

**UK Radio Interface Requirement 2007**  
**Fixed Broadband Services operating in the**  
**frequency range 5725-5850 MHz**  
**(Version 1.00)**

98/34/EC Notification Number: 2003/204/UK

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## 1. Foreword

- 1.1 The Radio Equipment and Telecommunications Terminal Equipment Directive 1999/5/EC (R&TTE Directive) was implemented in the United Kingdom (UK) on the 8 April 2000 by the Radio Equipment and Telecommunications Terminal Equipment Regulations, Statutory Instrument 2000 No. 730. In accordance with Articles 4.1 and 7.2 of Directive 1999/5/EC, this UK Radio Interface Requirement contains the requirements for the use of Fixed Broadband Radio Systems operating in the frequency range 5725-5850 MHz.
- 1.2 Nothing in this UK Radio Interface Requirement shall preclude the need for equipment to comply with Directive 1999/5/EC.
- 1.3 It is required by the Wireless Telegraphy Act 1949 that no radio equipment is installed or used in the UK except under the authority of a licence granted by or otherwise exempted by regulations made by the Secretary of State. It is a condition of such a licence or exemption regulations as appropriate that the equipment must meet the minimum requirements specified in this UK Radio Interface Requirement for the stated equipment types and for the stated frequency bands.
- 1.4 The requirements given in the main body of this UK Radio Interface Requirement will apply in the use of Fixed Broadband Radio Systems operating in the frequency range 5725-5850 MHz, in the UK. Fixed Broadband Radio Systems share this frequency range with military radars, satellite E-S links, ENG OB links and RTTT systems. Therefore mitigation techniques may need to be employed to avoid harmful interference to those services. Although there is currently no Harmonised European Norm for Fixed Broadband Radio Systems operating in this frequency range, standardisation activities continue within ETSI. If necessary, the resultant standards will include appropriate mitigation techniques such as DFS and TPC. At the time of writing, the Europe-wide regulatory framework remains under development, but it is likely that any ERC Decision to formalise use of the band for Fixed Broadband Radio Systems will mandate implementation of the specific mitigation measures mentioned above.
- 1.5 This UK Radio Interface Requirement will be revised as necessary, for example to follow:
  - i) current technology developments for reasons related to the effective and appropriate use of the spectrum in particular maximising spectrum utilisation;
  - ii) changes to the available spectrum allocated for short range, broadband, wireless communications; or
  - iii) publication of a Harmonised standard by ETSI.
- 1.6 All UK Radio Interface Requirements notified under Directive 1998/34/EC will be published and will be made available free of charge from the Ofcom (Office of Communications) Contact Centre and/or the Ofcom website. The addresses of both the Contact Centre and the website are given at the back of this document.
- 1.7 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

## 2. **Minimum Equipment Requirements for Operation within the UK**

- 2.1 The minimum requirements in this document are made for reasons related to the effective and appropriate use of the radio spectrum, in particular maximising spectrum utilisation.
- 2.2 This UK Radio Interface Requirement gives a high-level description of how the spectrum in the UK is used for Fixed Broadband Radio Systems operating in the frequency range 5725-5850 MHz. It does not prescribe a technical interpretation of the 'essential requirements' of Directive 1999/5/EC.
- 2.3 This UK Radio Interface Requirement therefore stipulates the minimum requirements necessary to allow Fixed Broadband Radio Systems operating in the frequency range 5725-5850 MHz to be licensed in the UK. Table 2.1 contains the relevant equipment parameters. These, together with the 'essential requirement' detailed in Article 3.2 of the Directive 1999/5/EC, constitute the minimum equipment requirements for the operation of Fixed Broadband Radio Systems in the frequency range 5725-5850 MHz within the UK.
- 2.4 The technical parameters specified in the UK Radio Interface Requirement are applied to achieve the desired level of compatibility for Fixed Broadband Radio Systems and other radiocommunication services while promoting enterprise, innovation and competition.
- 2.5 This UK Radio Interface Requirement provides the necessary technical information that facilitates access to spectrum allocated to Fixed Broadband Radio Systems in the UK. It is not the intention of this UK Radio Interface requirement to duplicate or impose any additional 'essential requirements' of the Directive 1999/5/EC on products. Any specified parameters within this document are for the purpose of identifying product options and not as a national product requirement.

