

# R&S®MSR4

## MULTIPURPOSE SATELLITE RECEIVER

### Enabling software defined radio applications

The R&S®MSR4 multipurpose satellite receiver is a multichannel receiver optimized for software defined radio applications in satellite communications and monitoring. The R&S®MSR4 receives signals in the L band between 500 MHz and 3 GHz on four tunable channels and provides an on-board recording function. In addition, the receiver's two transmit channels can use data from internal storage and external sources to generate RF signals from 900 MHz to 2.5 GHz. The small form factor allows smooth integration in various scenarios. The R&S®MSR4 comes with a web based graphical user interface, which simplifies operation.

#### Software defined radio application

The R&S®MSR4 is ideal for a wide range of applications thanks to its adaptable integrated system-on-chip (SoC) radio platform. In the future, the receiver will be expanded for even more applications.

#### I/Q streamer/record and replay

A basic function of the R&S®MSR4 is simultaneous broadband streaming from its four receive lines, each with 200 MHz bandwidth, using four 10 Gbit interfaces. A 100 Gbit interface is also included for future use. The integrated 1 Tbyte SSD storage enables I/Q data to be recorded and replayed without any additional hardware.

#### Carrier defragmentation/polyphase filter

A selection of interesting carriers from four receive channels, each with 200 MHz bandwidth, can be queued into one transmit channel with a smaller optimized bandwidth for the next signal processing stage.

#### Monitoring spectrum and carriers

In combination with the R&S®GSACSM software suite, the R&S®MSR4 is the perfect hardware platform for spectrum monitoring, carrier monitoring and classification of satcom signals for up to four channels. In a scalable client/server architecture, R&S®GSACSM allows remote spectrum analysis with systems located anywhere worldwide.



Product Flyer  
Version 01.00

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## Antenna combiner (four to one)

The R&S®MSR4 can act as an antenna combiner, receiving signals from up to four smaller antennas and combining them into one signal with an improved SNR. The satcom signal quality is comparable with signals received from much larger antenna systems (available in the future).

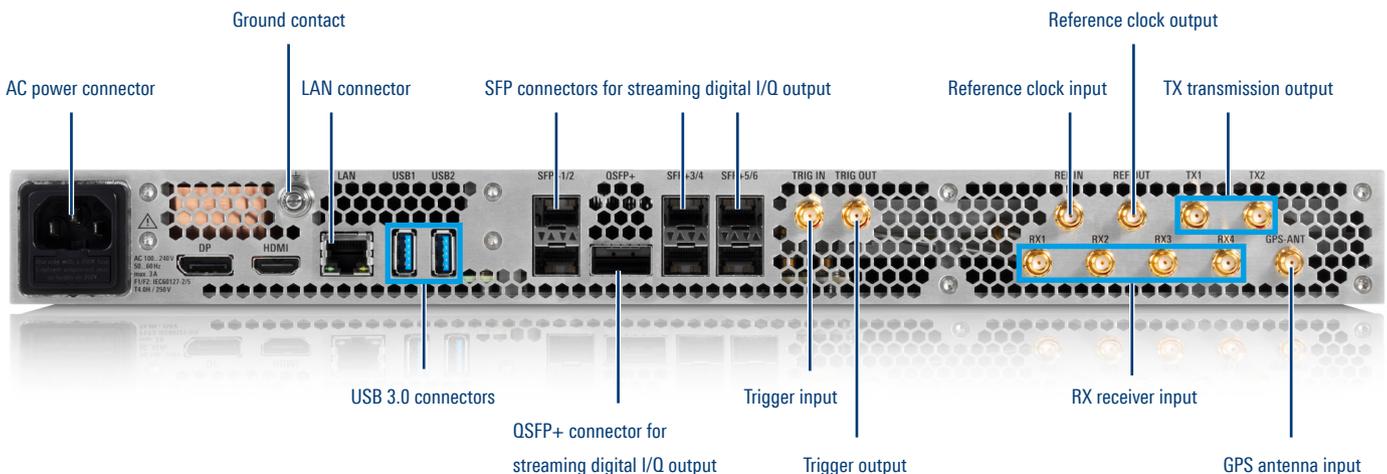
## Carrier-in-carrier separation

Carrier-in-carrier (CiC) technology is commonly used in satcom for e.g. VSAT and SCPC to save valuable bandwidth. Separating them again with no prior knowledge of the combined signals is challenging, but the R&S®MSR4 can perform CiC separation in real time (available in 2022). This function is also useful for interference hunting applications.

## Key facts

- ▶ Four receive channels, tunable from 0.5 GHz to 3 GHz
- ▶ Two transmit channels, tunable from 0.9 GHz to 2.5 GHz
- ▶ 200 MHz bandwidth for receive and transmit channels
- ▶ Up to 200 MHz wide I/Q streaming from each receive channel
- ▶ Dedicated 10 Gbit interfaces for each receive channel and a 100 Gbit interface for future use
- ▶ Integrated 1 Tbyte SSD for signal recording and replay over one of the transmit channels
- ▶ GNSS and external system synchronization
- ▶ Easy to operate via WebUI or via an application programming interface (API)
- ▶ Trigger input and output event control (available soon)
- ▶ GNU radio support (available soon)
- ▶ Compact and ideal as a standalone solution or integrated into system solutions – a 1 RU, 19" wide device that weighs only 7 kg

## Back panel



## Specifications in brief

Frequency range	RX1 to RX4 receive channels	500 MHz to 3 GHz
	TX1 to TX2 transmit channels	900 MHz to 2.5 GHz
Real-time bandwidth	RX1 to RX4 receive channels	200 MHz
	TX1 to TX2 transmit channels	200 MHz
A/D converter resolution	RX1 to RX4 receive channels	12 bit
D/A converter resolution	TX1 to TX2 transmit channels	14 bit
I/Q streaming speed	10G streaming interfaces for RX1 to RX4	up to 10 Gbit/s
	100G streaming interface for RX1 to RX4	up to 100 Gbit/s
Dimensions	W × H × D	465 mm (19") × 50 mm (1 RU) × 550 mm (18.3 in × 19.7 in × 21.7 in)
Weight		7 kg (15.4 lb)

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