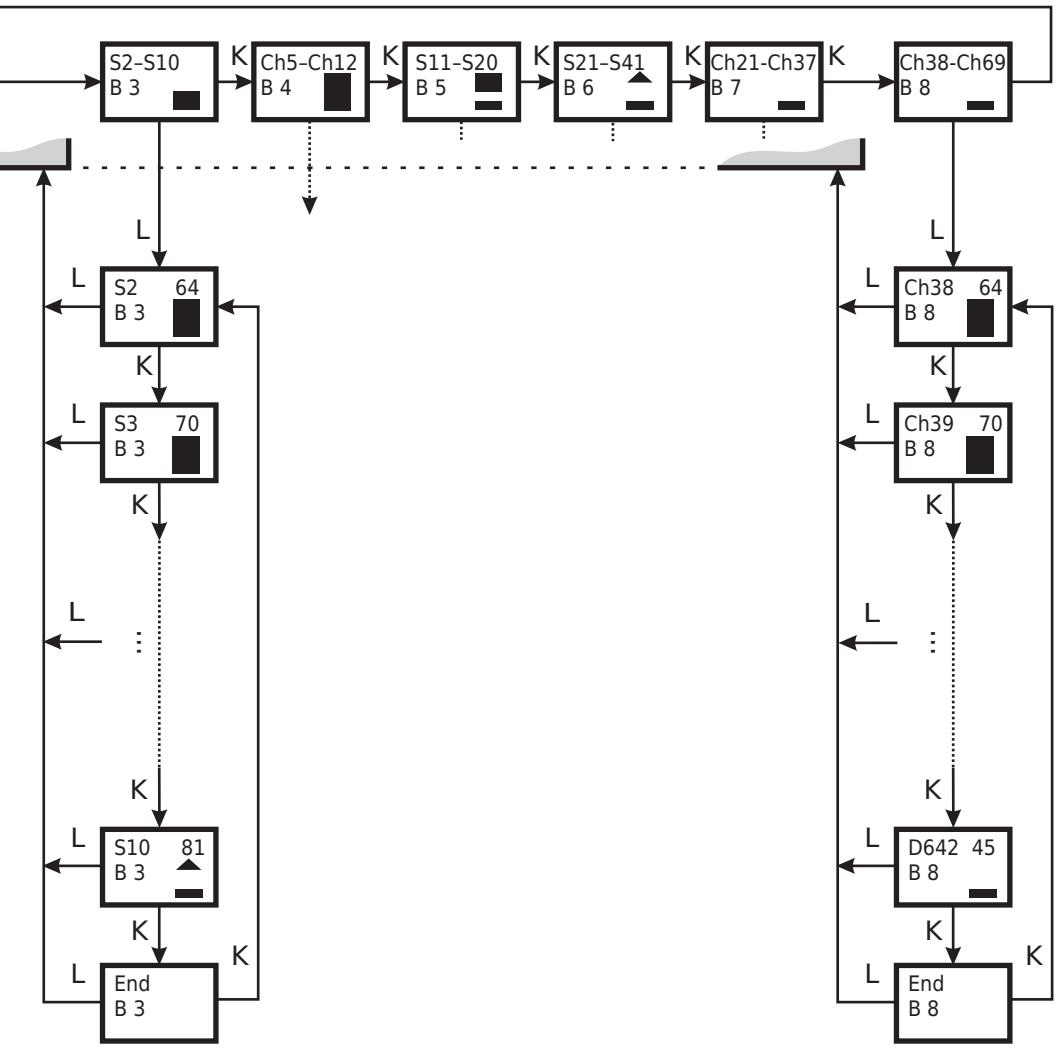
The further operating procedure are graphically displayed on the pages 6 and 7.

Operating scheme SPM 8 Version: **v1.48**



Switch on: key 2× shortly push
Switch off: key 2 s push

K = key shortly (<1 s) push
L = key long (>1 s) push



Storage inputs

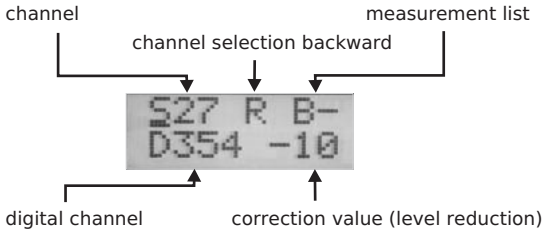
PROGRAMMING MODE SWITCH ON

The **SPM 8** switch on (1× key shortly push). The type of instrument and the software version are shortly displayed and immediately after that appears the accumulator display. Now wait until after about 8 seconds in the display »**AUS**« appears. In this moment push the key shortly and after that at once push long (2 s) till a channel display appears. You are now in the programming mode.

For this procedure you need some exercise. Don't worry, if it don't work at the first time.

CHANNEL MEMORY PROGRAMMING

In the programming mode are the necessary parameter for the measurement sequentially adjustable. These are: (see picture)



By shortly pushing of the key can be changed the respective value, under which the cursor is located. By long pushing the cursor is moved.
Thereby represent the single displays sequentially:

»**K**xx«, »**S**xx« – channel xx, special channel xx

»**R**« – single channel selection backward

»**––**« – channel is not assumed in a list (not applied)
»**B–**« – channel is applied in the menu of the ranges
»**–M**« – channel is applied in the menu of the measuring channels
»**BM**« – channel is applied in both menus

»**D**« – Is shown by a shortly pushing an additional number,
»**D346**« so it is the channel middle frequency and the channel is stores as a digital channel.

»**–10**« … »**0**« – correction value for digital channels
(Level reduction of -10 to 0 dB)

At selection of the next channel are the previously adjusted values stored.

Technical data

frequency range	10–900 MHz
resolution	50 kHz, measuring bandwidth 200 kHz
level measuring range	40–90 dB(µV)
accuracy	±2 dB (von −10 °C bis +50 °C)
storage places	8 for all channels in the preset channel range
scan function	Max./Min.-display for 100 programmable channels
RF input	F socket, 75 Ω
display	LCD illuminated, 2 × 8 characters, 5 mm high
power supply	NiMH accumulator 6 V/300 mAh
	or power supply 12–14 VDC
current consumption	75 mA
dimensions	120 mm × 60 mm × 25 mm
weight	130 g

Notice

Guarantee

State July 2006

For this instrument will be granted a service life (in following called guarantee) to following conditions:

- This guarantee is valid for new instruments purchased in Germany.
- New instruments and their components, which are defective because of production faults and/or material faults, are repaired from SAT-Kabel®.
- For wear parts, like accumulators, keyboards, housings, bags, connecting cables this guarantee is valid for 6 month from the purchasing date.
- The guarantee claim expires at matings by the purchaser or third persons.
- At defects, caused by improper handling or operating, by wrong installation or store, by improper connection or mounting, no guarantee is granted.
- For not justified demand of our service we charge for our service the usual payment for material, working hours and forwarding costs.
- Repairs are only made with filled service covering.

(Forms for service coverings and further information are found in the standard form contracts under: www.sat-kabel.de)

SAT-Kabel®
Satelliten- und Kabelfernsehanlagen/Industrievertretung GmbH
Telephone: +49 3724 6665-0
Telefax: +49 3724 6665-44
info@sat-kabel.de
www.sat-kabel.de