

R&S®MMRS Modular Multirole Radio System

Radiocommunications
platform for multiple
applications



R&S®MMRS Modular Multirole Radio System At a glance

The R&S®MMRS is a modularly designed, flexible radiocommunications system based on the R&S®M3TR. Owing to its modularity, it can be adapted to various mission requirements.

In today's deployment scenarios, armed forces are confronted with rapidly changing situations and constantly changing requirements on personnel and equipment in difficult terrain. To meet this challenge, a mobile, flexible and powerful radiocommunications system is indispensable.

The R&S®MMRS is an easy-to-transport, space-saving and adaptable radiocommunications system that satisfies a wide range of requirements. Its multirole capability to operate in VHF/UHF and HF underscores its flexibility.

The R&S®MMRS meets the essential requirements for a military field ATC system, a relay station, a radio station with up to two radio circuits simultaneously, or for company or battalion field headquarters.

All on the basis of the R&S®M3TR in rugged 19" boxes that are easy to transport.

Key facts

- ▮ Independent of existing infrastructure
- ▮ Scalable
- ▮ Modular
- ▮ Multirole-capable
- ▮ Operator-friendly
- ▮ Simple and fast to set up
- ▮ Easy to deploy
- ▮ Ruggedized for field use under harsh conditions



R&S[®]MMRS

Modular Multirole Radio System

Benefits and key features

System overview

- ▮ Different solutions for different needs
- ▮ Flexible system for various situations
- ▮ Fast setup for semi-mobile deployment

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Deployment scenarios for the R&S[®]MMRS

- ▮ Field headquarters
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- ▮ Radio station
- ▮ Relay

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Modular system concept

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System and accessories tailored to requirements

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- ▮ Specially ruggedized multicables
- ▮ Suitable antennas for all possible frequency ranges
- ▮ Headsets with active noise reduction

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Transport and operation

- ▮ Remote operation
- ▮ Operation in vehicles and buildings
- ▮ Transportability
- ▮ Ruggedized to face harsh conditions

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System overview

The R&S®MMRS is a radio system based on the radio rackbox and the intercom box. These units can be combined and expanded with other modules to suit the individual application or mission.

Different solutions for different needs

Weight plays a major role in today's deployment planning. The modular design of the R&S®MMRS makes it possible to adapt the system to each mission and thus save logistical resources.

Flexible system for various situations

The R&S®MMRS is flexible due to its low weight, easy transportability, and the fact that neither infrastructure nor a vehicle is needed for operation.

Fast setup for semi-mobile use

Due to its specially designed multicable, the R&S®MMRS core system can be set up and dismantled in just a few quick steps.

