

OP1

KM3000 4000 Operating Instructions

These VHF radios are programmed for 2m frequencies as detailed in the separate document (OP3) KM2022.PDF or (OP2) KM3000 2023.pdf. (The frequencies also apply to the KM4000).

The basic specification for all radios sold after June 2023 is as follows:-

Power input:- 12VDC 6Amp max

Power output: 15W

Maximum of 256 channels, 193 in use. Set up for 12.5kHz channel spacing specification and the appropriate deviation.

A speaker microphone and mounting cradle are included.

The power lead is 100mm long terminating in a 2 pin Molex connector. You may wish to remove this and replace with a connector of your choice.

If you wish to keep the Molex connector TVRG can supply a new MOLEX 2 way plug and pins kit that will match the socket on the power lead at back of the radio. You can then make a power lead to suit your requirements. Remember to fit an 8A fuse in the +VE lead to protect the radio.

Go to www.tvrg.org.uk for current prices.

The radios are programmed to function as follows:-

FRONT PANEL CONTROLS

On/Off (press) and volume control for the speaker microphone.

Microphone socket.

REAR PANEL

PL259 type flying lead for the antenna.

Flying lead for power, terminating in a 2 pin Molex connector.

Either a 15 Way Molex connector or RJ45 female, used for programming.

FRONT PANEL DISPLAY

The display, which is backlit, displays the channel number and if the channel is simplex, the frequency or if the channel is a repeater channel, the callsign. The radio is programmed for all U.K. 2m analogue amateur repeaters as listed on the ETCC website in June 2023, together with simplex channels. In addition, we have added some channels used for packet radio.

If you are intending to use the radio for packet use, then please read the document Note 12 (KM3000 yellow PCB open squelched packet operation), which is on the downloads page www.tvrg.org.uk

The lower line of the display gives an indication of the received signal strength. This is shown as “blocks” on the LHS of the display and a relative number indication on the RHS.

MICROPHONE CONTROLS

LEFT/RIGHT arrows – change channels. If you press and hold either button, the channels will change quickly, stopping when the button is released. Looking at the microphone, the left-hand button is “Channel down” and the centre button is “Channel up”. The right-hand button is for Scan.

END – stops/starts scan. Note: when a signal is detected the scan remains stopped for 10 seconds or less if the signal disappears and then resumes scanning. An “S” is displayed in the lower RHS of the display.

Some microphones may be labelled 1, 10, 100. 1 and 10 are Down/Up channels and 100 is Scan.

All the repeater channels are programmed with CTCSS encode and decode. This is because there are digital repeaters throughout the UK, and these will be annoying if the receive is not protected by CTCSS. If you want to disable the CTCSS decode, then press and hold the Scan button and at the same time briefly push the PTT. The radio will not transmit but will show “D” in the lower RHS of the display. Repeat this procedure to resume normal CTCSS decode operation.

CHANNEL PROGRAMMING AND SCAN

The radio is capable of holding 256 channels.

The first 8 channels are programmed as simplex channels upwards from the calling channel V40 (previously S20). The next channels are all the analogue 2m repeaters listed alphabetically from GB3AA up to GB3ZA. These were taken from the list on the ETCC website (ukrepeater.net) in June 2023. After the repeater channels are four packet frequencies that have been requested by people wishing to use these radios for packet radio use. The remainder of channels are the simplex channels below 145MHz starting at 144.625MHz finishing at 144.800MHz, the APRS frequency. Finally, you have the simplex channels from 145.200MHz to 145.4875MHz. The radio “rolls over” from Channel 256 to Channel 1 in both directions and this means all the common simplex channels are consecutive.

In order to provide a radio that can be used anywhere in the U.K., we have programmed every U.K. 2m analogue repeater as a separate channel with their specific CTCSS frequency. The repeaters are listed alphabetically by callsign, which is shown on the display.

To scan every repeater would take a long time and to minimise this the radios have been programmed as follows:-

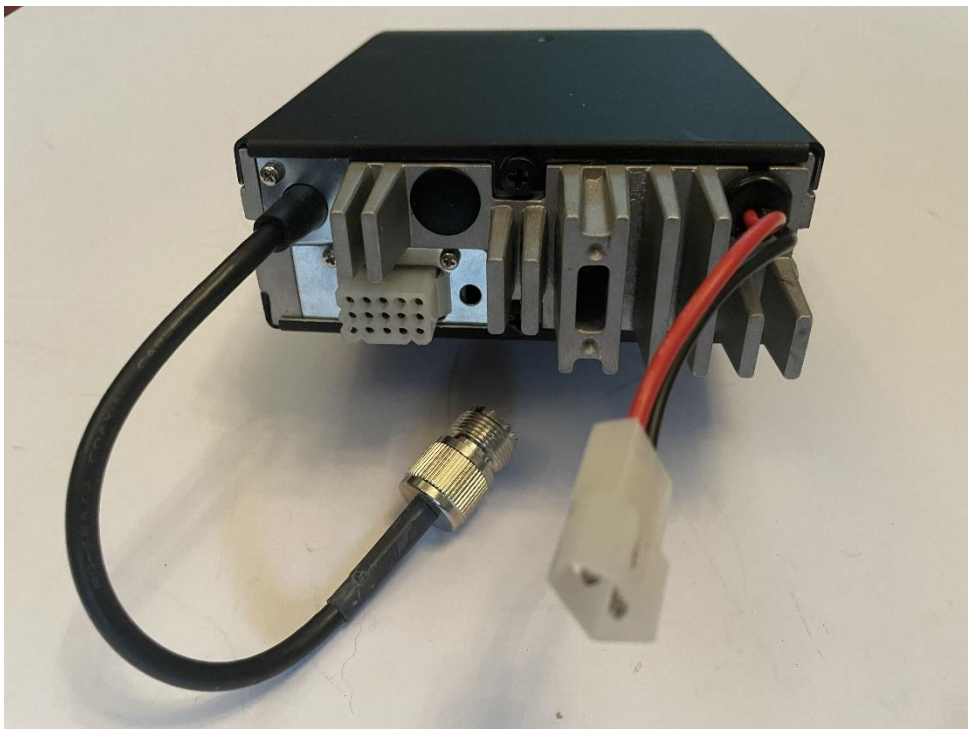
It scans the most used simplex channels and at least one of each of the 16 repeater channels. These repeater channels have been chosen to be those in the central south-eastern and south-western areas of the country. This is because of where the radios are initially being sold. However, if you live outside these areas and see a repeater on one of those channels, you can disable the CTCSS decode and identify which repeater this is, and then move to that channel, which has been programmed. The chances are you that you will know your local repeaters and their frequencies.

