

Ofcom's EMF licence condition - What you need to know

This guide provides an overview of what you need to do to comply with Ofcom's EMF licence condition. More detail is provided in our "[Guidance on EMF Compliance and Enforcement](#)".

Step 1 - Do I need to comply?

The purpose of the EMF licence condition is to ensure that your antenna is sufficiently far away from areas where members of the general public may be present when you are transmitting. It does not require you to protect yourself or workers from EMF.¹

Do any of the following apply?

- You no longer use your radio equipment
- You only use your radio in emergency situations (see page 7 for further information on emergency situations)
- You do not transmit at a maximum radiated power (or an average power²) higher than 6.1 Watts ERP (or 10 Watts EIRP). NB: in most cases, your maximum allowed transmit power can be found in your Ofcom licence.

If any of the above points apply, **you do not need to take further action.**

If they do not apply, or if you are not sure, you should carry out a compliance check. **Please proceed to step 2.**

¹ We provide further information on who needs to be protected in step 3 (page 4) of this guide.

² By 'average power' we mean the radiated power (EIRP or ERP) averaged over the relevant averaging period (6 minutes in the 1998 ICNIRP Guidelines). Further information on how to calculate your average power is available in paragraphs 6.17 – 6.21 of our detailed "[Guidance on EMF Compliance and Enforcement](#)".

Step 2 - Carrying out a compliance check

The purpose of a compliance check is to understand whether the antenna of your equipment is far enough away from members of the general public when you are transmitting. There are a number of ways to carry out a compliance check including:

1. Using Ofcom's EMF calculator (or another calculator that you are confident produces accurate results)
2. Manufacturer instructions on EMF compliance

The methods included in this guide are the simplest methods and require no detailed specialist knowledge. Other methods for checking compliance are presented in section 6 of our detailed ["Guidance on EMF Compliance and Enforcement"](#). However, these require a more detailed technical understanding of the radio equipment and EMF.

Please note: If you use multiple antennas at the same site and these antennas:

- Transmit at powers above 61 Watts ERP (100 Watts EIRP), and
- cover the same area where members of the general public may be present, and
- sometimes transmit at the same time,

you should calculate the aggregate EMF from these antennas. The additional usage notes in Ofcom's EMF calculator provide a conservative approach for calculating the compliance distance for multiple transmitters. Ofcom may provide an additional calculator in the future with a less conservative approach for multiple transmitters. Further information on this can be found in section 7 of our detailed ["Guidance on EMF Compliance and Enforcement"](#).

i. Using Ofcom's EMF calculator (or another calculator that you are confident produces accurate results)

Ofcom's EMF calculator requires the following input parameters:

- Maximum radiated power³
- Maximum transmission time in any 6 minute period
- Frequency of operation (MHz)

If you know these parameters, enter them in the calculator.

If you do not know these parameters or are unsure, you should obtain this information from your equipment manual or from the manufacturer (e.g. from their website), or seek professional advice.

Understanding your maximum transmission time

The 'maximum transmission time in a six minute period' is used to calculate the average power of your radio equipment. We use six minutes because this is the averaging period defined in the relevant EMF guidelines published by ICNIRP. You should estimate how much

³ Ofcom's EMF calculator accepts powers inputted as ERP or EIRP. If you do not know the ERP or EIRP of your equipment, but you do know your output power and antenna gain, you can enter these parameters in the Power Calculation Tool sheet in Ofcom's EMF calculator. This tool calculates the ERP or EIRP based on these parameters. You can then enter the resulting ERP or EIRP in the main calculator sheet.

time you would typically transmit for during a busy period⁴. For example, if you usually transmit short messages of up to ten seconds but may do this up to e.g. six times in a busy six minute period, you should use a maximum transmission time of 1 minute (6 x 10 seconds).