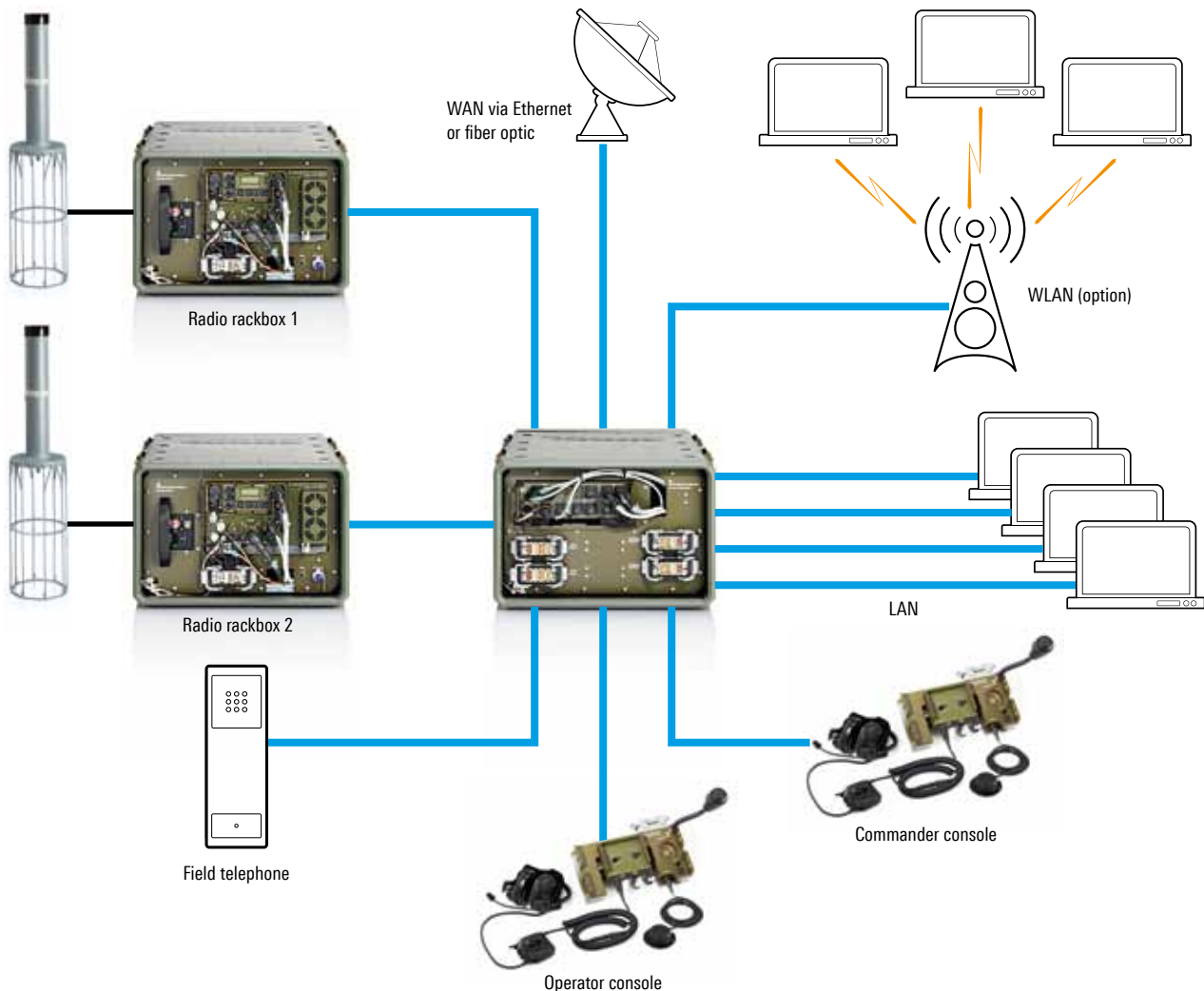
Set-up scenarios

	Intercom box	Radio rackbox 1	Radio rackbox 2
Field HQ	●	●	●
Field ATC	○	●	○
Relay	○	●	●
Gateway	●	●	●
Onboard communications	–	●	–
Checkpoint	○	●	○

Legend

- = required
- = optional
- = not required

Overview



Deployment scenarios for the R&S®MMRS

Today's armies must be able to handle a wide variety of tasks. The R&S®MMRS is a flexible radiocommunications system that meets this requirement.



The R&S®MMRS can be used in many ways:

Field headquarters

The R&S®MMRS makes it possible to set up field headquarters at the company or battalion level with alternatives for IP-based LAN, WLAN (purchase option) and WAN connections; see intercom box for details.

Field ATC

The R&S®MMRS system is a mobile air traffic control (ATC) system that allows military forces to establish mobile airstrips in a very short period of time to obtain a logistical or combat advantage wherever needed.

Radio station

In its basic version, the R&S®MMRS is a radio station that is independent, quick to set up, and designed for land-, sea- or air-based operations.

Relay

Through simple configuration, the R&S®MMRS can fulfill the function of a highly mobile relay station and thus increase the radius of operation in the areas of deployment.

Onboard communications

Since the human machine interface (HMI) can be operated remotely, the radio rackbox can be stowed in the storage space of a vehicle, and the radio can be operated from the driver's cabin by using the remote HMI.

The R&S®MMRS can also be used on board ships with the required power supply.

Checkpoint

When a checkpoint is set up and operated, the radio rackbox can be deployed on the vehicle or in remote operation for radiocommunications.

Modular system concept

The R&S®MMRS is based on several modules, which allows application-specific system configuration to meet different needs using optimized equipment.

Radio rackbox

The R&S®MMRS is based on the multiband, multimode and multirole R&S®MR3001U VHF/UHF tactical radio. To increase the transmission output power up to 50 W, the R&S®M3TR is installed in the compact R&S®VT3050C amplifier. Together with a power supply unit supporting AC and/or DC input and a rugged 19" box, the R&S®KG3050 radio rackbox is set up for VHF/UHF frequencies.

For HF frequencies, a similar system with the R&S®VT3150C (150 W, option) is available.

Intercom box

To provide the operator with easy and flexible remote operation and control of the radio rackboxes, an intercom system is available. The central unit of the intercom system is installed in a separate, rugged 19" box and forms the intercom box.

The intercom box provides the following:

- Interface for two (optionally up to four) radio rackboxes
- Router for up to four computers in LAN
- Option for WLAN
- WAN via Ethernet or fiber-optic connection for backbone
- One connection for a field telephone
- Connection for fill gun device to upload missions centrally to all radios

R&S®KG3050 radio rackbox.



R&S®KG3051 intercom box.



Operator console

When operating and controlling the radio system, the operator works with easy-to-use consoles. There are two different types of consoles. The operator console for a normal operator, and the supervisor console for the commander.

