



Wanting to bring your own radios to a race or rally? Make sure you're legal first.

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Marshals, spectators and others may be tempted to bring their own walkie talkies and other two way radios to events in order to stay in touch with others in their group. This document should not be considered an endorsement of the use of these unofficial radios. But it is well known that due to the easy availability of cheap 2 way radios people are using them. I also know that when used appropriately they can be very useful. But I have also witnessed unlicensed and illegally programmed radios being handed out to others to use. It is quite possible that this happened because the owner of those radios was unaware of the regulations around radio use in the UK. So, I have prepared this document to explain what is, and what is not legal as well as offering some guidance on a couple of other areas that can cause problems.

But before going further a quick reminder that you should never use unofficial radios for event safety and you absolutely must ensure that your radios will not cause interference to or disrupt the running of the event in any way. If in doubt – don't take it! But if you do take radios – listen for a few minutes on any frequency you wish to use to check that it is clear before you start transmitting.

# USE IT RIGHT. USE IT LEGALLY. STAY SAFE. STAY LEGAL.

ILLEGAL = CRIMINAL OFFENCE



! The illegal use of a radio transmitting device is a criminal offence

LICENCE REQUIRED



✓ The use of most two way radios requires a licence to be considered legal

CHEAP COULD MEAN ILLEGAL



! Most cheap radios sold online are illegal to use without a licence

LICENCE FREE OPTIONS

CB RADIO



PMR446 RADIO



✓ ONLY CB and PMR446 radios can be used legally without a licence

CHECK THE CERTIFICATE



✓ To be legal any radio you use must have a "Certificate of Conformity"

GET ADVICE. BUY RIGHT.



✓ If unsure, seek advice or buy from a reputable radio dealer

! USE THE RIGHT RADIO. FOLLOW THE RULES. PROTECT YOURSELF AND OTHERS. 📡

## Quick Summary

- The illegal use of a radio transmitting device is a criminal offence
- The use of most two way radios requires a licence to be considered legal
- Most cheap radios sold online are illegal to use without a licence
- **ONLY** CB and PMR446 radios can be used legally without a licence
- To be legal any radio you use must have a "Certificate of Conformity"
- If unsure, seek advice or buy from a reputable radio dealer



### **Radio Use Is Regulated**

Radio frequencies are managed to prevent interference with:

- Aircraft communication and navigation
- Emergency services and user services
- Event organization

Almost all two way radios require a licence and that licence will specify the frequencies you can use. Licensing exists to prevent interference to other radio users. On the wrong frequency, a low powered handheld radio can cause interference to others many miles away and you may not be aware that it is happening. An incorrectly programmed radio could interfere with an aircraft's ability to correctly receive a navigation beacon 100 miles away



## The Problem With Cheap Radios

Very cheap radios are widely available online.

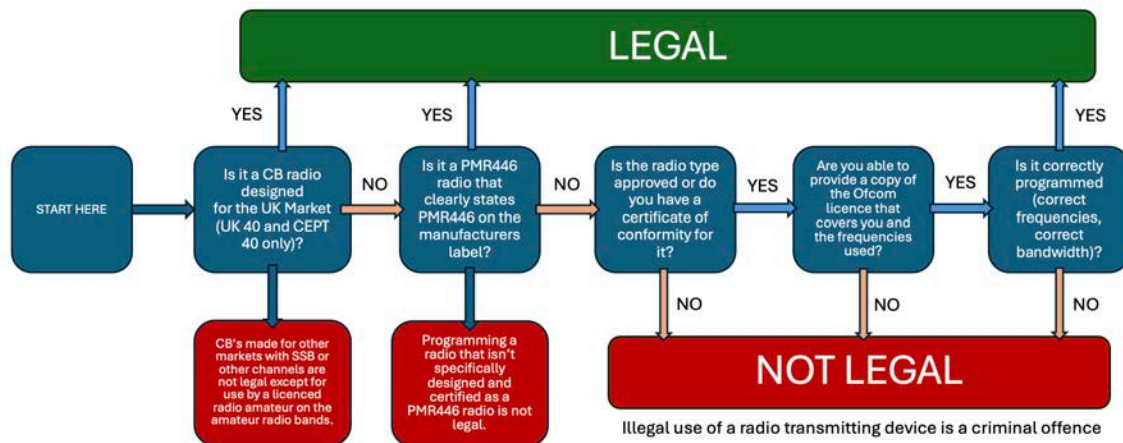
### **Important:**

Just because a radio is sold in the UK it does not mean it is legal to use!

