



## Advanced HF/VHF Tactical Radio R&S MR3000H

The R&S MR3000H belongs to a new family of high-performance digital radios covering the HF and VHF/FM band in a single unit. Thanks to different high-speed data modes and protocols as well as different antijam modes for HF and VHF/FM, it perfectly integrates into tactical communication networks.

The radio is software-configurable and reprogrammable including pre planned product improvement (P<sup>3</sup>I).

All members of the R&S M3TR family are based on one mechanical platform, with a common logistic concept and one man machine interface (MMI).

### Features

- ◆ Multiband capability (1.5 MHz to 512 MHz with external devices)
- ◆ Multiwaveform capability
- ◆ High data rate up to 64 kbit/s for data and video
- ◆ Software-configurable and upgradeable (P<sup>3</sup>I)
- ◆ Selective links in one net
- ◆ Low volume/weight
- ◆ Power saving mode
- ◆ Integrated GPS and position report
- ◆ Removable front panel for flexible use and integration
- ◆ User-friendly MMI



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## General specifications

<b>Frequency range</b>	TX: 1.5 MHz to 108 MHz RX: (100 kHz), 1.5 MHz to 512 MHz
<b>Channel spacing</b>	HF VHF/FM
<b>Frequency stability</b>	1 Hz
<b>Presets</b>	6.25 kHz, 8.33 kHz, 12.5 kHz, 25 kHz standard: $\pm 0.5$ ppm
<b>Modulation</b>	100 (10 available on rotary switch) J3E (USB, LSB), A3E (AM), H3E (AME), F1B/F1D (FSK), A1A (CW), F3E (FM) SSB/FM/AM, frequency hopping (VHF/ FM), frequency hopping (HF), clear voice/data transmission (FF mode), secure voice/data transmission (FH mode, DFF mode), test (BITE), remote control, GPS mode (time, position), erase
<b>Operating modes</b>	
<b>Antenna tuning</b>	
HF	built-in, automatic, silent tuning
VHF	built-in matching filter
<b>Test (IBIT)</b>	module level; manually initiated BIT continuous monitoring
<b>HF transmitter specifications</b>	
RF output power	1 mW, 0.1 W, 0.2 W, 0.5 W, 1 W, 2 W, 5 W, 10 W, 20 W PEP, FM average, AM PEP
Power reduction protection	high VSWR, high temperature
Carrier suppression	>50 dB below PEP (J3E)
Sideband suppression	>50 dB below PEP
Intermodulation products	>36 dB below PEP
Harmonic suppression	>40 dB
<b>HF receiver specifications</b>	
Sensitivity (1.5 MHz to 30 MHz)	SSB: $-117$ dBm (0.3 $\mu$ V) for 10 dB (S+N)/N (2.4 kHz bandwidth)
Squelch	syllabic squelch, 150 Hz tone squelch, signal squelch, RSSI (relative signal strength indication)
<b>VHF/FM transmitter specifications</b>	
RF power output	1 mW, 0.1 W, 0.2 W, 0.5 W, 1 W, 2W, 5 W, 10 W, FM average, AM PEP
Power reduction protection	high VSWR, high temperature
Harmonics	$-60$ dBc
Spurious emission	$-70$ dBc
<b>VHF/FM receiver specifications</b>	
Sensitivity (30 MHz to 512 MHz)	FM: $-113$ dBm, 10 dB SINAD
<b>Power supply</b>	
Input voltage	14 V to 33 V DC 19 V to 33 V fully specified
<b>Fast data modes (optional)</b>	
HF modes (FF)	STANAG 4285 waveform up to 3600 bit/s STANAG 4539 waveform up to 12800 bit/s R&S proprietary waveform up to 64 kbit/s
VHF mode (FF)	
<b>Automatic link establishment (optional for HF)</b>	
Specifications	MIL-STD-188-141B, App. A

## Voice processor (R&S SECOM only)

Vocoder	
bitrate	HF: 1200 bit/s VHF: 4800 bit/s

## EPM (optional)

Frequency hopping modes	
HF	R&S SECOM-H
VHF/FM	R&S SECOM-V
Encryption	R&S SECOM embedded voice/data encryption

## Environmental conditions

Temperature range (MIL-STD-810E methods 501.3 and 502.3)	
Operational	$-40^{\circ}\text{C}$ to $+70^{\circ}\text{C}$
Fully specified	$-25^{\circ}\text{C}$ to $+55^{\circ}\text{C}$
Storage	$-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$
Temperature shock	to MIL-STD-810E method 503.3
Shock	to MIL-STD-810E method 516.4
Vibration	to MIL-STD-810E method 514.4
Waterproofness	1 m immersion during 2 hours, to MIL-STD-810E method 512.3
Sand and dust	to MIL-STD-810E method 510.3
Solar radiation	to MIL-STD-810E method 505.3
Icing and freezing rain	to MIL-STD-810E method 521.1
Salt fog	to MIL-STD810E method 509.3
Low pressure (altitude)	to MIL-STD810E method 500.3, proc. I+II 5000 m above sea level at $<+35^{\circ}\text{C}$ to MIL-STD810E method 507.3 (cycle5), $33^{\circ}\text{C}/63^{\circ}\text{C}$ , 75% RH, 15 days
Humidity	to MIL-STD810E method 508.4
Fungus	to MIL-STD-461
EMI	to MIL-STD810E method 516.4, proc.VI
Bench handling	

## Dimensions (W x H x D)

199 mm x 74 mm x 309 mm  
(with battery pack)

## Weight

<5.8 kg (with battery pack)

## Accessories (optional)

Handset, headset, battery charger, loudspeaker with external 3 W audio amplifier

## External control units, data terminals

Data terminal (DT) for field use, fill gun, message handling PC software, mission planning PC software, remote control terminal, remote control software (installed on a PC) for remote control of the radio

## Antennas

HF whip antenna 2.4 m, VHF whip antenna 1.5 m, short rod antenna VHF, long wire antenna, dipole antenna for VHF and HF range, other antennas on request

## External amplifiers

50 W VHF power amplifier, 50 W VHF/UHF power amplifier, 150 W HF power amplifier

## External antenna tuning units

Vehicular antenna tuning unit HF 150 W

## Docking stations

Docking station for one or two radios, one or two 50 W VHF power amplifiers and a switchbox (DDS)<sup>1)</sup> or auxbox (SDS)<sup>2)</sup>

## Batteries

Autonomy/capacity at  $+25^{\circ}\text{C}$

Li-Ion	Li-Ion (rechargeable) or LiSO <sub>2</sub> (primary) (FF-operation, duty cycle TX/RX/Stdby = 1:1:8)
LiSO <sub>2</sub>	VHF (5 W, FM): 22 h, HF (10 W, SSB): 14 h VHF (5 W, FM): 28 h, HF (10 W, SSB): 18 h

<sup>1)</sup> Double docking station.

<sup>2)</sup> Single docking station.



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