Both consoles have an intercom group selector to change between different preconfigured audio channels.

In addition to the operator console features, the supervisor console has a mode selector to change between different preconfigured intercom and radio modes. By selecting a specific mode, the commander can, for example, disable the operator console for security reasons and take exclusive control of all connected radio rackboxes. For remote-control purposes, the supervisor console offers two slots for the dismantled front panels of the radios.

Laptop/tablet

For the transmission of files, a data application such as R&S®Postman III is needed with which e-mails containing attachments can be sent. For this purpose, a tablet PC or a laptop can be connected to the intercom or to the radio.

Supervisor console with dismantled radio front panels.



Operator console.



System and accessories tailored to requirements

Power supply

For flexibility during a mission, the R&S®MMRS can be supplied with power in various ways. The requirements are 100 V to 240 V AC or 24 V DC.

Power generators, vehicular power supplies or electricity from public sources may be used. For each radio rackbox, a separate power source is needed. The intercom box power is supplied by one of the radio rackboxes.

Specially developed multicables

To allow the system to be put into operation quickly and easily, Rohde&Schwarz has developed special ruggedized multicables (length 2 m or 10 m (78.75 in or 393.7 in)) that integrate all the necessary connections between the radio rackbox, the intercom box and the user terminals into one cable connection.

The core system can thus be set up in just three steps:

- Connect radio rackboxes to the intercom box
- Connect antennas to the radio rackboxes
- Connect the system to the power supply

Suitable antennas

Rohde&Schwarz provides matching antennas for all possible frequency ranges to fulfill customer-specific requirements. In addition to the antennas, suitable accessories are also available, e.g. antenna masts and bags.

Headsets

For the mission-proven use of the R&S®MMRS, Rohde&Schwarz provides a headset with active noise reduction (ANR), which enables reliable communications even under noisy environmental conditions.

Transport and operation



Remote operation

In many system solutions for such radio stations, vehicles are bound to the radio station. Since the R&S®MMRS in remote operation with an external power supply is not tied to any vehicle, the vehicle can be used for other purposes.

Operation in vehicles and buildings

Of course, the system can also be used inside vehicles or buildings in order to utilize the existing infrastructure.

Transportability

For transport by land, air or sea, the 19" boxes are easy to load and save space. The low weight of the radio rackbox (44 kg/97 lb) and the intercom box (30 kg/66.2 lb) makes it easy to manually transport the system over a short distance.

Outer dimensions

Rackbox:

351 mm × 534 mm × 710 mm
(13.82 in × 21 in × 27.95 in)

Operator console:

335 mm × 170 mm × 50 mm (78 mm with handle)
(13.19 in × 6.7 in × 1.97 in) (3.07 in with handle)

Supervisor console:

445 mm × 170 mm × 50 mm (78 mm with handle)
(17.52 in × 6.7 in × 1.97 in) (3.07 in with handle)

Ruggedized to face harsh conditions

Today's deployment scenarios and their environmental conditions place high demands on personnel and material. The R&S®MMRS is designed for use in harsh conditions.

Ordering information

Designation	Type	Order No.
Radio Rackbox ¹⁾	R&S®KG3050	Please contact your local Rohde & Schwarz office.
Intercom Box	R&S®KG3051	
Supervisor Console	R&S®KK3052	
Operator Console	R&S®KK3052	
Rackbox Multicable Type 1, length 2 m (78.75 in)	R&S®KG3050-Z1	
Rackbox Multicable Type 2, length 10 m (393.7 in)	R&S®KG3050-Z2	

¹⁾ Lowpass filter and bandpass filter to be ordered separately according to customer requirements.

Your local Rohde & Schwarz expert will help you determine the optimum solution for your requirements. To find your nearest Rohde & Schwarz representative, visit www.sales.rohde-schwarz.com

Service you can rely on

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

About Rohde & Schwarz

Rohde & Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established more than 75 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

Environmental commitment

- | Energy-efficient products
- | Continuous improvement in environmental sustainability
- | ISO 14001-certified environmental management system

Certified Quality System
ISO 9001

Certified Quality System
EN 9100

Certified Quality System
AQAP-2110

Certified Quality System
EN 9110

Rohde & Schwarz GmbH & Co. KG

www.rohde-schwarz.com

Regional contact

- | Europe, Africa, Middle East
+49 89 4129 123 45
customersupport@rohde-schwarz.com
- | North America
1 888 TEST RSA (1 888 837 87 72)
customer.support@rsa.rohde-schwarz.com
- | Latin America
+1 410 910 79 88
customersupport.la@rohde-schwarz.com
- | Asia/Pacific
+65 65 13 04 88
customersupport.asia@rohde-schwarz.com

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