OP4_KM3000 4000 Help Guide

If you are having problems with your new KM 3000/4000 radio we are here to help you.

We have put together this quick guide of common issues, how to overcome them and help you understand how the radio works.

In the unlikely event there is a fault with the radio, you are always welcome to contact us at TVRG and we will do our best to help, but the following guide is usually found to help resolve most issues.

Test equipment

Whilst trying to work out what may be wrong with your KM3000/4000 radio, we recommend you carry out testing on a simplex channel say 145.550 (no RX CTCSS). Using a modulated 1 kHz FM signal source of approximately -100dB. This should be connected to the radio antenna connector to ensure the squelch is fully open. Be careful not to transmit RF into the signal generator.

If a suitable RF signal generator is not available then you can use another radio connected to a dummy load in proximity to the radio under test to produce a test signal. But do not connect this directly to the antenna socket of the radio under test.

Another option is to use an on air source by connecting the radio to an antenna and using a transmitted signal from a friendly local licensed amateur.

Some of the common questions we get asked are:

Q. ***"There is no sound from my radio, the speaker is not working".***

No audio at any volume level

There is no speaker fitted inside the radio, the radio is fitted with a speaker microphone. Make sure the microphone is plugged into the radio. Listen carefully to the microphone when adjusting the volume control. If you suspect the speaker in the microphone is faulty and you have a radio with a 15 way Molex connector at the back you can connect a 4/8 ohm speaker to pins 1 & 3 to test if there is audio output. If you hear a hiss or quiet audio from the speaker in the microphone it is likely the squelch or CTCSS, (if on a repeater channel) is holding the audio off. If you have just received the radio from us and in the unlikely situation the microphone is faulty, we can supply a replacement microphone for your radio.

