RwT-C

device version v1.26 or higher

Controller - Rückwegtester

Return path test controller
for the return path test with SPM 6R

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.

Contents

1. General

The *RWT-C* is the central controller for the return path testing system in connection with the *SPM 6R*. It receives the two return path signals sent from the *SPM 6R* and compares it with a reference value. The result it sends modulated by a forward frequency to the *SPM 6R* for evaluation and display.
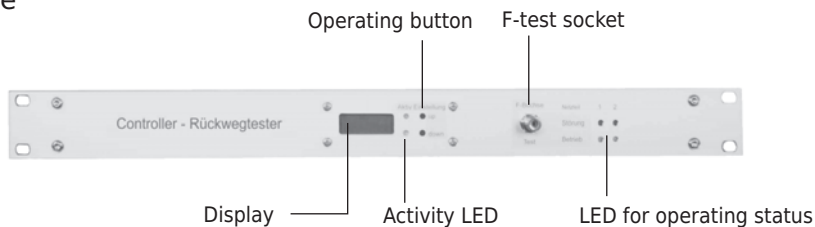
The device is designed as an independent unit for installation in 19-inch systems. For increased reliability the device is equipped with a redundant power supply.

2. Scope of delivery

1× Return path test controller *RwT-C*
1× Power cable
Operating instruction

3. Operating and functional elements

3.1 Front side

Operating button   F-test socket

Display — Activity LED   LED for operating status

3.2 Back side

F-socket   F-socket   Main Connection
BK-Out   RK-In

4. Preparations for the RF connection

The *RWT-C* is preset at the factory for the following parameters:

Forward direction (outgoing):	frequency	638 MHz
	attenuation	20 dB (display: –20 dB), corresponds to an output level of 90 dB(μV)
Backward direction (incoming):	reference level 75 dB(μV)	

These values – except the attenuation – should not be changed in normal circumstances. An adjustment possibility is provided technically.

When installing the RF connections, note the following:

1| The connection »BK-Out« outputs a forward signal in the UHF range. This signal is to feed so that its level is in the cable network 25 dB below the analog signal level (PAL).

2| The return path signal is to connected with the port »RK-In«. It is adjusted so that at a return path signal with planning/setting level the reference level of the *RwT-C* of 75 dB(µV) is reached – typically 100 dB(µV). Then would displayed in a test with the *SPM 6R* on a system outlet in the ideal case two times an attenuation of –25 dB and the LEDs light green for the proper function of the return path.

5. Installation and startup

The unit should be mounted in a 19 inch system **and to ground via the earth connection (at least 1.5 mm ^{2})**.

Only now, with two mains connection cables the *RwT-C* is to put into operation. For control both power LED lights green on the front page. At the same time turns on the display backlight. It will turn itself off when no operation is done for 4 minutes on the device.

In case of failure of one of the two internal power supplies whose fault LED lights up red. The device is further operable for now, but shall be repaired soon.
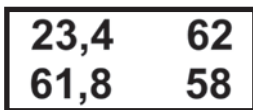
6. Operation of the RwT-C

After start in the display the device version will be shown. (actual: v1.26, 2013-01-10

When a *SPM 6R* is connected to the CATV system, the two flashing LEDs indicate the existing telemetry link (activity indicator).

A short press to the one of the two buttons switches the device to display of the return path test signals. The corresponding level is displayed. Repeated short press one of the button switches back to the first display.

From this display you passes by a long press (>2 s) of the two buttons into the setup mode (see next section).

7. Settings of the RwT-C

The setting mode is to be used only at an absolute necessity.

638 MHz
– 20 dB

A long pressing of both buttons (2 s) during the frequency display (see operation) you can reach in the first setting mode. It can be adjusted by changing the attenuation with the buttons »up« or »down« the output level for the telemetry frequency. (0–30 dB attenuation)

638 MHz
Eingabe

By again longer (2 s) pressing of both buttons you can reach to the frequency input and it can then be changed with the buttons »up« or »down« the telemetry frequency in the range 590–700 MHz in 1 MHz steps.

Rw-Pegel
75,0 dBμV

By a repeated longer (2 s) press of both buttons now, the return path reference level of the *RwT-C* can be adjusted between 50 and 80 dB(μV).

WARNING! This value should be changed only in exceptional cases! An amendment also requires an adjustment of the RF level to the connection »RK-In«. Thereby caused errors lead to a complete failure measurements throughout the cable network.

By a repeated longer (2 s) press of both buttons you get into the display mode of the return path test signals

Note

The display backlight generally turns off automatically after 4 minutes without operation

8. Technical data

Telemetry frequency (downstream)

Transmitting frequency	590–700 MHz in 1-MHz-steps adjustable, FM-modulated, deviation 40 kHz, data 10 kHz delivery status 638 MHz
Output level	typ. 75–105 dB(µV), adjustable in 1-dB-steps with internal, programmable attenuator (max. 30 dB)

Return path receiver (upstream)

2 fixed frequencies	23.4 MHz and 61.8 MHz
bandwidth	5 kHz, AM demodulation
Input level	10–80 dB(µV)
reference level	75 dB(µV), delivery status (adjustable 50–80 dB(µV))
Power supply	230 V$_{AC}$

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***