



ROHDE & SCHWARZ

Test and Measurement
Division

Operating Manual

MICROWAVE SIGNAL GENERATOR

SMR20

1104.0002.20

SMR27

1104.0002.27

SMR30

1104.0002.30

SMR40

1104.0002.40

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Tabbed Divider Overview

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Certificate of Quality

EC Certificate of Conformity

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Short Tutorial About How to Use the Manual

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Safety Instructions

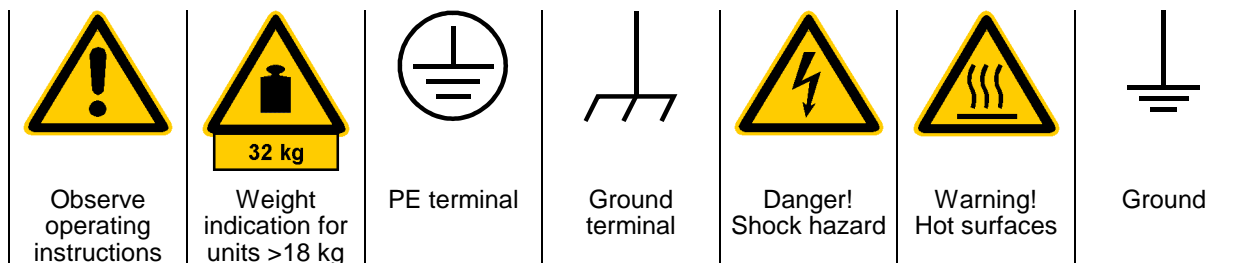
This unit has been designed and tested in accordance with the EC Certificate of Conformity and has left the manufacturer's plant in a condition fully complying with safety standards.

To maintain this condition and to ensure safe operation, the user must observe all instructions and warnings given in this operating manual.

1. The unit may be used only in the operating conditions and positions specified by the manufacturer. Unless otherwise agreed, the following applies to R&S products:
Pollution severity 2, overvoltage category 2, IP degree of protection 2X, altitude max. 2000 m.
The unit may be operated only from supply networks fused with max. 16 A.
 2. For measurements in circuits with voltages $V_{rms} > 30 V$, suitable measures should be taken to avoid any hazards.
(using, for example, appropriate measuring equipment, fusing, current limiting, electrical separation, insulation).
 3. If the unit is to be permanently wired, the PE terminal of the unit must first be connected to the PE conductor on site before any other connections are made (installation and cabling of the unit to be performed only by qualified technical personnel).
 4. For permanently installed units without built-in fuses, circuit breakers or similar protective devices, the supply circuit must be fused such as to provide suitable protection for the users and equipment.
 5. Prior to switching on the unit, it must be ensured that the nominal voltage set on the unit matches the nominal voltage of the AC supply network.
If a different voltage is to be set, the power fuse of the unit may have to be changed accordingly.
 6. Units of protection class I with disconnectible AC supply cable and appliance connector may be operated only from a power socket with earthing contact and with the PE conductor connected.
 7. It is not permissible to interrupt the PE conductor intentionally, neither in the incoming cable nor on the unit itself as this may cause the unit to become electrically hazardous.
- Any extension lines or multiple socket outlets used must be checked for compliance with relevant safety standards at regular intervals.

 8. If the unit has no power switch for disconnection from the AC supply, the plug of the connecting cable is regarded as the disconnecting device. In such cases it must be ensured that the power plug is easily reachable and accessible at all times (length of connecting cable approx. 2 m). Functional or electronic switches are not suitable for providing disconnection from the AC supply.
If units without power switches are integrated in racks or systems, a disconnecting device must be provided at system level.
 9. Applicable local or national safety regulations and rules for the prevention of accidents must be observed in all work performed.
Prior to performing any work on the unit or opening the unit, the latter must be disconnected from the supply network.
Any adjustments, replacements of parts, maintenance or repair may be carried out only by authorized R&S technical personnel.
Only original parts may be used for replacing parts relevant to safety (eg power switches, power transformers, fuses). A safety test must be performed after each replacement of parts relevant to safety.
(visual inspection, PE conductor test, insulation-resistance, leakage-current measurement, functional test).
 10. Ensure that the connections with information technology equipment comply with IEC950/EN60950.
 11. Equipment returned or sent in for repair must be packed in the original packing or in packing with electrostatic protection.
 12. Any additional safety instructions given in this manual are also to be observed.

