

COUGAR 2000

Mobile Radio
VRM 5110 HS

KEY FEATURES

- 136-174MHz VHF coverage
- Analogue or digital voice and data
- Up to 100 programmable channels
- Meets ETSI approvals
- CTCSS squelch
- Backwards compatible with existing Cougar
- Scanning & programming/cloning features
- Compact, rugged construction
- Alphanumeric display



INTRODUCTION

Cougar 2000 has been developed from the highly successful Cougar range of radios to provide comprehensive frequency coverage, compatibility with a range of signalling systems, selective calling, channel scanning and digital encryption. The Cougar 2000 units are rugged and compact, meeting ETSI specifications for EMC and Type Approval.

THE MOBILE RADIO (VRM 5110 HS) provides cost effective, ruggedised vehicle communications for customers who require an integral digital encryption capability. The Mobile Radios are designed to satisfy conventional vehicle fit requirements and can also be fitted in covered Land Rover type installations.

The radio covers the VHF 136-174MHz frequency band, operates single or two frequency simplex and supports 100 channels, channel scanning, cloning and CTCSS.

The RF output level is programmable between high and low power settings. The power level settings are factory preset, high power beings 10-25W and low power being 0.5-2W.



THALES DEFENCE COMMUNICATIONS

TECHNICAL SPECIFICATION

GENERAL

Frequency Range:

VHF: 136 – 174MHz

Frequency Stability:

VHF: ± 5 ppm
UHF: ± 1.5 ppm
Ageing: Within ± 1.2 ppm per annum

Channel Spacing:

12.5/25kHz pre-programmed per channel (20kHz and 30kHz available as variants)

Operating Modes:

Analogue: 1 or 2 frequency Simplex
F3E (Narrowband FM)
Digital: F1E 2 or 4 level FSK (25kHz channel),
12 or 16 kbit/s data Frequency, mode and operational information stored in EEROM

Channels:

100 channels

Nominal Supply

12V DC negative ground. Unit protected against supply reversal with integral base

Current Consumption

(Excluding Options)
VHF: ≤ 500 mA RX (Squelched)
 ≤ 2.5 A RX (10W Audio)
 ≤ 9.0 A TX (25W Output)

Programming

Selected features may be entered from a Programmer. Radio may also be cloned from a previously programmed 'master' radio

TRANSMITTER

RF Power Output:

Programmable High/Low Power. Both high and low power levels are factory preset.
High: 10W - 25W
Low: 0.5W - 2W

Nominal Load Impedance

50 Ohm

Adjacent Channel Power

25kHz ≤ -70 dBc
12.5kHz ≤ -60 dBc

Spurious Emissions

9kHz - 1GHz ≤ 0.25 μ W
1GHz - 4GHz ≤ 1.0 μ W

AF Response

Narrowband Voice: Within +1dB / -3dB. From 300Hz to 3kHz reference to 1kHz relative to selected pre-emphasis curve, 0dB or 6dB/octave

Audio Distortion $\leq 10\%$

Hum and Noise ≤ 40 dB

Transmit Time Out

Programmable to either continuous transmit or to terminate transmission after time of 30s, 60s, 90s, or 120s

RECEIVER

Maximum Usable Sensitivity

Data BER: ≤ -117 dBm for 12dB SINAD
 ≤ -117 dBm for 1:10 BER

Adjacent Channel Selectivity

25kHz channel ≥ 70 dB
12.5kHz channel ≥ 60 dB

Spurious Response Rejection

≥ 85 dB from 100kHz to 4GHz excluding channels < 200 kHz from wanted. ≥ 70 dB within ± 200 kHz from wanted

Intermodulation Response

≥ 65 dB

Blocking

≥ 84 dB (± 1 MHz to ± 10 MHz from wanted)

Spurious Emissions

9kHz - 1GHz: ≤ 2 nW
1GHz - 12.75GHz: ≤ 20 nW

Audio Output

External Speaker Output: ≥ 10 W rms at full volume into 4 Ohms for a 1kHz tone at rated deviation (balanced output)
Audio Output: ≥ 0.5 W rms at full volume into 8 Ohms for a 1kHz tone at rated deviation
Volume Control: Full volume and 5 further positions giving a maximum of 35dB attenuation

AF Response

Narrowband Voice: Within +2dB / -8dB from 300Hz to 3kHz reference to 1kHz relative to selected de-emphasis curve, 0dB or 6dB/octave

Hum and Noise ≥ 45 dB

Mechanical Characteristics

Nominal Dimensions

Height: 50mm
Width: 179mm
Depth: 230mm
Weight: 2.5kg



Type Approved to ETS 300 086 and ETS 300 219

THALES

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Thales reserves the right to vary in detail from the description and specification in this publication. Publication No: 7318-1/0301/1384D.