Many sellers:

- Mislabeled radios as licence-free
- Sell programmable radios as PMR446
- Sell radios that do not meet the standards necessary to prevent interference to others
- Do not explain legal requirements
- Are unable to provide a certificate of conformity for the radio

## Use The Flow Chart To See If You Are Legal



### Licence-Free (Licence Exempt) Radios

You can use these without a licence:

#### **PMR446 Radios:**

- Small handheld radios
- Short range (~2 miles but may be much less if there are obstructions)
- No programming required
- Will state “PMR446” on the product label

#### **CB Radios:**

- Handheld and mobile radios
- Longer range
- Suitable for rural use

## What Is NOT Legal Without a Licence

# ⚠ YOU CANNOT LEGALLY USE: ⚠

PROGRAMMABLE RADIOS SET TO PMR446 CHANNELS (FOR EXAMPLE UV-5R)	GENERAL-PURPOSE VHF/UHF RADIOS	RADIOS WITH WIDE FREQUENCY RANGES (E.G. 136-174 MHZ OR 400-470 MHZ)	AMATEUR RADIOS WITHOUT AN AMATEUR RADIO LICENCE
			
 These radios can be reprogrammed to transmit outside the legal PMR446 limits.	 General-purpose radios are not type-approved for license-free use.	 Radios with wide frequency coverage can transmit on frequencies that require a licence.	 To use amateur radios you must hold a valid Amateur Radio Licence.

**ILLEGAL USE IS A CRIMINAL OFFENCE**

 Always use radios that are type-approved for license-free use in the UK.

You cannot legally use:

- Programmable radios set to PMR446 channels (for example UV-5R)
- General-purpose VHF/UHF radios
- Radios with wide frequency ranges (e.g. 136-174 MHz or 400-470 MHz)
- Amateur Radios without an Amateur Radio Licence

## How to Tell if a Radio Is Actually Licence Exempt

Legal PMR446 radios:

- **CLEARLY** marked as **PMR446** on the manufacturers label
- Not programmable across other frequencies
- Fixed antenna



### Warning signs – NOT legal:

- VHF/UHF or dual-band labels, not legal, PMR446 is UHF only
- Frequency ranges listed, for example 136-174Mhz or 430-470 Mhz, not legal, PMR446 uses fixed channels
- Requires programming software, PMR446 radios are not programmable

### Example

The Baofeng BF-88E is sold as a PMR446 licence exempt radio. There is an almost identical looking radio called the BF-888S that is not licence exempt. And some sellers may claim that their BF-888S radios are PMR446 compatible when they are not.


Even though these radios look the same the small difference in the model name matters.

What's the difference between CB and PMR446 (see also appendix I)

# PMR446 VS CB RADIO

TWO POPULAR CHOICES – DIFFERENT PURPOSES


## PMR446



- Short range
- Best for events and small site work
- 16 Channels
- Digital PMR446 radios with encryption for privacy are available (more expensive)

Ideal for short range communication on events, venues and small sites.

## CB RADIO



- Longer range
- Better across countryside
- More expensive equipment
- Longer antennas needed for best efficiency
- Interference from other users can be more common

Ideal for longer range communication across open areas and rural locations.

**VS**

**i** CHOOSE THE RIGHT RADIO FOR YOUR NEEDS | Consider range, environment, budget and how you'll use the radio.

### PMR446:

- Short range
- Best for events and small site work
- 16 Channels
- Digital PMR446 radios with encryption for privacy are available (more expensive)

### CB:

- Longer range
- Better across countryside
- More expensive equipment
- Longer antennas needed for best efficiency
- Interference from other users can be more common

## Are All Cheap Radios Legal?

Some are, but many (most??) are not.

CE or UKCA marks do not guarantee compliance (they should but sadly cannot always be trusted).

Many are cheap counterfeit copies of the original item.

Often pre-programmed with frequencies not legal to use in the UK.

Again: **It is not illegal to sell them, but may be illegal to use** and it is up to the user to ensure they are compliant.

If unsure, buy from a specialist radio dealer, not ebay, Temu or Amazon.

