

Spectrum Reborn user manual firmware for UV-K5 created by Mikhail Yudin (Fagci)

ATTENTION!

Before using this firmware, you need to backup the EEPROM via K5prog, save the original configuration and calibration. This is necessary in case you want to return without problems to other firmware on an original basis. Without these 2 files, going back will be very complicated although it is not impossible, but it is better if you save these 2 files, you will do it much faster. Don't be afraid to make the switch to Reborn because it is a really good firmware, probably better than others in many aspects (but obviously all firmwares are good, each with its own peculiarities and characteristics) and you will not regret having it on your Quansheng . The advantages of this firmware are a greater number of usable channels (300) and 8 scan lists and optimal management of the frequency search even with the use of the truly fantastic spectrum with advanced functions, essential but well-finished graphics, excellent audio clean, FM broadcast radio directly in the memories and many other interesting things and others still to be developed. I remind you that this firmware is still new, the first version was published on December 31, 2023, there is still a lot to do but we are doing very well and the firmware in its current state is really performing and is improving day by day.

To reassure you I can tell you that I myself, DarkMatter, who writes this manual, tested the firmware on my radio and then flashed several other firmwares again and then returned to the Reborn again, without ever having any problems, later I will also write how does the roll-back procedure correctly. So anyone who wants to try it will give it a look, but I'm sure you will like it and probably many will stay on Reborn

Disclaimer:

ALL settings will be overwritten! Your channel list and settings will be deleted and you will have to rewrite everything again (but it can be done in a moment, don't be scared)

By installing the firmware, you confirm that you agree that I, as the author of the firmware, am not responsible for any damage or inconvenience caused.

Mikhail Yudin Fagci

Preparing to use the firmware after the first installation:

While turning it on, press and hold the Exit button to restore the initial settings of this firmware. The reset will take a few seconds, then the radio will reboot and be ready for use.

SPECTRUM REBORN menu

Control functions from any screen

The **M** key with a short press opens the main menu with the list of apps. For convenience you can call them back by pressing the number next to them:

(1) VFO is the simple single VFO with few indications (Fagci calls it retired mode) but it is very elegant and pleasant to look at and still functional

(2) VFO PRO is the single VFO complete with indications and settings, from here it is possible to change the step by pressing 1-7 (from 0.01k to 100.00k), change the squelch with keys 3-9 (from 0 to 9), the BW with key 6 (25k 12.5k 6.25k), change the modulation with key 0 (FM AM SSB WFM), adjust the attenuation by pressing key 8 and the up and down arrows (from 0 db to -43 db -4db by default), again with the 8 key you change the other settings including compander 1-0, microphone amplification from level 0 to 15. Exit to exit these settings. All changes on the VFO Pro also affect the relevant Preset

(3) 2VFO is dual vfo. Displays 2 different frequencies or memories.

There is currently no dual Watch. You go from VFO A to VFO B quickly with the exit key or with key 2 pressed for a long time. By pressing button 3 for a long time you change from VFO mode to MR mode and from the memory you go directly to its frequency in the VFO. From MR mode you can recall a memory by typing its number followed by M for the first 30 memories, for the subsequent ones just write the digits

(4) CH scan this app scans the frequencies in memory of the active list

(5) Spectrum Band – the spectrum divided into bands adjusted by the presets is useful for seeing what is happening in a specific portion of the band. You move from one band to the next using the up – down arrows. The audio is muted by default (no listen) while the app scans the spectrum relating to the preset (the name of the preset is at the top left) in the top center is the active frequency. To activate listening, press the side FN1 key for 2 seconds. To blacklist a frequency and skip it, briefly press the FN1 key. If the frequency is good but you want to move forward, press FN2 and it will be saved separately in the Loot with a + sign next to it. To view everything press * and you will see the captured frequencies, in this screen scroll with the up and down arrows and you can delete with the 0 key, or put in the black list (- sign) with FN1, save the frequency in memory with the key 5 by choosing a free position of your choice. With the 0 key it is possible to make changes to the various presets from spectrum. Your changes are automatically saved when you exit.

(6) Spectrum Analyzer – A bit similar to the Spectrum Band but it is not linked to the presets and analyzes the currently active frequency. It is still in its embryonic state to be developed in future versions with specific functions

(7) Freqcatch captures frequencies. The operation is similar to that of the original firmware, it captures the frequency of a nearby radio

(8) Loot is the list of frequencies captured in the various scans. It is temporary and resets every time the radio is turned off. Loot management with deletions and saves is similar to that seen in the Spectrum Band

(9) Scanlist – App that regulates scan lists. In Reborn there are 8 available lists. To manage, long press the 0 key. All the loaded memories will be displayed, scroll with the up and down arrows and assign a number from 1 to 8 to the memory that interests you, you can also connect multiple lists to each memory. Example: I put the number 3 next to all the PMR and LPD memories when I scan with CH scan and the active list is 3, it will only scan those channels. The memories can also be in multiple lists at the same time or even put all the memories in a single list. To remove a memory from list 1 you must press key 1 and so on. To make a list active, press the button with the list number for 2 seconds.

Now that list will be active in Ch scan.

