VHF/UHF Airborne Transceiver Family R&S M3AR

R&S MR 6000L

The R&S MR 6000L transceiver of the R&S M3AR family is software-reprogrammable and is among the smallest and most lightweight VHF/UHF airborne transceivers worldwide.

It is possible to download several EPM waveforms and use them alternately.

The R&S MR 6000L is designed for installation in the cockpit and its architecture ensures form, fit and function replacement for existing AN/ARC-164 radio systems.

◆ Multiple EPM waveform options
  – SATURN
  – HAVE QUICK I/II
  – SECOS
◆ Software-reprogrammable
◆ 30 MHz to 400 MHz frequency coverage
◆ Voice and data
◆ 10 W AM to 15 W FM
◆ 8.33 kHz and 25 kHz channel spacing
◆ Weight less than 4.0 kg

M3AR

ROHDE & SCHWARZ

Specifications

EPM (electronic protection measures) (options)	
Have Quick I + II	(STANAG 4246)
SATURN	(STANAG 4372)
SECOS	
Frequency range	30 MHz to 87.975 MHz
	108 MHz to 173.975 MHz
	225 MHz to 399.975 MHz
Channel spacing	25 kHz, 8.33 kHz
Frequency accuracy	±0.5 ppm (–40 °C to +55 °C)
Modulation	AM, FM, FSK
COMSEC	external/VINSON KY-58 compatible, proprietary embedded
Interfaces	
RF ports	single port TX/RX
Radio control (options)	MIL-STD-1553B
	RS-485
	ARC-164 parallel
	ARC-164 serial
	manual
Data input/output (options)	MIL-STD-1553B
	RS-232-C
Filter/tuned antenna serial bus	Manchester coded frequency information
	1 MHz data rate

Transmitter	
RF output power	
AM	≥10 W
FM/FSK	≥15 W
Duty cycle	TX/RX ≤1 min/5 min
Distortion	≤10 %, m = 0.8, f_{mod} = 1 kHz
Broadband noise	
±25 kHz from carrier	≤–70 dBm (1 Hz)
±10 MHz from carrier	≤–115 dBm (1 Hz)
≥±20 MHz from carrier	≤–120 dBm (1 Hz)

Main receiver		
Sensitivity		
AM	–101 dBm, m = 0.3	
FM	–104 dBm, 2.4 kHz dev.	
Selectivity	6 dB	60 dB
ICAO 8.33 kHz	>7 kHz	<11 kHz
ICAO 25 kHz	>22 kHz	<50 kHz
Wideband	>50 kHz	<60 kHz
Squelch	8 dB to 15.5 dB adjustable	

Guard receiver	
Frequency	
FM	40.5 MHz
AM	121.5 MHz
AM	243.0 MHz
Sensitivity	≤–101 dBm, 30 % modulation (121.5 MHz, 243 MHz)
	≤–104 dBm, 2.4 kHz dev. (40.5 MHz)
Selectivity	
at 28 kHz	≤6 dBm
at 80 kHz	≥60 dBm
Squelch	adjustable to 8 dB to 15.5 dB (S+N)/N

Power supply	+28 V DC (MIL-STD-704 D)
Power consumption	
Transmit	<190 W (120 W typ.)
Receive	<30 W (25 W typ.)
Standby	<100 mW

Environmental conditions	
Rated temperature range[1]	–40 °C to +55 °C
Operating temperature range[1]	–54 °C to +71 °C
Storage temperature range[1]	–54 °C to +90 °C
Shock/vibration	MIL-STD-810 E
EMC	MIL-STD-461 D
Dimensions of body (W x H x D)	127 mm x 121 mm x 165.1 mm (max.)
Weight	<4 kg
Accessories supplied	remote control unit
	frequency indicator
	agile VHF/UHF Filter
	power amplifier UHF 30 W/45 W
	mounting tray
	EPM management system

[1]   To MIL-HDBK-5400, class 2, modified.

Ordering information

Description	Type	Order No.
Basic module		
ARC-164 housing; RF 10 W AM/15 W FM Plain – no EPM	R&S MR 6000	6113.5505.02
Mandatory options		
Control Interface	R&S CI 6000L	6111.3511.xx
RS-485		.02
MIL bus direct coupling + RS-485		.03
MIL bus trafo coupling + RS-485		.04
ARC-164 parallel		.05
ARC-164 serial		.06
Illumination	R&S IL 6000L	6111.3528.xx
White		.02
NVG[1] (green A)		.03
Red		.04
Audio Output	R&S AI 6000	6111.3557.xx
150 Ω impedance		.02
600 Ω impedance		.03
Frequency Range	R&S FR 6000	6111.3563.xx
VHF tact. (30 MHz to 88 MHz)		.02
VHF (108 MHz to 174 MHz)		.03
UHF (225 MHz to 400 MHz)		.04
Available options		
EPM Hardware HPP-164	R&S GP 6000	6112.9007.02
EPM Software	R&S GS 6000	6113.0503.xx
HAVE QUICK I		.02
HAVE QUICK I/II		.03
SATURN/HAVE QUICK I/II		.04
SECOS Voice		.06
SECOS Voice & Data		.07

[1]   Night vision goggles.

Certified Environmental System
ISO 14001
REG. NO 1954

Certified Quality System
ISO 9001
DQS REG. NO 1954