## Licensing Options

# OFCOM UK SIMPLE LICENCE

A SIMPLE, LEGAL WAY TO USE TWO-WAY RADIOS FOR YOUR ORGANISATION



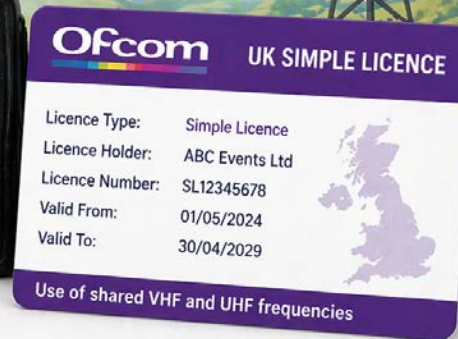
AROUND  
**£75**  
FOR 5 YEARS



COVERS  
BUSINESSES,  
CLUBS, TEAMS OR  
ORGANISATIONS



USES SHARED  
VHF AND UHF  
FREQUENCIES  
(NOT PRIVATE)



Ideal for businesses, clubs, teams, schools,  
security, event organisers and other organisations  
that need reliable two-way radio communication.



Ofcom UK Simple Licence:

- Around £75 for 5 years
- Covers businesses, clubs, teams or organisations
- Uses shared VHF and UHF frequencies (not private)

A business, club or organisation can take out a single UK Simple licence and then that licence can cover everyone within the business or organisation. Be aware that every holder of this type of licence will be able to use the same frequencies as you. The frequencies are not allocated exclusively to you and you should not consider them to be private. It is also worth considering that if you are taking your radios to an event that one or more of these frequencies may be being used by the event organisers in some kind of official capacity. While you have as much right to use the frequency as they do, it would be inconsiderate to simply just start transmitting on a frequency being used to help run the event. So you may need to change channel or possibly just avoid using your radios altogether out of courtesy.

It is worth considering that no frequency, licenced or not should be considered private. Anyone can buy a radio scanner and your radio signals may travel many miles, so many people may be listening to your transmissions.

In addition very few frequencies are issued exclusively to radio users. Most frequencies are shared although Ofcom will try to geographically separate users of the same frequencies.

You may need to find someone to assist with programming your radios for you. It is very important that they are correctly programmed to ensure that you comply with your licence terms.

## Certificate Of Conformity

# WHAT IS A RADIO CERTIFICATE OF CONFORMITY?

It's a document from the manufacturer that confirms the radio you are using meets UK and EU legal requirements and can be **used legally**.



### CERTIFICATE OF CONFORMITY

The manufacturer declares that the radio equipment:

- ✔ Complies with relevant UK and EU radio equipment regulations
- ✔ Meets essential requirements for safety and performance
- ✔ Is safe to use and will not cause harmful interference

**CE****UK  
CA**

Manufacturer: ABC Radiocomms Ltd  
Model: RT-446  
Frequency: PMR446  
Signed: *[Signature]*  
Date: 01/05/2024

#### WHY IT MATTERS

- ✔ Confirms the radio meets legal standards for use in the UK.
- ⚖ Helps protect you from using illegal or non-compliant radios.
- 📡 Reduces the risk of harmful interference to other users.
- 🛡 May be requested by authorities if you are asked to show your radio is legal.

✔ **ALWAYS CHECK**  
Make sure your radio has a Certificate of Conformity from the manufacturer. Without it, you could be using an **illegal** radio.

**LOOK FOR THESE ON YOUR RADIO OR IN THE PACKAGING:**  

  
CE Mark

  
UKCA Mark

  
WEEE Symbol

  
User Guide

  
Certificate of Conformity

✔ **LEGAL RADIO. SAFE RADIO. USE IT RIGHT. USE IT LEGALLY.**

If Ofcom decide to inspect your equipment you may be asked to produce a “Certificate of Conformity” for every radio you have. This is a certificate that shows that the equipment meets the required technical specifications. Sometimes these will be available from the radio manufacturer and/or may be included within the radios instruction manual. If you cannot get a certificate of conformity or a similar document that shows the radio has been tested to the relevant standards on the frequencies you intend to use for your radio then it is not legal to use in the UK. Any reputable radio supplier should be able to provide certificates for the equipment they sell. But may find it difficult to obtain genuine certificates for many of the cheap Chinese made radios sold on ebay/Temu/Amazon etc.

