Amateur Radio Getting Started: EMF Assessment

The UK amateur radio licence was updated on the 18th of May 2021 to include new clauses about the possible risks of exposing members of the public to Electromagnetic fields (EMF).

What does the licence say?

The EMF section applies to any transmissions at powers over 6.1 watts ERP *(10 Watts EIRP)*, and is designed to ensure that licence holders comply with the international limits defined by a body called ICNIRP. These limits are all about exposure of radio signal field strength to members of the public.

How do I comply with the rules?

All radio amateurs who transmit more than 6.1 watts ERP will need to carry out an assessment to make sure that members of the general public are not exposed to field strengths greater than the limits set by ICNIRP.

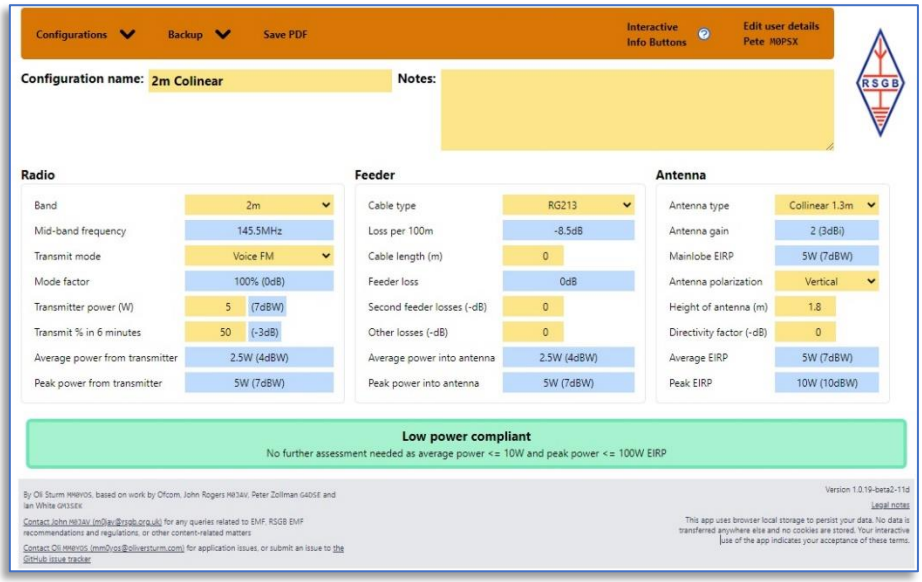
Most amateurs will simply complete an assessment to see if their setup complies. Free tools are available from the RSGB. Amateurs need to complete the assessment so that if they are asked by Ofcom, they can present the calculations and demonstrate no risk to the general public.

How to complete an EMF Assessment

The RSGB has released a calculator, available as an online tool or an Excel spreadsheet: RSGB EMF Calculator

You'll need to type in several bits of information, to calculate the safe distance in meters. The important data is:

- Transmit power and frequency
- Mode (SSB, FM, AM, Data, etc)
- Transmit time – We can specify our measurements based on a 6-minute period. As we will spend some of that six-minute period listening, we can specify what percentage of a sample 6-minute period we spend transmitting
- Antenna gain – This of course affects the ERP
- Co-ax loss – Some power is lost in the feeder, reducing the amount of power we radiate from the antenna
- Antenna height off the ground



If there is a chance of the public being inside the EMF zone, you may need to make changes like raising the antenna height or reducing your power. Complete the assessment using the RSGB's calculator, and keep a copy of the results, to prove you've done it.

More help, plus videos, guides and more information here: www.essexham.co.uk/getstarted