

ORGANIZZARSI IN GRUPPO



v.2025-11-13

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1 INTRO

This firmware installs on [QuanSheng K5](#) (8), K6, Plus, [99](#), 88 radios. Its purpose is to change the ergonomics and functionality to a prepper for **emergency operation**. Simplified for the impractical and implemented with phone-like functions.

1.1 WHY?

We cannot be certain that we are safe from a catastrophe, natural or man-made. There are various precautions we can take, such as [food supplies](#), [emergency backpack](#), car tank never below half full, etc.

One element is often overlooked, communication. Nowadays we are spoiled by the mobile phone that keeps us in instant communication with the whole world, but if there is a power failure, repeaters will no longer be able to ensure this communication. And this is where two-way radios become indispensable to create a minimal network of long-distance communication and mutual aid in order to save lives.

Our project is to help set up this network in advance by giving all the tools designed for it, such as radio, modified firmware, manual and communication procedure.

Radio purchase link, [Amazon](#), [Aliexpress](#). And the [programming cable \(type Kenwood\)](#).

We encourage you to purchase one of these transceivers, create a radio communication network and learn the procedures we explain in this document.

1.2 Radio Basics

QuanSheng UV-K5: we chose this radio for its value for money and versatility. In fact, the possibility of being able to rewrite the firmware is what made it possible to create an easy-to-use, emergency-oriented radio.

On a negative note, the radio is neither waterproof nor submersible. This means you will have to protect it from water. In the future, we hope to find a waterproof equivalent or a waterproof case.

The radio simply switched on does not emit anything. It is therefore a harmless device. When transmitting, it emits light electromagnetic waves, but it is preferable to stay a few metres away from a computer or other sensitive equipment.

The best transmission takes place at 'optical range'. It means that without obstacles, with low power, you can reach even tens of kilometres. On the other hand, the more obstacles, walls, etc. are placed in the way, the shorter the range will be. In a city, you can hope for a maximum of 2 km.



1.3 PrepperRadio Firmware Quick Start Guide

You have probably already read the user-manual-PrepperRadio.pdf and also user-manual-PrepperDOCK.pdf, Well, we will now explain the few buttons and menus that you absolutely must know in order to use the radio.

- Knob on top of radio: turns radio on and off. Turning adjusts the speaker volume.
- **F** + **6 H/M/L**: transmission power selection. The initials x p L M H appear below the frequency (extra Low, PMR, LOW, MID, HIGH). Use as little as possible to save battery power and limit the range of interference with others. For example, if the connection is bad in x, but good in L, it is pointless to put in M or H.
- **F** + **M**: Activates the Messagy function.
- **F** + **9 Call** Contact address book for selective calls.
- **L1**: long pressure, turns on the white light. Useful if you do not have a torch.
- Menu **Radio Config** → **Squelch**.
This is a kind of filter that eliminates background noise. The lower the number, the lower the tolerance threshold. Zero means that the squelch is not active and you will hear any electromagnetic signal in a continuous hiss. When the received signal strength falls below the selected threshold, reception is muted. If the threshold is too high, there is a risk of suppressing even useful but weak signals.
- Menu **Radio Config** → **My ID**.
Radio identifier for selective calls. Up to 10 characters and only numbers from 0 → 9 are allowed. Zero stands for NULL = unreachable via selective calls.
- Menu **Radio Config** → **Call Ch**.
Call Channel to be set in common agreement with the group. This is the meeting call channel.
- Menu **Radio Config** → **Batt Save**.
Sets the battery saving level. Values from 0 → 4. The lower the value, the better the radio behaves with selective calls and messages. Better to stay between 0 and 1. The higher the value, the more battery is saved.
- **PTT**: button located on the top left-hand side, serves simply to call.

We propose to print, fold and laminate the memo card where the main functions of the radio are listed. PrepperRadio-Memo.pdf

2. Firmware and configuration files

For this purpose, we have developed a configuration file simultaneously with the firmware that allows you to have a complete and simple radio. The whole group will have the same radio, the same settings, the same frequencies, which makes it easier to create a communication network without having to assimilate the knowledge of an amateur radio operator.

2.1 Configuration file

Loading the configuration file provided allows you to optimise your radio not only for Prepper use, but also to create a homogeneous network among all PrepperRadio owners. It is a set of adjustments and band plans designed to have a radio ready for use. To be installed in all radios in the group.

It is loaded by means of the PrepperDock programme supplied in the package, procedure explained in the manual “user-manual-PrepperRadio--.pdf” chapter 2.4. Do not use CHIRP as it is not compatible with this firmware.

⚠ There are several configuration files (.eeprom) in the folder. This is because each country or territory in the world has its own legislation regarding free and emergency frequencies. Therefore, choose the configuration file suitable for your area.

With the configuration file: Config_PrepperRadio-for_ITALY.eeprom we have:

1. **PMR446 TX** enabled.
2. **Switch on, select Call Channel**, means that the radio reverts to the default Call channel each time it is switched on.
3. **Filter Messages**, will receive the message only The recipient and not everyone.
4. **Mic AGC**: Automatic gain control for the microphone.
5. The side buttons are configured like this:
 - L1 Short : BttSav Paus
 - L1 Long: FLASH LIGHT
 - L2 Short: NONE
 - L2 Long: BANDWIDTH
6. **Band Plan**.
 - The first blocks of frequencies are those that are free for use in your country. Find out about local regulations to avoid misuse.
 - Listed below are the emergency frequencies where you are most likely to find people listening. **Use only in an emergency!**

► Home Channels (Direct)

Home channels, also called Direct, are international meeting channels, a frequency where you are more likely to find people listening. A bit like the town square.