(10) Presets This app adjusts the settings of each frequency portion divided into groups called presets. There are 30 presets for 30 frequency groups. Each group of presets shares the same Step, modulation, BW, transmit power, gain and squelch settings. The presets are editable by the user. It is very important that the presets are well adjusted and with the right settings and above all that they are not overlapped with each other. Any frequency portions not included in the presets acquire the default settings

(11) Antenna len – App for a simple calculation of the antenna length in relation to the frequency. Useful for adjusting the length of telescopic antennas

Global Settings:

M key pressed for 2 seconds -

(1) Upconverter setting for use of an external upconverter, corrects the displayed frequency in relation to the type of upconverter. Leave it on none if the converter is not connected. Or enter the frequency of the converter you have

(2) Main App – Return to the general menu :-)

(3) SQL open time – noise suppression level open time

(4) SQL close time – noise suppression level closing time

(5) Scan single Freq time

(6) Scan list time

(7) Scan after close time

(8) Brightness – screen brightness level

(9) BL time – backlight time

(10) BL SQL mode - backlight with squelch

(11) Filter bound – applies change between VHF / UHF at 240 MHz or 280 MHz

(12) Beep on or off

(13) Battery calibration

(14) Bat Type – select the battery type between 1600mAh 2200mAh 3500mAh

(15) Bat Style – plain - percent – voltage

(16) Eeprom reset – Yes or No. (This reset can also be done by turning on the radio with the exit button pressed) it erases everything, memories and settings.

Using keys in SPECTRUM REBORN

M key = short general menu, long global settings menu, confirm ok

UP and DOWN arrows = In memory mode (MR) moves between channels.

In VFO mode moves between frequencies, navigates through menus

2 long = switching between VFOs

3 long = VFO/MR switching

0 long = changes the type of modulation

0-9 = enters the desired frequency, confirming with M

Exit – Change VFO selection – exit from any menu and app

FN1 = monitor key, in scan and spectrum mode blacklists

FN2 = flashlight, in scan mode and spectrum puts in emergency mode

F = save channel and settings

HOW TO WRITE THE FREQUENCY CORRECTLY

from the VFO mode screen, enter the frequency and confirm with M

in case of comma use the * key

example to write 145.000 mhz type 145M

to write 145.500 type 145*5M

to write 1296.300 type 1296*3M

SAVE A FREQUENCY IN MEMORY or change VFO settings

F- VFO options allows you to save the frequency to a memory location

press F, the menu will open where you need to set:

RX freq (leave it like this, it already indicates the reception frequency)

TX freq Transmission frequency. Leave 0 if you want to transmit on the same RX frequency or set the TX OFFSET

TX offset put the offset or shift value (example: 1.600)

TX offset dir shift direction (+ or - or unset for no offset)

TX Power transmission power Low - Mid - High

Step insert the step (it is already in the preset)

Modulation choose between FM AM SSB WFM (only for 64-108 MHz)

BW bandwidth 25k 12.5k or 6.25k

SQ type preferably leave it like this or try the other types

SQ level squelch noise attenuation

Save - Pressing save sets the channel where to save the frequency, you can assign a name with the keyboard or confirm leaving the same frequency displayed

Even in MR mode, you can save or modify a memory in the same way

Most of these changes are also saved in the frequency-determined PRESET.

Usually you don't need to change anything if everything is fine on that preset

FREQUENCY SCANNING

This firmware has excellent management of rapid frequency scanning connected to the recorded presets. To start scanning from VFO mode you must press the * key for 2 seconds, rapid scanning will start starting from the frequencies of the active VFO. The radio searches for signals in the preset field (the name at the top left) and will stop when a signal exceeds the SQL level. With the FN1 key you blacklist an unwanted signal and the scan continues continuously only between the frequency limits of the specific preset. By briefly pressing the * button you see the list of captured frequencies, in the same way we saw for the Band Spectrum you can see and save or delete the frequencies. While the scan is in progress you can change the search by writing a frequency on the fly and the scan will resume in the new preset. Example while I am scanning the 2m Ham preset I write 430 M and it will start scanning on the 70 cm preset, I write 434 M and it goes on to scan the LPD preset. Scanning can also be done from MR mode and by moving between channels you can change from one preset to another continuously and quickly.

PROCEDURE FOR A CORRECT ROLL-BACK

If you want to go back to a previous firmware based on the original version and therefore different from the Spectrum Reborn, follow this procedure:

From Spectrum Reborn, turn off the radio, hold down the 7 button and turn it back on again. The deep reset procedure of the eeprom to 0xFF will begin. When it's finished, turn the radio off again and turn it on again, putting it in DFU programming mode and send the firmware you want. Still using K5prog (v.26) you must now send the calibration and then the configuration that you saved at the beginning. Ok finished, turn on the radio, but what a shame the Reborn is really good

Conclusion

I hope I have been of help by writing this guide, which is concise but still long and probably incomplete, but the best way to understand things is to try it yourself, then everything is easier than it seems. I thank Fagci very much for its incredible work and also all the developers in general who, without asking for anything, do so much for us. Greetings 73 from Dark Matter