II

COUGARNET

PRM 4735 and RCU shown with Cougar Personal Radio

COVERT PERSONAL RADIO – PRM 4735

SECURE PERSONAL COVERT RADIO SYSTEM

FULLY COMPATIBLE WITH COUGAR SYSTEM IN SECURE MODE

OPTIMISED FOR USE WITH COVERT ANCILLARIES · VHF COVERAGE

10 PROGRAMMABLE CHANNELS · 16kb/s DIGITAL ENCRYPTION

SINGLE OR TWO FREQUENCY SIMPLEX OPERATION · EXTENDED BATTERY LIFE

COMPACT RUGGED CONSTRUCTION

The PRM 4735 is an extremely compact radio specifically designed for covert applications.

The basic radio consists of three units which are separated to give maximum flexibility in terms of distribution and configuration.

The PRM 4735 Transceiver contains all the radio and cryptographic electronics packaged in a compact slim unit which is ideal for carrying unobtrusively about the person.

The MA 4736 rechargeable NiCad battery supplies the power for the transceiver and can either be attached to the radio or remotely positioned.

The MA 4737A Radio Control Unit (RCU) is designed to fit in the palm of the hand giving control of on/off volume, channel setting, PTT and voice. These controls have been designed to enable operation by touch alone. The A and B models provide 4 channel selection while the C model provides 8 channels.

The transceiver, battery and RCU are combined with microphone, an inductive loop and earpiece, antenna and a carrying harness to form a complete personal covert station.

The radio is fully compatible with the Cougarnet communications systems operating in the secure mode. This allows the PRM 4735 to be used alongside other Cougar stations with the added benefit of integration into large area systems using talkthroughs.

A battery and fill management system is available with channel frequencies and crypto codes being fed into the radios by an MA 4073C Programmer. Alternatively the programmer can transfer its information into a number of MA 4083C Fill Guns for distribution throughout a network.

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TRANSCEIVER

The transceiver itself will support a full range of facilities although not all the functions are available with the standard RCU.

- Up to 10 stored channels with frequency synthesis of channels
- 16kb/s secure speech (but not clear)
- Four secure codes and zeroise
- Audio circuit optimised for covert audio gear
- Remote control
- 18 MHz frequency range in high band VHF
- Automatic power saving system extends battery life
- Encrypted tone transmission facility
- Transmission time limit of 120 secs or infinity

Apart from zeroise there are no controls on the unit. The functions are selectable by the Radio Control Unit, however the Transceiver will retain the mode in a non-volatile memory so that it can be used in a pre-set mode without an RCU. The Transceiver is switched on/off either by insertion/removal of the audio connector, or via the RCU.

RADIO CONTROL UNIT (RCU)

The covert radio has a separate small RCU which may be conveniently operated in the user's pocket, while the radio itself may be placed in a less conspicuous position.

The standard RCU is of small size and light weight for easy concealment, and has switchgear ergonomically designed for this application. Easy switch identification by feel, with positive but noise free action have been the design objectives.

The radio has only on/off and encryption key zeroise controls. These controls are duplicated on the RCU, which also provides for channel selection (4 with A & B, 8 with C version which also has a key change facility) volume control and PTT. A further control generates the transmission of an encrypted tone which may be used for signalling.

Operation of the Transceiver without the RCU (ie; with an optional PTT switch plugging directly into the Transceiver) is possible, the radio operating in the last mode selected by the RCU.

Power supply for the RCU is provided by the host radio via the connecting lead.

MAIN TECHNICAL PARAMETERS

GENERAL

Frequency Ranges

PRM 4735L:	76-86 MHz
PRM 4735HA:	138-156 MHz
PRM 4735HB:	154-172 MHz
Channels:	10 Programmable (1 or 2 frequency simplex)
Channel Spacing:	25 kHz
Frequency Steps:	12.5 kHz
Frequency Stability:	Better than ± 10 ppm.
Ageing:	2 ppm per annum maximum
Operating Modes:	FIE 16 kb/s data only
Supply:	7.2V nominal
Battery Life:	3.7 hrs @ 1:9:10 MA 4736B
Encryption:	Internal 16 kb/s speech security system. Preset to encryption key variable 'A' using MA 4437 Cypher Module. MA 4737C provides key change facility

Physical Characteristics

	Dimensions (H × W × D)	Weight approx.
Transceiver:	138 × 75 × 16.6mm	350g
Battery: MA 4736B	69 × 75 × 16.6mm	150g
RCU:	70 × 40 × 20mm	75g

Environmental: Designed to withstand the ingress of dust and moisture.

TRANSMITTER

Power (into 50Ω):	1W + 3 − 1 dB (7.2–10.5V supply)
Duty Cycle:	50%
Peak Deviation:	+5kHz nominal
Occupied Bandwidth:	20 kHz max
AF Response:	400Hz to 3.4 kHz within 6dB
Spurious Emissions:	2.5μW max
Adjacent Channel Power:	Below – 35 dB relative to carrier
Transmit Time Out:	2 min or infinity, factory set

RECEIVER

Sensitivity:	Less than 10% synchronous BER @–118dbm, 50Ω
Minimum AF Output Power at Full Volume:	250 mW into 8Ω
AF Response:	400 Hz to 3.4 kHz within 6dB
Image Rejection:	Better than 60dB
IF Rejection:	Better than 60dB
Spurious Response Rejection (External):	Better than 60dB
Spurious Emission in Receive Mode:	Any spurious radiation not to exceed 20n W
Squelch:	16kb/s carrier to noise
Adjacent Channel Rejection:	Better than 50dB
Volume Control:	6 stepped volume levels
Intermodulation Response Rejection:	Better than 55dB
Blocking Level:	Better than 80dB μV emf

RACAL

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Racal reserve the right to vary in detail from the description and specification in this publication

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