



VHF/UHF Airborne Transceiver Family R&S® M3AR

R&S® MR6000A

The R&S® MR6000A transceiver of the R&S® M3AR family is software-reprogrammable. It is possible to download several EPM (ECCM) waveforms for both NATO and non-NATO countries and use them alternately.

The R&S® MR6000A comes in a standard housing to ARINC600 and features optional embedded NATO-COMSEC with black key loading.

The transceiver can be controlled by the Remote Control Unit R&S® GB6500 or MIL-BUS according to MIL-STD-1553B.

- ◆ VHF/UHF, AM/FM, voice/data
- ◆ EPM (ECCM): HAVE QUICK I/II, R&S® SECOS, SATURN
- ◆ 30 MHz to 400 MHz extended frequency range
- ◆ Channel spacing 25 kHz and 8.33 kHz
- ◆ 20 W AM/30 W FM RF output power
- ◆ Embedded NATO-COMSEC, enabling T/C mode (option)
- ◆ Modular design, SMD technology
 - BITE down to module level
 - High reliability
- ◆ VHF FM immunity
- ◆ Monitoring of GMDSS channel
- ◆ LINK 11 interoperability
- ◆ Sonobuoy command
- ◆ Integrated frequency agile filter
- ◆ Demodulation of DF/homing signals (ADF support)
- ◆ P³I (pre-planned product improvement), e.g. software upgrade to future waveforms



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Specifications

EPM (ECCM) (options) HAVE QUICK I/II SATURN R&S®SECOS	acc. to STANAG4246 acc. to STANAG4372
Frequency range	30 MHz to 87.975 MHz ¹⁾ 108 MHz to 173.975 MHz 225 MHz to 399.975 MHz ²⁾
Channel spacing	25 kHz (all bands), 8.33 kHz (VHF ATC band)
Frequency accuracy	±0.5 ppm (-40°C to +55°C)
Modulation modes	A3E, F3E, A1D, F1D, MSK
Preset channels	2 × 100 3 × GRX 1 × GMDSS
COMSEC (options)	embedded: NATO-COMSEC (VINSON KY-58/100 compatible, T/C mode) embedded: R&S®SECOS
Interfaces RF ports Radio control Data input/output DS 101 crypto variables GPS time interface Sonobuoy control LINK 11 data interface SATURN data interface	single port TX/RX, TNC type MIL-STD-1553B RS-485 MIL-STD-1553B RS-422 data transfer acc. to STANAG5511 and MIL-STD-188-203-1A data transfer acc. to STANAG4372
Transmitter RF output power AM/HAVE QUICK I/II FM/FSK/SATURN MSK/LINK 11 Duty cycle Distortion Broadband noise/fixed frequency mode ±100 kHz from carrier ±1 MHz from carrier ±10 MHz from carrier	≥20 W ≥30 W TX/RX: 1 min/5 min at 20 W/30 W ≤10%, m = 0.8, f _{mod} = 1 kHz ≤-83 dBm (1 Hz) ≤-100 dBm (1 Hz) ≤-120 dBm (1 Hz)
Main receiver Sensitivity (10 dB S+N/N) AM FM Selectivity ICAO 8.33 kHz ICAO 25 kHz Wideband Squelch	-101 dBm, m = 0.3, f _{mod} = 1 kHz -107 dBm, 2.4 kHz dev., f _{mod} = 1 kHz 6 dB 60 dB >7 kHz <11 kHz >22 kHz <50 kHz <50 kHz <60 kHz 8 dB to 15.5 dB, adjustable
Guard receiver Frequency FM AM AM FM (GMDSS channel 70) Scanning possibility for voice guard receiver Sensitivity (10 dB S+N/N) Selectivity Squelch	40.5 MHz 121.5 MHz 243.0 MHz 156.525 MHz yes ≤-99 dBm, m = 0.3, f _{mod} = 1 kHz 6 dBm 60 dBm ≤28 kHz ≥100 kHz 8 dB to 15.5 dB, adjustable
Power supply	+28 V DC (acc. to EN2282) +16 V to 32 V DC
Power consumption Transmit Receive Standby	<300 W, typ. 225 W <50 W, typ. 35 W <250 mW

Environmental conditions³⁾ Operating temperature range Permissible temperature range Storage temperature range Shock/vibration EMC ⁴⁾ Altitude	-30°C to +71°C -40°C to +85°C -40°C to +85°C MIL-STD-810E MIL-STD-461C/462D extended requirements for TEMPEST 70000 ft
Dimensions	3 HU, length 320 mm (to ARINC 600)
Weight	<6.9 kg
Accessories supplied	Remote Control Unit R&S®GB6500

- 1) Acc. to STANAG4204.
- 2) Acc. to STANAG4205.
- 3) Acc. to MIL-HDBK-5400 (class 2, modified).
- 4) Acc. to MIL-HDBK-217F.

Remark:

LINK 11 operations require forced-air cooling, min. 66 kg/h at 55°C max.

Ordering information

Designation	Type	Order No.
Basic module		
ARINC600 housing; RF 20 W AM/30 W FM Plain – no EPM (ECCM)	R&S®AR6000	6113.6501.02
Mandatory options		
Control Interface (Standard)	R&S®CI6000A	6111.3540.02
Audio Output 150 Ω impedance 600 Ω impedance	R&S®AI6000	6111.3557.xx .02 .03
Frequency Range VHF tact. (30 MHz to 88 MHz) VHF (108 MHz to 174 MHz) UHF (225 MHz to 400 MHz)	R&S®FR6000	6111.3563.xx .02 .03 .04
Available options		
EPM (ECCM) Hardware HPP-600 SKM 4 (for embedded NATO-COMSEC and/or black key loading)	R&S®GP6000	6112.9007.xx .03 .04
EPM (ECCM) Software HAVE QUICK I HAVE QUICK I/II SATURN/HAVE QUICK I/II Embedded NATO-COMSEC R&S®SECOS	R&S®GS6000	6113.0503.xx .02 .03 .04 .05 on request



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