If the calculator indicates that 'No further assessment is required':



Save the output (e.g. as a pdf, gif or screenshot) or print off a copy and keep this with your licence document. **No further action is required.**

If the calculator provides you with a compliance distance:



Proceed to Step 3

If the calculator indicates that you have entered an invalid frequency:



Ofcom's EMF calculator does not currently cover frequencies below 10 MHz. For these frequencies, you will have a longer period within which to comply, i.e. by 18 November 2022. Ofcom will provide further guidance on compliance in these frequencies in a future version of this guide. You can sign up to receive updates on Spectrum issues (including updates on this guide and other EMF matters) at the following webpage: <https://www.ofcom.org.uk/about-ofcom/latest/email-updates>

ii. Using manufacturer instructions

For some types of equipment, the manufacturer of the equipment may provide instructions (either in paper form or online) on how to ensure compliance with the general public EMF limits (in the ICNIRP Guidelines). Instructions may be in the form of user manuals, equipment specifications or instructions for use.

If the instructions include information on EMF compliance distances:



You should review and follow these instructions in parallel with the instructions at Step 3 of this guide. **Proceed to Step 3.**

If the instructions indicate that the equipment is automatically compliant with the general public EMF limits (in the ICNIRP Guidelines):



You should keep the instructions with your licence document or with your logbook as your record of compliance and, once you have done this, **no further action is required.**

⁴ In some types of radio equipment (e.g. radar), the transmission time is automatic and not controlled by the end user. These types of radio often have a built-in duty cycle (or percentage of time transmitting) specified by the manufacturer, e.g. 5%. This may be specified in the equipment manual. If you know what this is, you can use this as the maximum transmission time. For example, a duty cycle of 5% would equate to a maximum transmission time of 0.3 minutes.

Step 3 - Maintaining the compliance distance

You need to ensure that the distance from the closest point of your antenna to any area where a member of the general public may be present when your radio equipment is transmitting is greater than the compliance distance.

The general public can include family, friends, neighbours, visitors, lodgers, passengers, paying customers as well as other members of the general public of all ages. None of these individuals should be exposed to EMF above the general public EMF limits. The general public may either be on public or private property including, for example, on a public footpath or in a private residence.⁵

No further action is required if the only people able to get within the compliance distance are either:

- i) you (i.e. the licensee) or the owner, operator or installer of the equipment; or
- ii) workers (i.e. persons already protected under existing health and safety legislation).

Can you maintain the compliance distance without any further action?

YES – Proceed to step 4

NO – Proceed to step 3A

Step 3A – What should I do if I can't maintain the compliance distance?

There are a number of actions you can take:

- i. Using control measures to prevent members of the general public being exposed to EMF above the general public EMF limits.
- ii. Changing parameters, e.g. reducing radiated power or transmission time, and recalculating the compliance distance.
- iii. Moving equipment, e.g. moving the antenna to a different location.

i. Using control measures

Where it may be possible for a member of the general public to get closer to the antenna than the compliance distance, you could consider using a control measure. For example:

- Introducing barriers or locks to limit access to areas close to the antenna.
- Installing clear and easy to understand warning signs directing people where not to sit/stand when equipment is being used and setting out simple explanations of risks.
- Ensuring equipment never transmits when a member of the general public may be present in an area in which the general public EMF limits may be breached.

Further detail on control measures is available in paragraphs 6.27 – 6.30 of our detailed [“Guidance on EMF Compliance and Enforcement”](#).

ii. Changing parameters

Reducing power: Some users may be able to use a lower radiated power without impacting the practical usage of their radio.

⁵ Further information on what we mean by the general public and the areas in which they may be present is set out in sections 4 and 5 of our detailed [“Guidance on EMF Compliance and Enforcement”](#).

If you think it is possible to use reduced power, you can enter the reduced power in the calculator and recalculate the compliance distance. If this is successful, you can proceed to step 4.

Reducing transmission time: Some users may be able to reduce the amount of time transmitting. A reduction in the maximum amount of time that you transmit can also reduce the compliance distance or may even mean that you do not need to maintain a compliance distance at all. This is because reducing the transmission time will also reduce the average power below the threshold for compliance.

If you think it is possible to reduce your transmission time, you can try entering a different transmission time in the calculator to understand the impact this has on the compliance distance.