Name	Frq (MHz)	info
Home UHF	433.500	= Channel 18 LPD
Home VHF	145.500	

- Memo 183 to 200: Maritime canals in common use, may be useful in emergencies at sea or in the vicinity of ports. Named **Sea 8**, ...
Use only in an emergency!

3. PROCEDURE

3.1 How to get organised

Like any emergency tool, it is not enough to have it at home and stay calm, one must be familiar with its use before the emergency.

One of the methods we propose is to organise in advance into groups of people, by neighbourhoods, villages or areas where radios can communicate, and to rehearse from time to time.

Guidelines on how to get organised

1. Create the group of people, whether preppers or just risk-aware people.
Strengthen the group by also replicating it on the Telegram app or similar.
2. Make a purchase of these QuanSheng UV-K5 radios and some programming cables, then upload the firmware and calibration files, as per the manual.
3. Print out the PrepperRadio manual and this protocol for everyone and read it in meetings.
4. Then decide together what the group's Call channel will be.
5. Set all radios to the exact same address book in the Contacts menu.
 - For this it will be necessary to keep a register where the name of the people, their radio nickname, their ID and what channel they will be on for communication is written down. Possibly also physical address and other info that you find useful.
On the Home screen you will find a table to print out ready for that use:
`Contact_List_PrepperRadio.pdf`
 - Make sure everyone knows how to set it up in the radio, do it in a meeting all together.
 - Share this register in both file and paper form.
6. Carry out communication tests in presence to ensure that everyone has understood how to use the radio with the PrepperRadio firmware.
7. Make communication tests at a distance, e.g. from home, and make sure that everyone has successfully communicated.
8. Decide together on a recurring date to rehearse, for example, every end of the month or every 6 months, you see.
9. Keep the radio always ready, always charged, those who wish also always switched on.
10. In the event of an emergency, always keep it switched on to organise between group members.

Power supply

These radios run on electricity; used while listening they can last up to four or five days, but while transmitting no more than a day. It becomes essential to have an alternative power source in the event of a power failure. Here are a few examples of solutions: universirius.com/preppers/prevenzione

Emergency backpack

Of course, the radio alone will not miraculously save you from everything, but it will be the binder of all rescue and mutual aid activities among you. Therefore, to complete your equipment for a safer passage through an emergency situation, we encourage you to keep an emergency backpack at home with your radio inside.

Here is a link explaining how to package it. <https://www.universirius.com/preppers/zaino-demergenza/>

3.2 Emergency procedure

Personal priorities

1. Rescue yourself with your emergency backpack.
2. Connecting with others.
3. Apply the social precedence procedure.

Social precedence

1. Make radio or physical contact with everyone in the group.
2. Create an information centre for the population.
3. Establish an agreement with the police.
4. Restore roads and other communication routes.
5. Bringing in and distributing drinking water and food supplies.
6. Evacuate people.
7. Provide accommodation for displaced persons.
8. Provide accommodation for rescuers and volunteers.
9. Securing houses from looters.
10. Establish a safe place for waste.

4 Regulations

In 2020, certain frequencies have finally been freed up. In practice, it is no longer necessary to make a declaration to ministry of communications and to pay a fee of 12€ to use a transceiver. Free frequencies, but under two conditions:

1. The antenna of PMR446 and LPD433 (UHF band) radios cannot be removed.
2. Respect the power assigned to each band of 0.5 watts.

However, in the event of an emergency, European legislation allows unlicensed persons to use amateur radio frequencies and equipment, with certain conditions and limitations:

- **Emergency Situations:** In real emergency situations, such as natural disasters or serious accidents, it is permitted to use radio frequencies to request help. This is also valid for those who do not have an amateur radio licence, provided that the distress call is legitimate and not a false alarm.
- **Coordination with Authorities:** It is essential that the use of frequencies is coordinated with the relevant authorities, such as emergency services or Civil Protection. In some situations, specific protocols may be established to ensure that communications are effective and orderly.
- **Usable Frequencies:** During an emergency, in addition to the amateur radio bands, other bands such as the VHF and UHF bands designated for emergency communications may also

be used. For example, the VHF bands 169.075 to 173.9375 MHz and UHF bands 450.400 to 469.275 MHz are specifically designated for such purposes.

Final remarks

Although it is possible for any person to use a two-way radio in an emergency, it is important to remember that the use of frequencies must be responsible and justified. In emergencies, timely communication is crucial, but improper use of frequencies can cause interference and further complicate the situation.

Electronic Communications Code (Legislative Decree No. 259 of 1 August 2003). In particular, the article that deals with assistance during emergencies is Art. 142.

European regulations, European Commission Decision 2006/771/EC.

International Practices

Internationally, the principle is similar. In many jurisdictions, amateur radio operators are recognised as crucial resources during emergencies and can operate without a licence to ensure effective communications.

Stay calm and switch on the radio!



<https://t.me/+3S1rKwPf-2AxMTJk>