**Table 2.1: Minimum Equipment Requirements**

Frequency range (MHz)	Service	Power	Duplex	Additional Technical Requirements	Additional Technical Requirements (informative)
5725-5850 <sup>123</sup> (Band C)	Fixed	Max EIRP 2W with a PSD not exceeding 100mW/MHz <sup>4</sup>	TDD	<p><b>DFS.</b> Equipment operating in this band must implement a random channel access mechanism capable of operating across all of the frequency range. Shall prevent co-channel operation in the presence of Radar signals. The DFS detection threshold shall be based upon</p> <ul style="list-style-type: none"> <li>-67 dBm for devices with EIRP greater than 1W</li> <li>-64 dBm for devices from 200mW to 1W EIRP</li> <li>-62 dBm for devices with EIRP less than 200mW</li> </ul> <p>These thresholds represent the levels at the output of the antenna and are normalised to 0dBi antenna gain. For devices with a higher gain the threshold may be increased by 1dB for each dB of antenna gain.</p> <p>TPC shall be employed with a dynamic range of at least 19dB relative to the maximum EIRP allowed. Stations with a maximum EIRP capability lower than the maximum allowed EIRP can reduce the TPC range accordingly.</p>	<p>See Annex A for channel plan details.</p> <p>See VNS 2107 for guidance to manufacturers and notified bodies on what the UK deems acceptable test methods for equipment declarations and/or testing.</p>

<sup>1</sup>Licences shall be issued on a non-protection and non-interference (to other primary users) basis.

<sup>2</sup>Co-ordination and site-clearance considerations may impose additional restrictions on the maximum radiated power allowed on specific frequencies, directions and locations.

<sup>3</sup>The frequency range 5795-5815 MHz shall not be used and should be notched out to protect RTTT devices. This interim arrangement will be reviewed two years from the date of publication of this IR.

<sup>4</sup>The EIRP spectral density of the transmitter should not exceed the following values for the elevation angle  $\theta$  above the local horizontal plane (of the Earth):

$$\begin{array}{ll}
 -34\text{dB(W/4KHz)} & \text{for } 0^\circ \leq \theta < 4^\circ \\
 -34 - 1.2(\theta - 4) \text{ dB(W/4KHz)} & \text{for } 4^\circ \leq \theta < 28^\circ \\
 -62.8 \text{ dB(W/4KHz)} & \text{for } \theta > 28^\circ
 \end{array}$$

or, for Azimuth Beamwidths less than 25°:

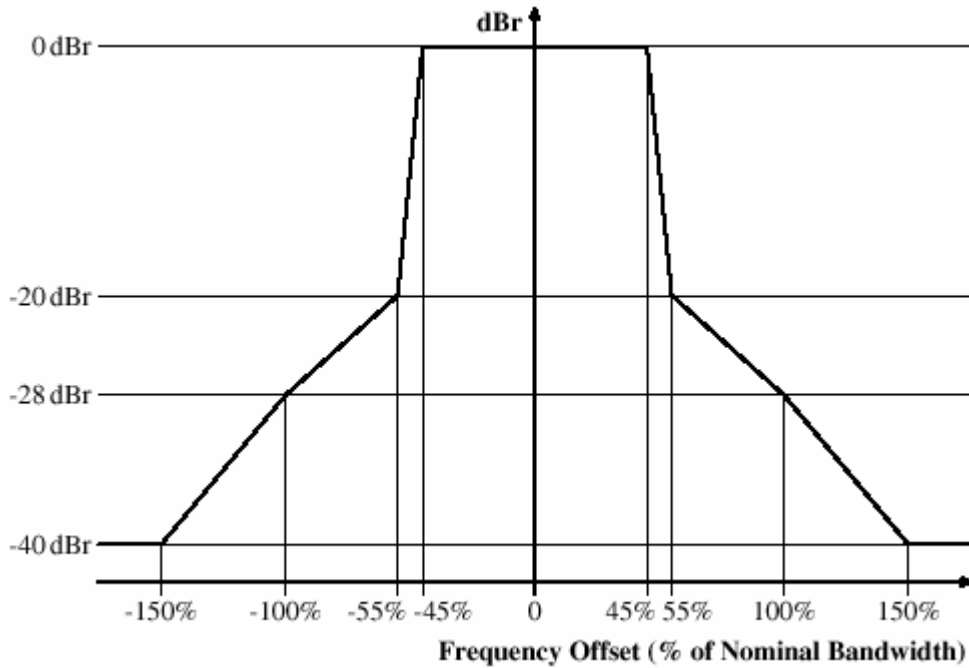
$$-34 \text{ dB(W/4kHz)} \quad \text{for } 0^\circ \leq \theta < 90^\circ$$

## Annex A Channel Plan (Informative)

**Table A1: Example channel plan, nominal carrier frequency allocations**

Carrier centre frequency $f_c$ (MHz)		
5 MHz channelisation	10 MHz channelisation	20 MHz channelisation
5727.5, 5732.5, 5737.5, 5742.5, 5747.5, 5752.5, 5757.5, 5762.5, 5767.5, 5772.5, 5777.5, 5782.5, 5787.5, 5792.5, 5817.5, 5822.5, 5827.5, 5832.5, 5837.5, 5842.5, 5847.5	5730, 5740, 5750, 5760, 5770, 5780, 5820, 5830, 5840	5735, 5755, 5775, 5835,

**Figure A2: Spectral Power Mask for 5, 10 and 20 MHz channelisation schemes**



dBr is the spectral density relative to the maximum spectral power density of the transmitted signal. For 5, 10 and 20 MHz channelisation schemes this mask should be scaled accordingly

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