## **Radio Hire**

Another option is to hire radios as and when you need them. When you hire radios the suppliers licence will normally cover your use of the radios. There are around 40 channels used for handheld hire radios across the UK, so again there is no guarantee that the channel you want to use will be empty, but generally issues are rare and it is unusual to find that you cannot find a clear channel to use.

## **Security**

If you do need to secure your communications for privacy reasons then you can use radios that support digital modes that include encryption under the UK Simple licence. Generally encrypted radios are more expensive and programming more complex. So, unless you are knowledgeable in this area this would be something to discuss with a reputable radio dealer

## Radio Best Practices

**RADIO BEST PRACTICES**  
CLEAR COMMUNICATION. SAFE OPERATIONS.

- 1 CHECK THE FREQUENCY IS CLEAR**  
Ensure the channel is clear before transmitting.
- 2 LISTEN BEFORE YOU TALK**  
Always listen for a few seconds to check if someone else is already talking.
- 3 KEEP TRANSMISSIONS BRIEF AND TO THE POINT**  
Share only the information that is needed—clearly and concisely.
- 4 THINK ABOUT WHAT YOU WANT TO SAY BEFORE YOU TRANSMIT**  
Plan your message in your head first to avoid confusion and unnecessary chatter.
- 5 SPEAK SLOWLY AND CLEARLY**  
Speak at a normal pace and clearly. This helps others understand you the first time.

**GOOD RADIO PRACTICE KEEPS EVERYONE SAFE AND INFORMED.**  
BE CONSIDERATE. BE PROFESSIONAL. BE HEARD.

The most important thing you can do with a radio is listen.

When you arrive at an event spend some time listening on the frequency or channel that you wish to use to make sure that it isn't being used for some other important purpose.

Test and check your radios before you leave for the event, don't block a channel with test transmissions or attempts to fault find.

Remember that in most cases your radio conversations can be overheard by others, so don't discuss private or personal matters and be wary of passing information about incidents or accidents, use a phone for these things if you can.

While you are transmitting no one else can use that channel so keep it brief and to the point.

Speak slowly and clearly, if you rush others may not understand you and you may have to repeat the message.

Don't operate your un-official radios right next to official radio points. You could cause interference and your radio usage may be distracting to an official radio operator.

## CTCSS Tones

CTCSS tones are frequently used on PMR446 and other business radio channels (such as those covered by the UK Simple licence) to help filter out other users of those channels and to prevent annoying bursts of static noise. Sometimes they are called “Privacy Tones” but they do not add any privacy, they just stop you from hearing other users. When using PMR446 and business radio with CTCSS it is important to know how to use the tones correctly as CTCSS tones can prevent you from hearing others using the same channel as you. This makes it possible for you to inadvertently cause interference to another user as you will not know of their presence on the channel.

### 1. What Is CTCSS?

CTCSS (Continuous Tone-Coded Squelch System) is a feature in radios that helps you only hear your own team, even when many people are using the same channel.

Think of it like a filter:

- Everyone is talking on the same channel
- Your radio only lets through transmissions with the right tone

### 2. Why Do We Use It?

Without CTCSS:

- You hear everyone on that channel
- It becomes noisy and confusing

With CTCSS:

- You hear just your team
- Communication is clearer and easier

### 3. Important Note

**CTCSS is NOT private or secure.**

Other people can still hear you. It only controls what YOU hear.

### 4. How To Set Your Radio

Set two things:

1. Channel (or Frequency)

## 2. CTCSS Transmit Tone and CTCSS Receive Tone (sometimes called Tone or PL)

Everyone in your group must use the same channel and tone.

## 5. Common Problems

You hear nothing → Check channel and tone

Others hear you but you can't hear them → Tone mismatch

You hear everyone → Receive Tone not set

Because you can't hear other users on the channel, you inadvertently transmit over the top of their messages causing them interference (and vice-versa).

## 6. Monitor Button

This button or menu function lets you hear everything on the channel. Useful for checking activity or troubleshooting. It is very important when you are at a new event or location to use the monitor function to check for other users on the same channel that your CTCSS tones may mask.

## **APPENDIX.**

### **What Is PMR**

PMR stands for Private Mobile Radio and is a term used to cover all types of business or professional radio use. PMR radios may be VHF or UHF, may be handheld or installed in a vehicle. There is a subset of PMR that uses 16 channels around 446 Mhz and this is often referred to as PMR446. "PMR" does not always refer to PMR446 radios, PMR may be other radios different to PMR446. The similar term PBR – Professional Business Radio may also be used in place of PMR.

