

A GUIDE TO THE OPERATION OF 24 GHz AMATEUR RADIO STATIONSGENERAL

1.1 Special authority from the Home Office Radio Regulatory Department (Licensing Branch) HO/RRD/LB is required for operation of a transmitting and receiving station within the limits of the 24 GHz amateur band, 24.00 to 24.25 GHz. Application should be made on form which requires information to be given about the applicants ability to comply with the conditions mentioned below. These conditions have been established in order to minimise interference to other services and radiation hazards associated with the operation of radio transmitters at these frequencies. At present in the UK, it is recommended that the level to which continuous exposure is possible should not exceed 10 mW/cm^2 .

2. EQUIVALENT ISOTROPICALLY RADIATED POWER eirp (MEAN)

2.1 Authority will not normally be given for operation with eirp (mean) exceeding 25 watts. Under these conditions and with typical high gain aerials, a radiation level of 10 mW/cm^2 does not normally exist further than one metre from the aerial aperture. In conditions of transmitter/aerial mismatch there may be considerable differences between calculated and measured radiation levels.

2.2 Definition - Equivalent Isotropically radiated power (eirp)

The product of the powers of an emission is supplied to an antenna and the antenna gain in a given direction relative to an isotropic antenna.

Definition - Mean Power of a Radio Transmitter

The power supplied to an antenna transmission line by a transmitter during normal operation, averaged over a time, sufficiently long compared with the period of the lowest frequency encountered in modulation. A time of 1/10 second during which the mean power is greatest will be selected normally.

Definition - Isotropic Gain of an Antenna

The gain on an antenna in a given direction when the reference antenna is an isotropic antenna isolated in space.

3. AERIAL SITING

Transmitting aerials should be sited to offer the least potential radiation hazard, and should be mounted upon a mechanically sound structure which ensures that no part of the aerial is less than 3 metres above ground level. The radio beam from the aerial system should be directed in a manner which will not cause it to strike the ground (or any building) within a radius of 30 metres around the aerial.

FREQUENCY AND POWER MEASUREMENT

4.1 Sufficient frequency stabilization must be used to ensure that emissions are restricted to the frequency band 24 to 24.25 GHz. This means that the operating frequency must be controlled within 0.5016% when operating at the centre frequency of the band and appropriately closer tolerances at operating frequencies nearer to the band edges. The applicant must have equipment suitable for checking the performance of the transmitter in this respect.

4.2 Antenna gain may be assessed by measurement or from design data. Power Output of the transmitter may be measured using a suitable power meter, or may be assessed from the dc power input to the final stage if the conversion efficiency is known.

4.3 Both frequency and power measurements should be referred to recognised UK measuring standards.

5 HARMONIC AND SPURIOUS RADIATION

5.1 It is a condition of all Amateur (transmitting) licences in the UK that transmissions shall not cause undue interference, and that care must be taken to minimize harmonic and spurious radiations. Applicants must have equipment suitable for checking the levels of such radiations up to the second harmonic.

HOME OFFICE

RADIO REGULATORY DIVISION

JULY 1974

1976

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RADIATION HAZARD CERTIFICATE

I certify that with regard to the risk of possible radiation hazard, having consulted the manufacturer of the wireless sending and receiving apparatus, that

(A) the field strength around the station(s) will nowhere exceed $10\text{mW}/\text{cm}^2$ and that there will be no radio - frequency radiation hazard to the health of members of the public or to electronic explosive devices made safe for transit in a field of $10\text{mW}/\text{cm}^2$

or

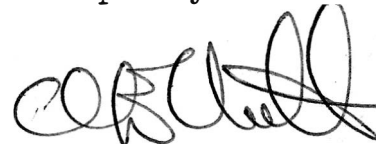
I undertake to ensure that

(B) the recommendations concerning the Safety Precautions Relating to Intense Radio-Frequency Radiation as set out in the associated Memorandum will be followed and that specifically, members of the public will be excluded from any area in which the field strength may exceed $10\text{mW}/\text{cm}^2$.

Delete statement A or B as appropriate.

I have retained a copy of this certificate and the memorandum about safety precautions relating to intense radio-frequency radiation.

Signature



Position held

Name of Company

Date

22/6/76

- Notes:
1. The Secretary of State's permission is not required for operation in the sub-band 24-24.05 GHz.
 2. Since high intensities of rf radiation may be harmful, the following safety precaution must be taken: in locations to which people have access, the power flux density on transmit must not exceed the limits recommended by the competent authorities. (Currently, this limit is 10mW per square centimetre.)
 3. Should your application be successful, under no circumstances will operation in a mobile mode be permitted.
 4. It is recommended that you read carefully the HMSO publication "Safety Precautions Relating to Intense Radio Frequency Radiation" (ISBN 0 11 340576 6).

Department of Trade and Industry
Radio Regulatory Division
Waterloo Bridge House
Waterloo Road
LONDON SE1 8UA

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ADDITIONAL LOCATIONS

Nearest Large Town

National Grid Reference