



**UK Interface Requirement 2006
Short Range, Broadband, Data Services (High
performance RLAN) operating in the frequency
range 5150 - 5725 MHz**

(Version 1.02)

98/34/EC Notification Number: 2002/0254/UK

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References

ERC/DEC/(99)23

ERC Decision of 29 November 1999 on the harmonised frequency bands to be designated for the introduction of High Performance Radio Local Area Networks (HIPERLANs)

ETSI EN 301 489 Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 17; Specific conditions for Wideband data and HIPERLAN equipment

Draft ETSI EN 301 893 Broadband Radio Access Networks (BRAN); 5GHz High performance RLAN; Part 2 Harmonised EN covering essential requirements of article 3.2 of the R&TTE Directive

1. Foreword

- 1.1 The Radio Equipment and Telecommunications Terminal Equipment Directive 99/5/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 Interface Requirement contains the requirements for the use of Short Range, Broadband, Wireless communications operating in two bands in the frequency range 5150-5725 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 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 short range, broadband, wireless communications operating in the frequency range 5150-5725 MHz, in the UK. Short-range broadband wireless communications shares this frequency range with military radar and satellite feeder links. Therefore mitigation techniques need to be employed to avoid harmful interference to those services. The harmonised standard, which currently is under development (EN 301 893) will contain such techniques (DFS and TPC), but as yet hasn't been adopted. Although this shouldn't prevent manufacturers from complying with the R&TTE Directive by implementing the mechanisms contained in the draft of that standard, the majority of equipment that currently is available on the market isn't yet capable of implementing them. In order to allow the market to develop, guidance on the conditions under which such equipment is deemed to comply with the R&TTE Directive is given.
- 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; and
 - ii) changes to the available spectrum allocated for short range, broadband, wireless communications.
 - iii) Publication of the Harmonised standard by ETSI.
- 1.6 All UK Radio Interface Requirements notified under Directive 98/34/EC will be published and will be made available free of charge from the RA Information and Library Service and/or the RA web-site. The addresses for both the Library and the web-site are given on the back cover of this document
- 1.7 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given on 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 short range, broadband, Wireless Communications operating in the frequency range 5150-5725 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 necessary equipment parameters for the use of short range, broadband, Wireless Communications in the UK. Tables 2.1 and 2.2 contain 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 short range, broadband, Wireless Communications operating in the frequency range 5150-5725 MHz within the UK.
- 2.4 Relevant equipment meeting the minimum requirements outlined in this Interface Requirement, will be exempt from licensing provided that it meets the requirements of the appropriate exemption regulations. Details of the exemption regulations will be available from the RA on request.
- 2.5 The technical parameters specified in the UK Radio Interface Requirement are applied to achieve the desired level of compatibility for short range, broadband, Wireless Communications and with other radiocommunication services while promoting enterprise, innovation and competition.
- 2.6 This UK Radio Interface Requirement provides the necessary technical information that facilitates access to spectrum allocated to short range, broadband, Wireless Communications 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	Licensing Requirement	Maximum EIRP	Modulation Scheme	Additional Technical Requirements (informative)
5150-5350 (Band A) (includes interim arrangement ¹² for Band A until equipment with full DFS and TPC capabilities are available)	Mobile (Devices associated with mobile/ Nomadic and Local Area Network applications)Indoor only	Licence exempt	Max e.i.r.p. 200 mW	Orthogonal Frequency Division Multiplexing (OFDM)	<p>From the Draft harmonised standard EN 301 893³:</p> <p>DFS. Equipment operating in this band must implement a random channel access mechanism capable of operating on the all carrier frequencies within 330 MHz of the spectrum in bands A and B. Shall prevent co-channel operation in the presence of Radar signals.</p> <p>TPC shall be employed to ensure a mitigation factor of at least 3 dB on the average output power of the network.</p> <p>PSD shall not exceed 10mW/MHz</p> <p>Interim Arrangement The following guidance to manufacturers and notified bodies on what the UK deems acceptable for equipment not implementing full DFS/TPC capabilities and which is not being used in the presence of radar signals is given:</p> <p>Reduce the power level: where no TPC nor full DFS can be implemented equipment shall only operate at a maximum power level of 60 mW. Where TPC is implemented equipment shall only operate at a maximum power level of 120 mW</p> <p>Limited DFS Equipment operating in this band must implement a random channel access mechanism capable of operating on all 8 carrier frequencies.</p>
5470-5725 (Band B)	Mobile (Devices associated with mobile/ Nomadic and Local Area Network applications)	Licence exempt	Max e.i.r.p. 1 W	Orthogonal Frequency Division Multiplexing (OFDM)	<p>DFS. Equipment operating in this band must implement a random channel access mechanism. If operating in bands A and B must be capable of operating on all carrier frequencies within 330 MHz of the spectrum in bands A and B. If only operating in band B equipment must be capable of operating on all carrier frequencies in the band. Shall prevent co-channel operation in the presence of Radar signals.</p> <p>TPC shall be employed to ensure a mitigation factor of at least 3 dB on the average output power of the network.</p> <p>PSD shall not exceed 50mW/MHz</p>