Q. "There is no squelch control, how do I set the squelch level".

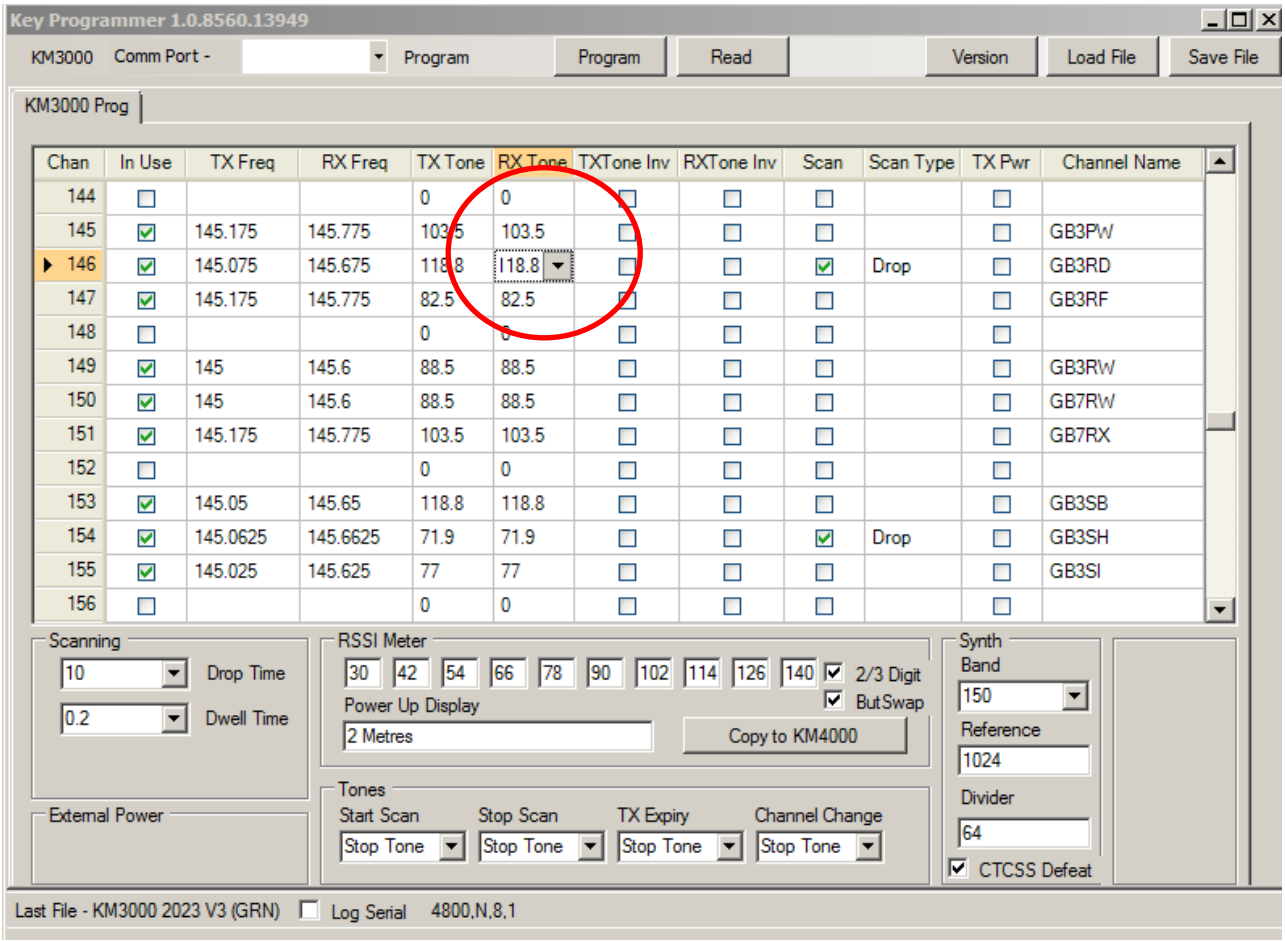
Fixed squelch

In common with most ex PMR radios all KM3000/4000 radios have fixed squelch set at approx. -117dB/-118dB. There is no adjustment externally or internally on the radio and this cannot be defeated. No audio will be heard until there is a signal strong enough that opens the squelch on the channel.

Q. "There is a strong signal on the RSSI bar graph when I am on my local repeater channel but I can't hear anything".

Receive CTCSS

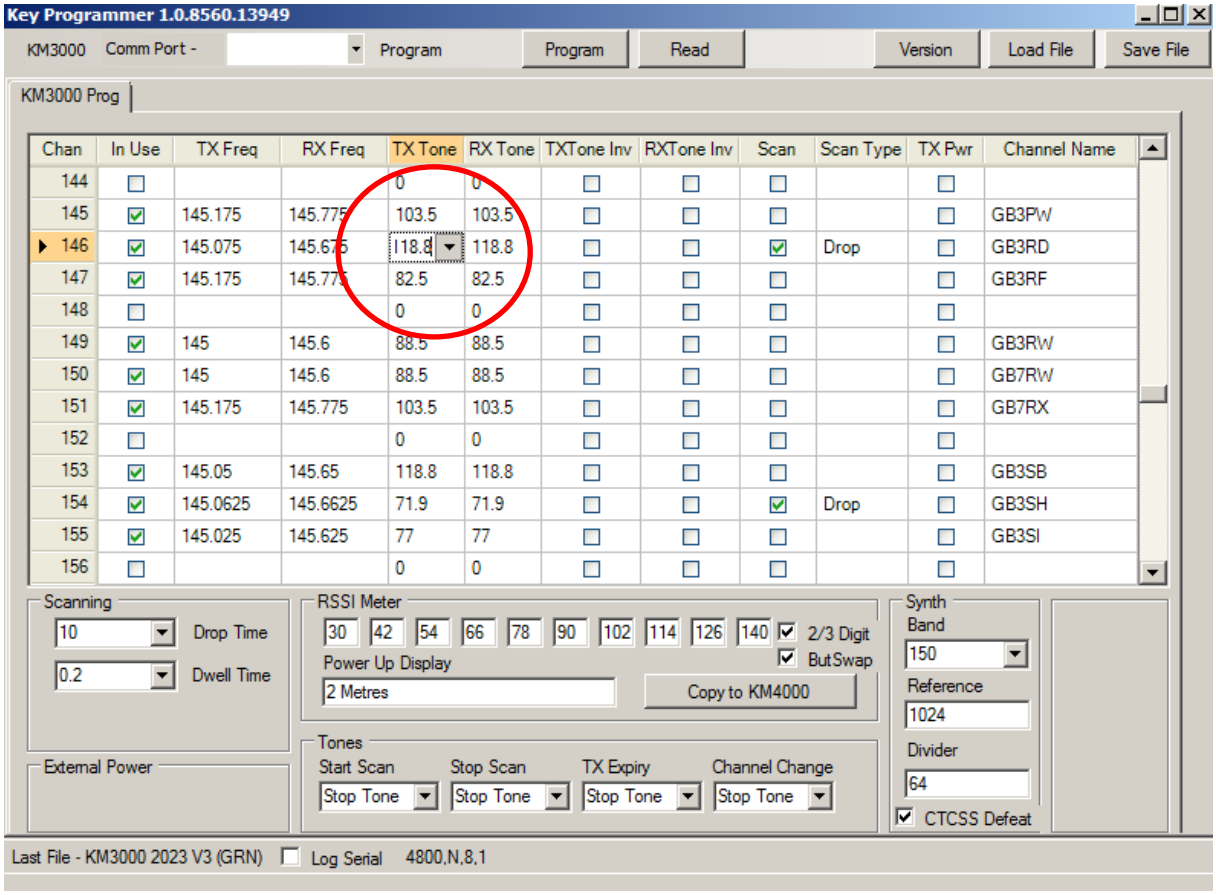
All UK amateur repeaters should transmit the correct assigned CTCSS. During programming we have set all repeater channels to TX and RX the relevant CTCSS code for your local repeater. Receive CTCSS should be thought of as a second level of squelch. Sometimes the repeaters do not transmit this CTCSS for various reasons. This means the squelch will not open and although the RSSI bar graph shows a signal on the channel no audio will be heard. The receive CTCSS can be temporarily disabled on your radio by holding down the END button on the microphone and quickly pressing and releasing the PTT once. A letter "D" will appear in the display screen to show the CTCSS is disabled. If this CTCSS on receive is a problem it can easily be removed using the programming software to change the settings. Each channel has the option to change the CTCSS value and if not required this should be set to zero in the program. If you click on the right of the value a drop down box will appear and you can select zero. You must use the drop down box to select the value, do not just delete the value and add a zero as this will not work when the setup is downloaded to the radio. The new value should then be downloaded to the radio by clicking the "Program" button in the top line of the screen.



