

# R&S® MC40

## MICROWAVE CONVERTER

Frequency range extension from 18 GHz to 40 GHz  
for high-density signal environments



Product Brochure  
Version 05.00

**ROHDE & SCHWARZ**

Make ideas real



# AT A GLANCE

The R&S®MC40 extends the frequency range of modern 18 GHz to 40 GHz monitoring systems. With a 2 GHz conversion bandwidth, it is a future-ready investment to meet the requirements of tomorrow's signal environments. The small form factor and the open SCPI interface support easy integration into any existing system.

## Key facts

- ▶ Conversion frequency range from 18 GHz to 40 GHz
- ▶ 2 GHz conversion bandwidth
- ▶ Optimum RF performance through extensive preselection filters, offering a noise figure of 14 dB with an SOI point of more than 60 dBm
- ▶ Exceptionally low phase noise of less than -94 dBc
- ▶ Compact size of only ½ 19" (3 HU)
- ▶ Plug & play capability with R&S®ESMD, R&S®ESME, R&S®DDF255, R&S®DDF260 and R&S®WPU500

## Exceptional RF performance for any signal environment

### Conversion frequency range from 18 GHz to 40 GHz and a dedicated bypass mode for frequencies below 18 GHz

The R&S®MC40 supplements the R&S®ESMD and R&S®ESME wideband monitoring receivers, the R&S®DDF255 and R&S®DDF260 digital direction finders and the R&S®WPU500 wideband processing unit to perform signal interception, radio detection and spectrum monitoring tasks in the microwave frequency range. Frequencies of 18 GHz to 40 GHz are converted to an alternating center frequency between 8 GHz and 10 GHz.

### Superheterodyne concept with extensive preselection

In contrast to a block converter, the R&S®MC40 is designed to meet the challenge of the microwave frequency range: maintaining sensitivity when facing many highly dynamic signals in parallel. The superheterodyne receiver architecture, supported by dedicated suboctave preselection filters improves the receiving parameters tremendously. This concept offers a noise figure of only 14 dB while maintaining high linearity (SOI of more than 60 dBm).

### 2 GHz conversion bandwidth and low synthesizer settling time

When used for spectrum scanning operations, the R&S®MC40 is controlled by the downstream receiver. With its wide instantaneous conversion bandwidth of 2 GHz, the R&S®MC40 only needs a few tuning steps to cover the full frequency range. Even when retuning is necessary, the low synthesizer settling time of less than 0.5 ms enables fast scans that can keep up with the receiver.

### Adjustable IF gain to compensate cable attenuation

The frequency-dependent attenuation of the cable connecting the R&S®MC40 to the receiver can be stored and compensated to maintain accurate level measurements after conversion.

## Easy integration into systems

### Plug & play with Rohde & Schwarz products

When operated with Rohde & Schwarz receivers and direction finders, the R&S®MC40 provides built-in plug & play capability via a serial RS-485 link for easy installation and control.

### Fully adjustable via open SCPI interface (LAN and serial)

In a third-party system, the R&S®MC40 can be controlled with simple standard commands for programmable instruments (SCPI) commands that can be transmitted via RS-232 serial cables or an Ethernet 1000BASE-T LAN interface. For first time installation or configuration, an easy-to-use, window-based GUI is provided.

### TTL interface for external preamplifiers or antenna switch matrix

Built-in AUX interfaces are provided to directly control external preamplifiers, external antenna switch matrices and relays and to supply power to these devices. Since the interfaces are implemented in TTL technology, the R&S®MC40 can optimally handle the fast scanning speeds needed in a dynamic signal environment.

