

The MEDEX VHF Radios

The radios are high quality 2 metre band amateur radio equipment with lots of functions and facilities. I've tried to filter the instructions down to the basics. Ideally all of the radios will be programmed up for just the frequency we will be using, but in case there is a problem I have included some of the more complex set-up instructions. Apologies to those who are conversant with the use of transceivers for the inclusion of some very basic stuff! (though it may come in handy when we're all hypoxic...)

To draw minimum attention to ourselves keep the radios concealed when not in use. At lower altitude, where there are other people around, keep them concealed even when using! Stick to time schedules for communications.

The Basics

Battery pack

Press the button on the top back corner and slide down to remove. The ideal batteries to use are 4 x Lithium AA (non-rechargeable – such as these: <http://www.energizer.com/batteries/energizer-advanced-lithium-batteries>). Alkaline batteries can be used but are heavier, don't last as long and don't work as well in low temperatures. Do not use NiCd or NiMH rechargeable batteries. Batteries work better if not cold - so you may need to keep the radio inside your duvet when it is really cold. Some batteries with small diameter contacts for the negative terminals may not make proper contact in the battery case (specifically the one across the bottom) - check this if the radio won't turn on

Aerial

Never operate the radio without the aerial. The telescopic aerial will give a greater range than the small "rubber" one, but should ideally be used fully extended – or with just one section extended (slightly better than the rubber one). Handle the telescopic aerial carefully – a number have been damaged on previous trips when extending – don't pull too hard!

Turn on

Hold down the orange button for >½ second

Volume

Outer knob on the top

Transmit

Press and hold down the PTT (press-to-talk) button on the top left. Microphone is behind the speaker slots on the front panel - do not talk directly at it, but speak across it so that the wind noises from your speech do not get transmitted. Stand out of the wind. The radios can only receive or transmit at a time - they are not mobile phones where both people can talk at the same time.

Turn off

Hold down the orange button for >½ second

Protocol

Say who you are calling, followed by who you are. "Medex base from Group 2, over". Say "over" before you release the PTT (the other party then knows they can talk). Finish the conversation with "out" (other groups then know you've finished and they can try to make contact).

Speak clearly, think about what you're going to say before pressing the PTT. Be prepared to repeat and spell words (alpha, bravo, charlie etc. !)

Improve communication

Hold the set up in the air. Move to higher ground. Move away from obstructions. Move so that you should have "line-of-sight" with the other radio. Move away from other people (bodies absorb radio waves). Fit the telescopic aerial. Try new batteries

More complex functions - these all follow a very similar procedure, but not necessarily an intuitive one

"Knob"

The centre bit of the rotating knob on the top - used to initiate any setting changes.

½ second press activates the setting process, brief press acts as command input

Un-locking

To unlock the set and allow changes to be made, you press the "F W" button, followed by the "LW LCK" button. You can now activate the setting process (as above).

Re-locking

If you have made changes to the settings you should ideally re-lock the set by repeating the above process

Squelch

Cuts out background noise in receive, and saves battery power by not turning on the audio output for weak or non-existent signals. Adjusting the level improves the chance of receiving weak signals. Once in the mountains (away from electrical interference) the sensitivity can probably be increased.

to adjust

Un-lock the set. Do ½ second press. Turn knob to select "SQL-01" and do brief press. Turn knob to set suitable level (0-15) such that the set just turns off the audio with normal background interference. Terminate with press of PTT. Re-lock the set.

Transmit power

Save battery life by transmitting at lower power. If the other person has difficulty receiving you try setting to a higher power. Suggest L2 or L3 should normally be used. (L1 is the lowest power)

to adjust

Un-lock set. Do ½ second press. Turn knob to select "TXPO-02" and do brief press. turn to "L1, L2, L3, or Hi" depending on what power level you want. Do brief press. Terminate with PTT. Re-lock the set.

Power save

The set should normally be run in power-save mode - if it receives a strong signal it will automatically transmit back in lower power mode. You may need to force it to always use the higher power modes if reception is poor, and you are talking to more than one receiver

to adjust

Un-lock set. Do ½ second press. Turn knob to select "TSAV-13" and do brief press. Turn to "on" or "off" depending on what you want. Do brief press. Terminate with PTT. Re-lock the set. "SAVE" will be displayed on the screen if it is activated.

Re-setting if there are major problems

Re-boot

Clears out all programming and returns to defaults - if all else fails, try this!!

to do

With the set off, press and hold both the knob and the monitor button down (middle button on the left) while turning the set on. "INIT" will display briefly. There is another re-boot sequence which opens the set to its full range of 140-174MHz, but our aerials do not work over this range - so please keep it in its normal range.

If the set does not respond to the reboot sequence it is possible that it has been left in the "Memory Mode". In this mode very few of the normal functions work, and the display may simply indicate a brief text code (e.g. GRP4A). To exit from this, with the set turned off, hold both the PTT button and the "LAMP" button (bottom left) down while turning the set on. The normal reboot can now be done.

Set-up procedure (now that you've trashed everything by doing a re-boot)

I'm assuming by now that you a conversant with the normal control procedure. If not re-read the stuff above

Frequency

Defaults to 144.00MHz - which is what we should be using! The set has two frequency controls (VFOs) - A and B, for us both should be set to 144.

to adjust

Rotate knob to set to 144.00. If you press the "F W" key it tunes in steps of 1MHz. Press "VDO DW" key to select the other VFO, and set this also to 144.00

Power level

Set to L2

Power save

Set to active

Locking set-up

Select what functions/keys are locked

to adjust

Turn knob to "LOCK-15", do brief press. Turn knob to display "KL DL" and do brief press. When the set is locked it will now lock both the keyboard (apart from the keys needed to lock/un-lock!) and the knob. Terminate process by pressing PTT. Do the re-locking as shown above