Q. "I can't access my local repeater I think the CTCSS setting is wrong".

Transmit CTCSS

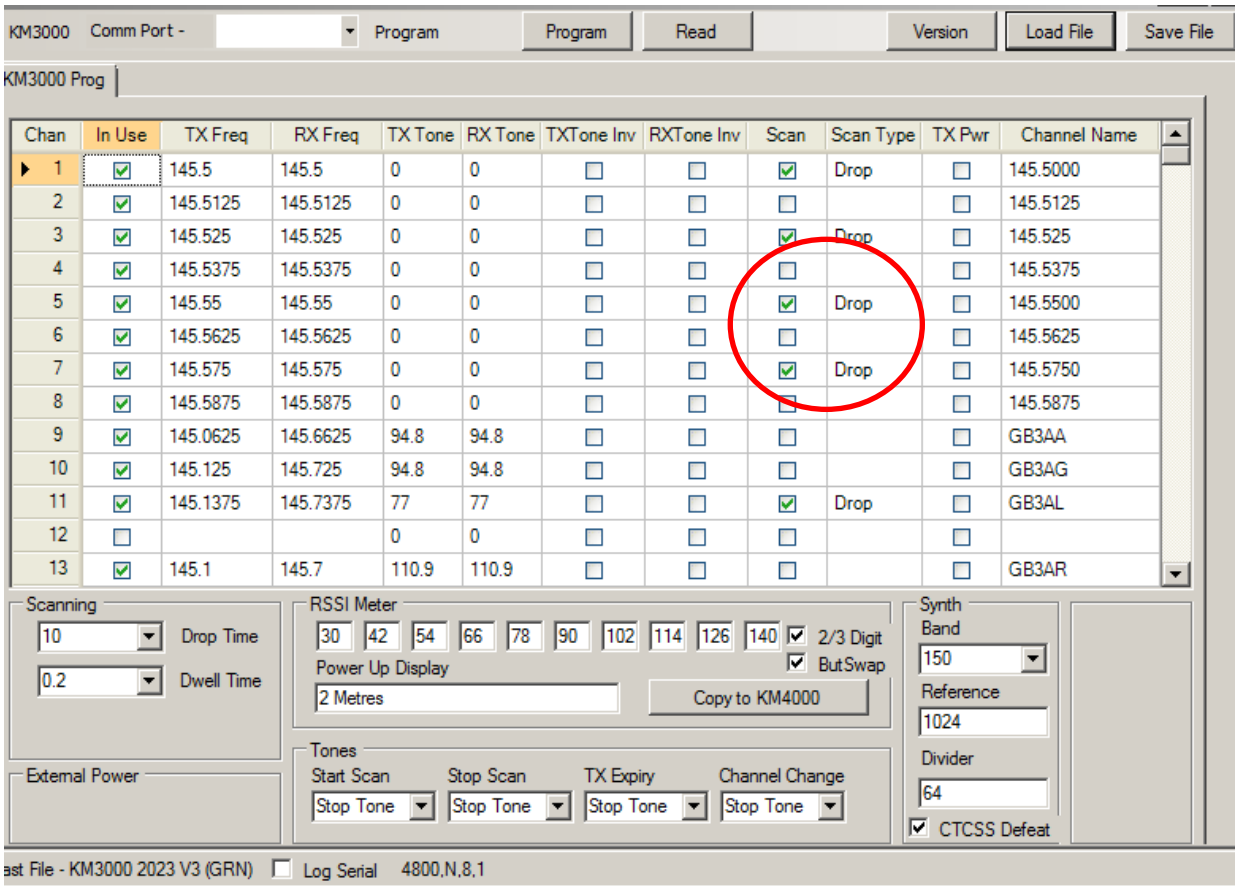
Should you wish to change the transmitted CTCSS this is done in the same way as for the receive CTCSS.