¹This interim arrangement will be reviewed 18 months after the date of publication of IR2006v1.02.

² When the interim arrangement is revoked any new installations would be expected to meet the full DFS requirements. Equipment already installed would be expected to meet full requirements within a given timeframe to be decided.

³ Once adopted this standard will give presumption of conformity with the requirements of the R&TTE Directive. It is assumed to be fulfilled in frequency planning and defines the equipment type but compliance with it is not mandatory.

Table 2.2 Nominal carrier frequency allocations

Band designation	Carrier centre frequency f_c (MHz)
A	5180
A	5200
A	5220
A	5240
A	5260
A	5280
A	5300
A	5320
B	5500
B	5520
B	5540
B	5560
B	5580
B	5600
B	5620
B	5640
B	5660
B	5680
B	5700

Annex A Additional Performance Parameters (Informative)

The average level of the transmitted spectrum shall be no more than those given in figure 1 below.

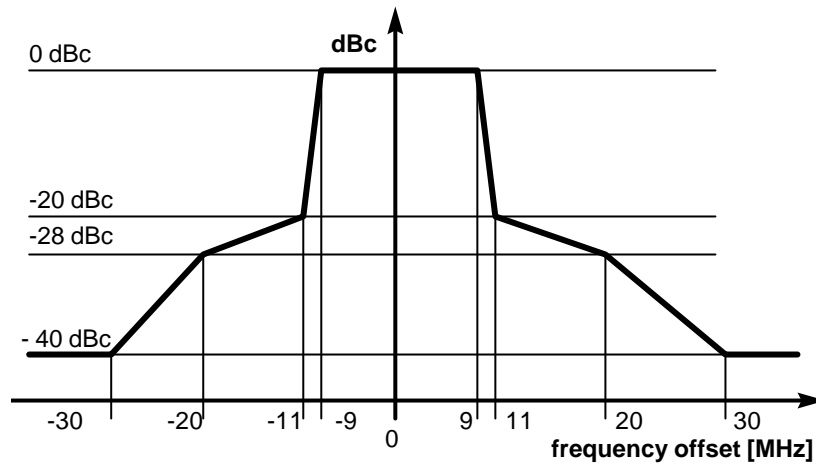


Figure 1: Transmit spectral power mask. dBc is the spectral density relative to the maximum spectral power density of the transmitted signal. This mask is taken from the essential requirements stated in draft EN 301 893.

A.1 Table A1 details the reference specifications that contain additional performance parameters and limits that the Radiocommunications Agency assumes are fulfilled by Short Range, Broadband, Wireless Communications when using the 2 available frequency bands in the UK.

Frequency Ranges	Reference Specification
5150-5350 MHz (Band A)	ETS 300 652 ETS 300 826 ETS 300 836 EN 301 489 EN 301 811 EN 301 893 TS 101 475 TS 101 493 TS 101 761 TS 101 762 TS 101 763 TS 101 811 TS 101 823

5470-5725 MHz
(Band B)

EN 301 489
EN 301 811
EN 301 893
TS 101 475
TS 101 493
TS 101 761
TS 101 762
TS 101 763
TS 101 811
TS 101 823

Document history

Draft	Date	Changes

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