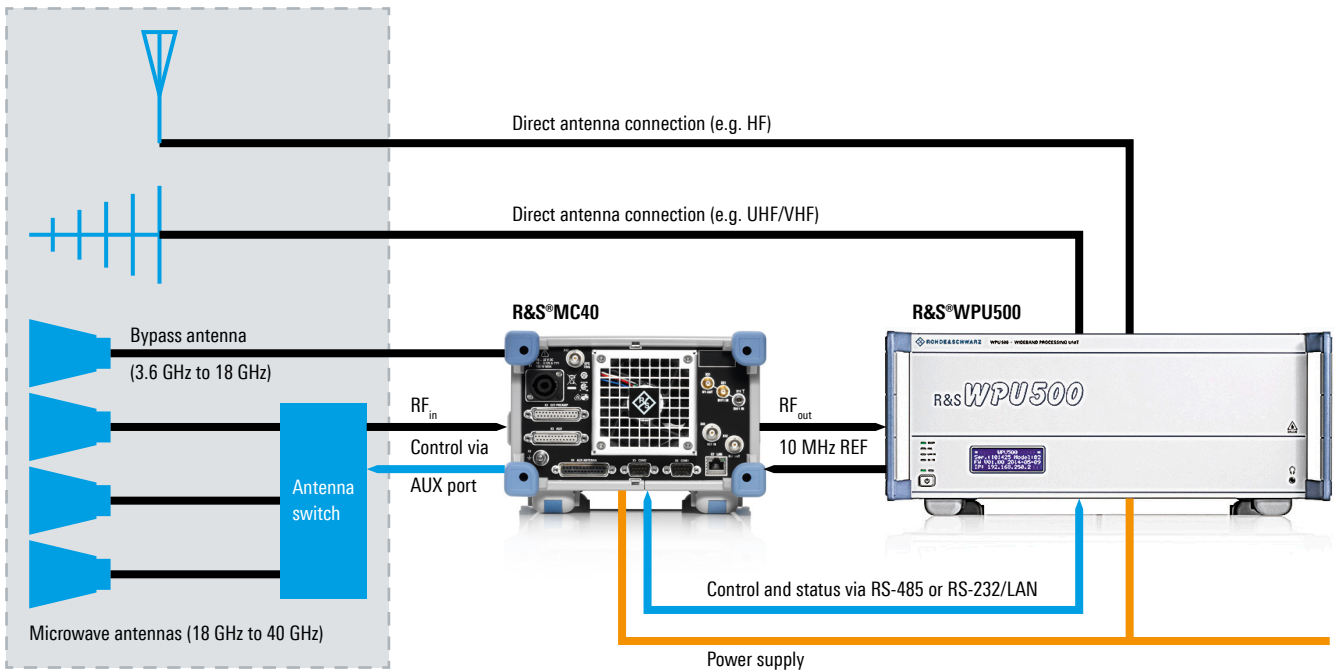
### Built-in self-test to ensure operational readiness

The R&S®MC40 continuously monitors all relevant test points and provides them to the overlying system via LAN. A built-in test generator provides information for calibration and cable compensation.

### Compact size of only ½ 19" (3 HU)

Due to its compact size of only ½ 19" (3 HU), it can be integrated into weatherproof housing (availability upon request) that can be installed close to the antenna network. This tremendously reduces the attenuation caused by long RF cables. For mobile and vehicular applications, the R&S®MC40 power supply supports DC sources.

## R&S®MC40 interfaces (shown with example antenna setup for the R&S®WPU500)



# ORDERING INFORMATION

Designation	Type	Order No.
Microwave converter up to 40 GHz (base unit including accessories such as power cord, serial cable and manual)	R&S®MC40	4098.6008.02
<b>Accessories</b>		
19" rack adapter (2 × R&S®MC40 side by side)	R&S®ZZA-T04	1109.4187.00
19" rack adapter (1 × R&S®MC40 + 1 × blind plate)	R&S®ZZA-T02	1109.4164.00
Control board for receivers (required for R&S®ESMD/R&S®ESME without DF option)	R&S®MC40-CB	4098.9807.02
RF cable (R&S®MC40 to receiver, 3.5 mm (m) to 3.5 mm (m), length: 1520 mm)	R&S®GS ZV-Z193	1306.4520.61
Other cables available on request.		

Service options		
Extended warranty, one year	R&S®WE1	Please contact your local Rohde & Schwarz sales office.
Extended warranty, two years	R&S®WE2	
Extended warranty, three years	R&S®WE3	
Extended warranty, four years	R&S®WE4	

## Service that adds value

- ▶ Worldwide
- ▶ Local und personalized
- ▶ Customized and flexible
- ▶ Uncompromising quality
- ▶ Long-term dependability

## Rohde & Schwarz

The Rohde&Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

[www.rohde-schwarz.com](http://www.rohde-schwarz.com)

## Sustainable product design

- ▶ Environmental compatibility and eco-footprint
- ▶ Energy efficiency and low emissions
- ▶ Longevity and optimized total cost of ownership

Certified Quality Management  
**ISO 9001**

Certified Environmental Management  
**ISO 14001**

## Rohde & Schwarz training

[www.training.rohde-schwarz.com](http://www.training.rohde-schwarz.com)

## Rohde & Schwarz customer support

[www.rohde-schwarz.com/support](http://www.rohde-schwarz.com/support)