Q. "The radio scans when I press the END button but does not stop on my local repeater or simplex channel".

Scan channels

We have set the scan group up for the South of England, if you are located elsewhere in the country you will need to change the scan settings using the programming software. Remove or add the ticks in the boxes of the channels you want to scan. You will also need to add or remove the setting "Drop" for the scan type on the channel. Adding too many channels to the scan group may slow the scanning down. The new values should then be downloaded to the radio using the "Program" button at the top.

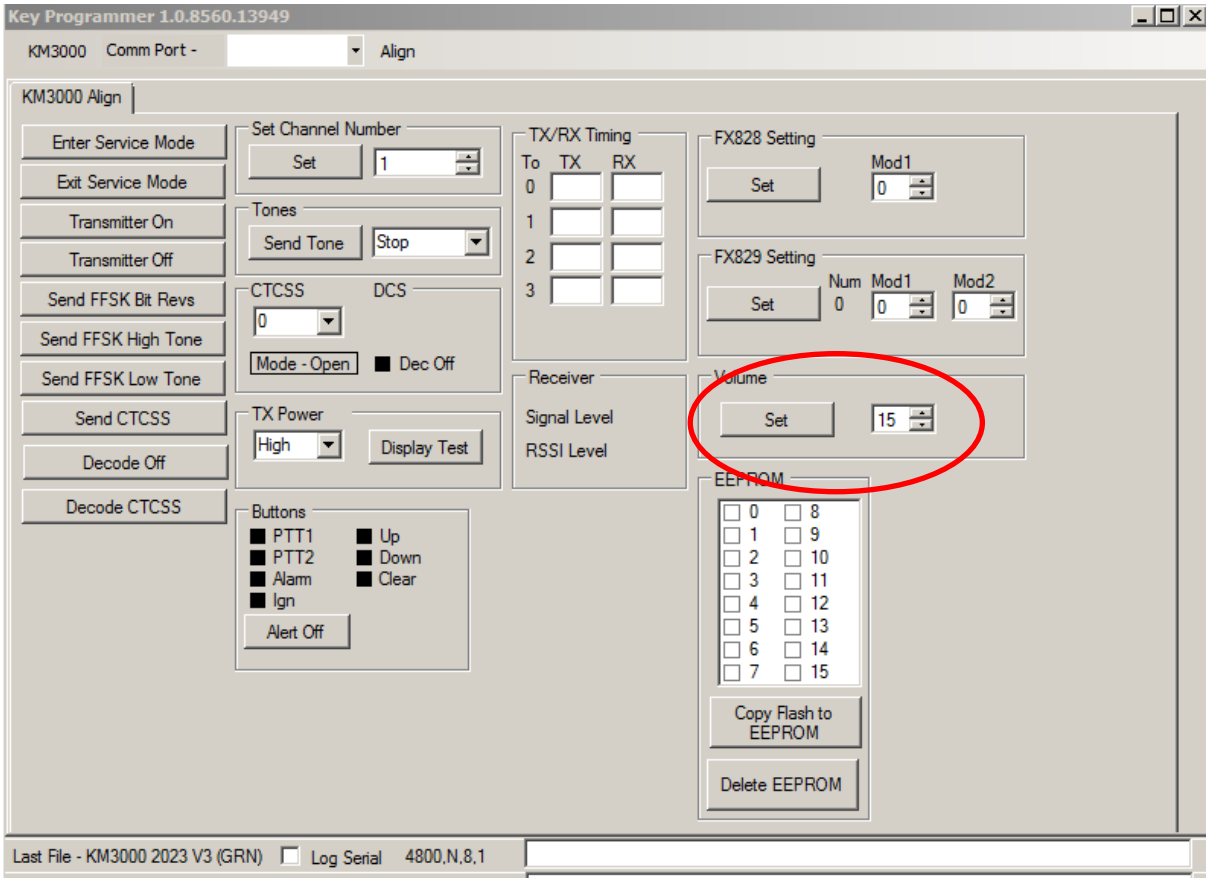


Q. "The volume will not turn completely down on my radio or the volume is too loud or quiet"

Again in common with most ex PMR radios all KM3000/4000 radios have a volume control that does not completely mute the radio when turned fully anticlockwise and residual audio can normally still be heard. The residual level can be lowered using the programming software however this will also affect the maximum volume level.

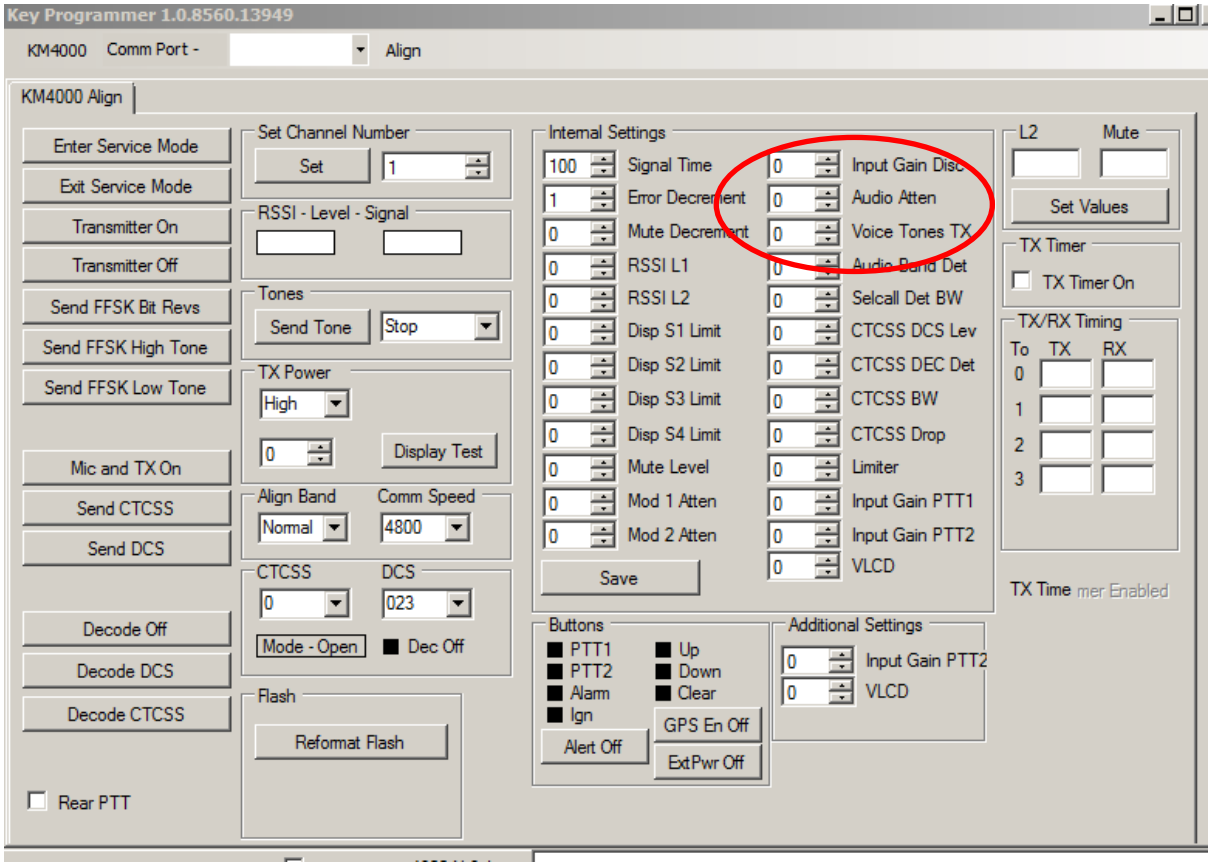
KM3000 volume adjustment

Connect the radio with a programming lead and start the programming software. Select KM3000 from the top left. Then select "Align" from the "Program" button/setting next to the box that displays the COM port selection. **Note this is not the larger "Program button" that is used to write to the radio.** On the "Align" screen you will see a volume set button. Adjust this setting up or down in the box on the right will change the level of audio from the radio. Finally press SET button to send the setting to the radio. A value of 15-20 is normally about correct.