Safety-related symbols used on equipment and documentation from R&S:





Certificate No.: 99042

This is to certify that:

Equipment type	Order No.	Designation
SMR20	1104.0002.20	Signal Generator 1 to 20 GHz
SMR40	1104.0002.40	Signal Generator 1 to 40 GHz
SMR-B1	1104.5485.02	Option: Reference Oscillator OCXO
SMR-B5	1104.3501.02	Option: AM/FM/SCAN Modulator
SMR-B11	1104.4250.02	Option: Frequency Extension
SMR-B15	1104.4989.02	Option: RF Attenuator 20 GHz
SMR-B17	1104.5233.02	Option: RF Attenuator 40 GHz
SMR-B19	1104.6281.02	Option: Rear Connectors
SMR-B20	1104.6381.02	Option: Rear Connectors

complies with the provisions of the Directive of the Council of the European Union on the approximation of the laws of the Member States

- relating to electrical equipment for use within defined voltage limits
(73/23/EEC revised by 93/68/EEC)
- relating to electromagnetic compatibility
(89/336/EEC revised by 91/263/EEC, 92/31/EEC, 93/68/EEC)

Conformity is proven by compliance with the following standards:

EN61010-1 : 1993 + A2 : 1995
EN50081-1 : 1992
EN50082-2 : 1995

Affixing the EC conformity mark as from 1999

ROHDE & SCHWARZ GmbH & Co. KG
Mühldorfstr. 15, D-81671 München

Munich, 1999-07-14

Central Quality Management FS-QZ / Becker

General Overview of Manuals

Operating Manual for Microwave Signal Generator SMR

This operating manual provides you with all the information necessary for putting into operation, manual and remote control as well as repair of Microwave Signal Generator SMR and also contains specifications of the instrument and available options.

The following models are described in this manual:

SMR20	1 GHz to 20 GHz (10 MHz to 20 GHz with Option SMR-B11)
SMR27	1 GHz to 27 GHz (10 MHz to 27 GHz with Option SMR-B11)
SMR30	1 GHz to 30 GHz (10 MHz to 30 GHz with Option SMR-B11)
SMR40	1 GHz to 40 GHz (10 MHz to 40 GHz with Option SMR-B11)

The contents of the chapters are as follows:

Data sheet	informs you about guaranteed specifications relating to functions and characteristics of the instrument and its options.
Chapter 1	contains all information about putting into operation (unpacking, connection to AC supply, switching on and off), functional testing and installation of the instrument, preset settings and views of the front and rear panel showing the controls and connectors needed for operation.
Chapter 2	presents a brief introduction and typical settings to users working with the SMR for the first time.
Chapter 3	describes manual control of the microwave signal generator, for example calling up of menus, selection and editing of parameters, use of the list editor and the SAVE/RECALL function. This chapter also contains an overview of menus showing the functions available for the instruments and its options.
Chapter 4	describes the functions of the instrument and its options which can be activated manually via menus or by remote control (frequency and level setting, analog and digital modulation, sweep, list mode, memory sequence and general functions not directly related to signal generation).
Chapter 5	provides basic information on remote control, for example on the IEC/IEEE bus, RS232C interface, interface and device messages, command processing, status reporting system, etc.
Chapter 6	contains for each command system an overview and description of all commands available for the instrument and its options as well as an alphabetical list of all commands.
Chapter 7	includes programming examples for remote control.
Chapter 8	gives information on preventive maintenance, for example for keeping the exterior clean, storage, etc.
Chapter 9	contains the SCPI-specific and device-specific error messages displayed on the instrument.
Chapter 10	includes the index.

Service Manual Instrument for Microwave Signal Generator SMR

The service manual instrument for Microwave Signal Generator SMR provides information on the checking of rated characteristics, manual and electronic adjustment, repair (fault diagnosis, module replacement), and the fitting of options. Moreover, it includes documentation such as spare parts list, basic circuit diagram, block diagram, etc.