You can stop scanning by pressing any of the microphone buttons or PTT.

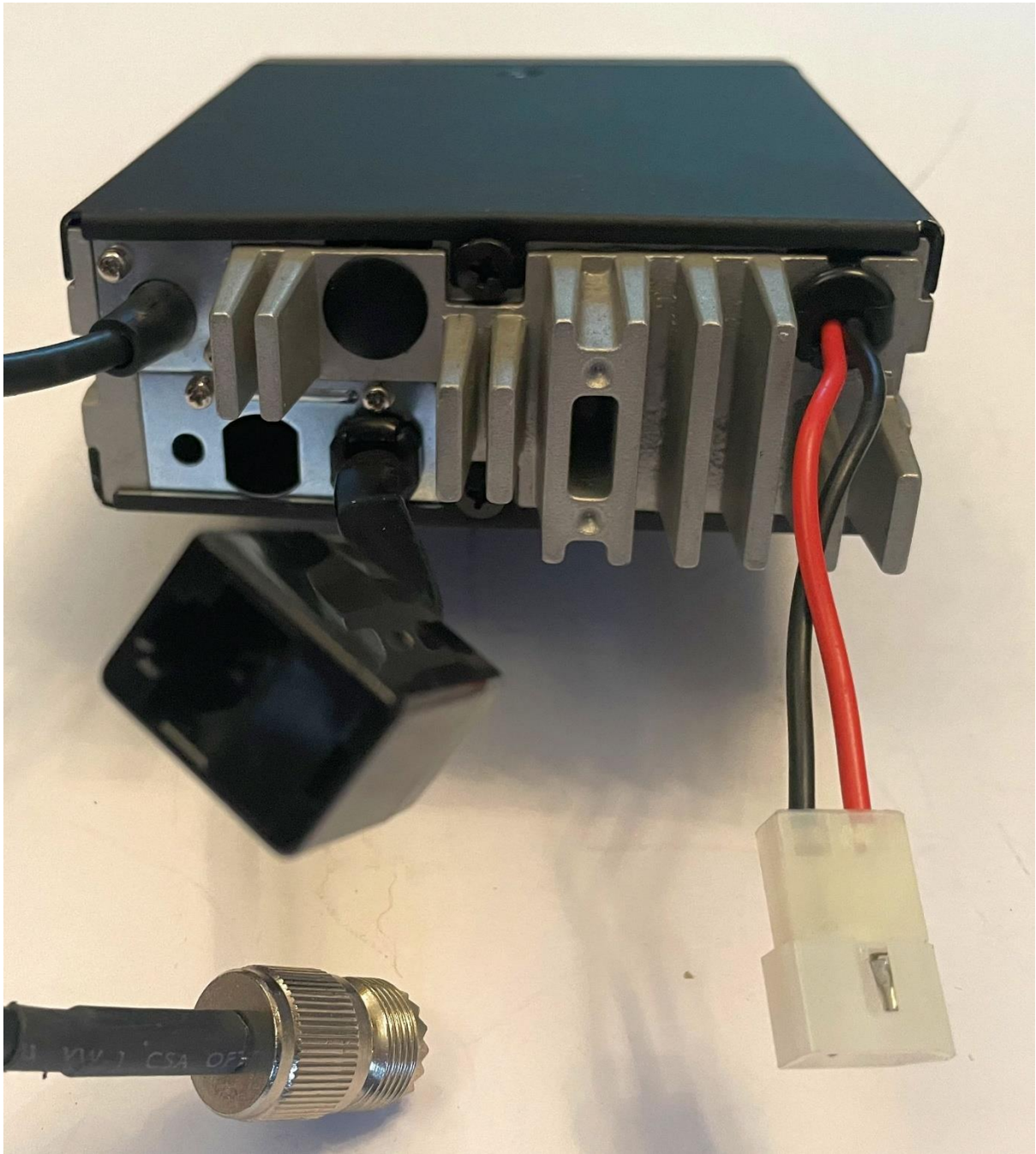
Photographs of the radio are on the following page.



FRONT VIEW



BACK VIEW (MOLEX VERSION)



BACK VIEW (RJ45 VERSION)



Microphone type A



Microphone type B