KM4000 volume adjustment

Adjustment of the volume setting on a KM4000 radio is slightly different. Connect the radio with a programming lead and start the programming software. Select KM4000 from the top left. Then select "Align" from the "Program" button/setting next to the box that displays the COM port selection. On the "Align screen you should press the button marked "Enter Service Mode". The radio will read the current values and they will then be updated on the screen. Adjust the value up or down in the box marked "Audio Atten". Change the value by a small amount and press save, then press "Exit Service Mode". The radio will restart and you can see if the new value is acceptable. If not do the same again until it is correct. Remember to save after each change of the value.



Q."I have two radios, one has a bright yellow display and one has a darker bluish green display can I adjust the display contrast".

Backlight levels

The radios do have different display levels and backlight colours; this was changed during the manufacturing period. We check the display level when we test and set up the radios and reject any that are not good prior to sale. Backlight levels are not adjustable and some can appear darker in some light levels and angle of view.

Q. "I have two radios and the scan UP/DOWN buttons seem to be a different way round on one of the radios".

Scan Buttons

The default button direction was changed in the 2023 firmware version. In the 2023 programming software there is an option "Button swap" to reverse the buttons to be the same as the older 2022 firmware. However, the button direction can only be changed using the 2023 software on radios with the matching 2023 firmware installed.

Q. "I have two radios and they appear to have different channels and firmware in them, can I get the firmware updated to make the radios the same?"

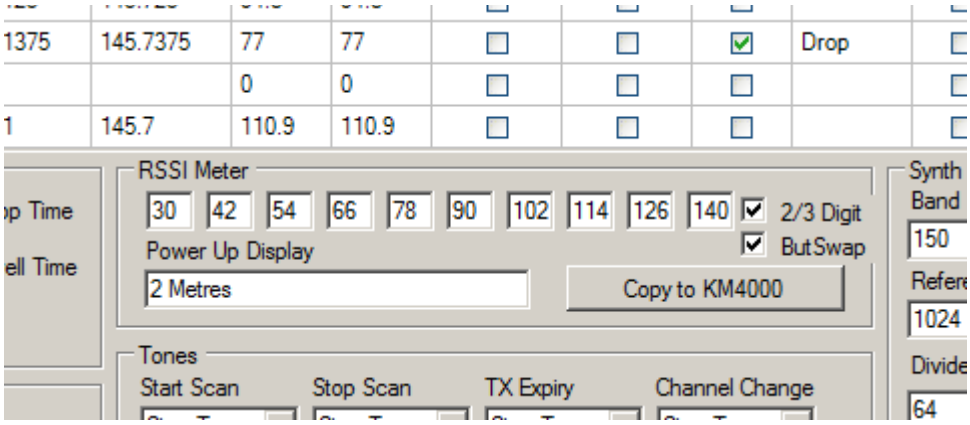
Firmware versions

Two firmware versions have been used to date, the 2022 and 2023 release. For a KM3000, if you contact us at TVRG we can for a small charge send you an exchange 2023 EEProm or if you have the facility to program your own we can email you the updated 2023 file. Alternatively you could copy the 2023 EEProm and write this to the 2022 EEProm.

Updating the KM4000 radios is not as easy as the firmware itself needs to be updated as there is no EEprom. We do not offer the updated firmware file for the KM4000 radio.

Q. "I have two radios and the bar graph display shows different values. Can they be adjusted to be the same?"

The bar graph readout is relative and not that accurate however it can be adjusted.



By changing the values in the RSSI meter section of the programming software you can roughly "calibrate" the bar graph to be more meaningful. Once you have made changes you will need to write to the radio using the" program" button at the top of the page. Also note, for the KM3000 the 2/3 Digit button needs to be ticked, whereas this button should be left unticked for the KM4000 radios.

Q "My radio seems to stop transmitting during my transmission".

Transmit timeout

All KM3000 radios have a transmit timer built into the radio, nominally this is approximately 2 ½ minutes. There is no visual or audible warning that you have reached this timeout. The radio stops transmitting and the timer will be reset when the PTT is de-keyed.

If you wish to know more about the time out function and how it can be removed please download Note 5: KM3000 Yellow and Green time-out modification on the TVRG website.