### **PMR446 Radio Quality**

Because of the low transmit power of a PMR446 radio the quality of the receiver in the radio can make a very big difference to the range. The receiver in most of the very cheap Chinese brand radios is often quite poor compared to the more expensive Motorola, Icom, Hytera and Kenwood PMR446 radios. These better quality PMR446 radios will often work over considerably greater ranges as a result.

### **Chinese Brand Radio non-compliance.**

To be able to legally use a two way radio under any UK Ofcom licence the radio should have a "Certificate of Conformity". This is a certificate from the manufacturer or supplier that gives details of the testing done to show that the radio complies with the regulations and specifications. Unfortunately, there are many Chinese brand radios that claim to be compliant with these specifications, but when independently tested are found to not be compliant. Often the most common failures are that the transmitted signal is too wide or that there are unacceptably strong secondary transmissions on other frequencies. Business Radio channels in the UK are normally narrow band and closely spaced. A radio that is too wide may interfere with several adjacent channels every time it transmits. Many countries are now starting to ban the import of many of these radios including the very common UV-5R and BF888 type radios so often seen for sale in the UK for less than £25.00.

Unfortunately, without test equipment it is impossible to know which radios do actually comply and which do not. If there is no credible Certificate of Conformity that includes the frequencies you wish to use, then it should be assumed the radio is not compliant and therefore not legal.

## **Improper Programming**

If a radio is incorrectly programmed, it may not perform as it is supposed to. Or it may transmit on frequencies it should not.

Often when you buy a cheap, programmable Chinese radio it will be programmed with factory test frequencies that are not normally legal to use in the UK (some are UK fire service frequencies), so these will need to be changed to match the frequencies in your licence. In addition, it is possible to buy radios that can receive the Motorsports UK 81Mhz channels as well as transmit on regular VHF and UHF channels. Some of these radios also appear to be able to transmit in the 81Mhz band. If you were to try to program one of these radios to the 81Mhz band and did try to transmit, due to the way the radio is designed it will appear to work but in fact there will be considerably more transmitted transmit power at 162Mhz (81 x 2) and 243 Mhz (81 x 3). 234 Mhz in the military aviation band!

It is very important when programming a radio to ensure you know what you are doing and to stay within the frequencies the radio is designed for and never try to transmit on frequencies the radio is not designed to transmit on.

## **VHF or UHF**

The UK Simple licence allows you to use a range of both VHF and UHF channels. VHF tends to work better than UHF in countryside areas. VHF signals can bend around hilly terrain and as a result may go further than UHF. But for the best efficiency VHF radios need longer antennas than UHF radios. To be efficient at VHF a handheld antenna needs to be around 45 cm long. To be efficient at UHF it only needs to be 15cm long. Across hilly countryside a VHF radio with a 45cm long antenna may outperform a UHF radio with a 15cm antenna because the VHF signal may travel further. However, most VHF handheld radios are supplied with reduced length antennas, typically only 15cm long and this will reduce the both the transmit and receive performance and as a result a VHF radio with a reduced length 15cm antenna may not perform as well as a UHF radio with a similar length antenna so the VHF benefit may be negated unless you use longer VHF antennas.

UHF signals don't travel around hills or terrain in the same way as VHF signals. But UHF does tend to be able to penetrate into and pass through buildings better. It can also be reflected around solid brick and concrete structures while VHF may be completely blocked. As a result UHF is often the preferred choice in and around buildings and structures such as those at a racing circuit.

Across open flat ground such as an airfield there will be very little difference between VHF and UHF. The ability to use shorter but still efficient antennas on UHF radios may make UHF radios preferable for open flat areas.

## **CB – “Skip” and other interference.**

CB signals can travel a very long way and because of this there is more chance of interference from other more distant users. Under certain atmospheric conditions CB signals from other countries can become very strong in the UK, possibly stronger than more local signals and this can be a problem. However, the use of CB has declined in recent years so the chances of inference is much lower than it used to be simply because there are fewer users. If strong European signals are a problem consider using the UK CB channels rather than the EU/CEPT channels.

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By Alister Chapman

This document is not endorsed by Motorsport UK or any other official body.