If you decide that it is feasible to limit the use of the radio in this way, but think there is a risk that the radio may be used for longer than you have assumed in your compliance calculation, you could consider additionally using one of the control measures listed above.

iii. Moving equipment

Another option that may be possible in some circumstances is to move the antenna to a different location which is further away from areas where members of the general public may be present.

Proceed to Step 4

Step 4 – Keeping an appropriate compliance record

If you have used Ofcom's calculator or another calculator

You should save the output (e.g. as a pdf, gif or screenshot) or print off a copy and keep this with your licence document.

If you have used any of the control measures mentioned in step 3A, you should also keep a record of this.

If you have used manufacturer instructions

You should keep the manufacturer's instructions on EMF compliance that you have followed with your licence document. You should also be able to demonstrate how you have followed the instructions.

If you have used any of the control measures mentioned in step 3A, you should also keep a record of this.

Once you have carried out your compliance assessment and kept (or saved) your record(s), **no further action is required.**

You need to have done this by the following dates:

- **18 November 2021** if you are using frequencies at or above 110 MHz;
- **18 May 2022** if you are using frequencies above 10 MHz but below 110 MHz;
- **18 November 2022** if you are using frequencies at or below 10 MHz.

Further information on the type of records that can be used to demonstrate compliance are set out in section 12 of our detailed "[Guidance on EMF Compliance and Enforcement](#)".

Emergency situations

If your equipment is being used for either seeking help in an emergency, or responding to an emergency, you do not need to worry about compliance whilst the emergency is unfolding.

You will however need to make sure you comply when your equipment is being used in other non-emergency situations. Training exercises, for example, are not emergency situations. You will therefore need to ensure you comply with the general public EMF limits during any training exercises. However, if only workers may be exposed to EMF above the general public EMF limits, you will not need to take any further steps to comply.

Where equipment is used in an emergency situation, you do not need to worry about compliance for any routine/periodic testing of that equipment you need to carry out to ensure the equipment will work as required in the event of an emergency situation.

You do not need to keep a compliance record for any equipment you only use in an emergency situation.

Further information on when the emergency exemption applies is set out in our detailed "[Guidance on EMF Compliance and Enforcement](#)".

Other questions about EMF compliance

How often do I need to check my equipment complies with the new rules?

You will only need to reassess compliance if you make changes to your equipment which is likely to increase the EMF exposure levels in any area where a member of the general public may be present. This could happen if, for example, you change or adjust the antenna or make other permanent technical changes to the equipment. If your equipment is mobile, this doesn't mean you need to repeat this assessment every time it moves from one location to another. However, you should always make sure that members of the general public are being kept beyond the compliance distance from the equipment's antenna when it is transmitting.

What will Ofcom do to assess compliance?

Ofcom's Spectrum Engineering Officers carry out spot checks to ensure that radio equipment is being operated in accordance with all the terms and conditions of licences.

The checks could come at any time, so it's important for you to make sure you can provide information which demonstrates you're complying with the rules.

If Ofcom finds the EMF from your equipment is above the general public EMF limits or if you cannot provide appropriate records demonstrating compliance to Ofcom, we may take enforcement action.

Further information on potential enforcement action and our approach to enforcement is set out in section 15 of our detailed "[Guidance on EMF Compliance and Enforcement](#)".

Feedback on this guide

This guide provides simplified guidance on how to check and demonstrate compliance with Ofcom's EMF licence condition. More detail is provided in our "[Guidance on EMF Compliance and Enforcement](#)".

If you think that any part of this guide is unclear or you have general feedback on this guide, you can email us at EMFImplementation@ofcom.org.uk. We will then review your feedback and may take account of this in future versions of this guide. However, we cannot provide individual responses to emails or provide bespoke advice on individual compliance queries.

Version History

The table below shows the version history of this guide. You should always check that you are using the most recent version of this guide when carrying out a compliance check. The most recent version of this guide will be the one published at this webpage:

<https://www.ofcom.org.uk/manage-your-licence/emf/compliance-and-enforcement-guidance>

Version number	Description	Changes	Publication date
V1.0	Original draft version		11 March 2021
V2.0	This version	Comprehensive update following feedback on the draft version	17 June 2021