



UK Interface Requirement 2045

Concurrent Spectrum Access

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98/34/EC Notification number: 2005/695/UK

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Section 1

References

- 1.1 ETSI EN 301 502 – Harmonized EN for Global System for Mobile communications (GSM); Base Station and Repeater equipment covering essential requirements under article 3.2 of the R&TTE directive.
- 1.2 ETSI EN 301 511 – Global System for Mobile communications (GSM); Harmonized standard for mobile stations in the GSM 900 and DCS 1800 bands covering essential requirements under article 3.2 of the R&TTE directive (1999/5/EC).
- 1.3 ETSI GSM 05.05 – Digital cellular telecommunications system (GSM); Radio transmission and reception.
- 1.4 ERC Report 100 – Compatibility between certain radiocommunications systems operating in adjacent bands. Evaluation of DECT / GSM 1800 compatibility.
- 1.5 Note 1 - These references are included for information purposes only. Compliance with these referenced standards is not mandatory.
- 1.6 Note 2 - Documents listed above are not produced by Ofcom, therefore interested parties should source the documentation by their own means. For information:
 - The ERO website for technical regulatory documentation including the text of ERC Reports is located at <http://www.ero.dk>
 - The ETSI website for technical standard documentation is located at <http://www.etsi.org>
- 1.7 Note 3 - Ofcom is not responsible for the content of external internet sites.

Section 2

Foreword

- 2.1 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 2000, 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 licensing and use of concurrent spectrum access in the specified frequency bands.
- 2.2 Nothing in this UK Radio Interface Requirement shall preclude the need for equipment to comply with Directive 1999/5/EC.
- 2.3 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 Ofcom. It is a condition of such a licence or exemption regulations as appropriate that, in order to be installed or used in the UK, the equipment must meet the minimum requirements specified in this UK Interface Requirement for the stated equipment types and for the stated frequency bands. Nothing in this UK Interface Requirement shall preclude equipment from being placed on the market in the UK that complies with the 'essential requirements' specified in Directive 1999/5/EC.
- 2.4 The requirements given in the main body of this UK Radio Interface Requirement will apply to the licensing of concurrent spectrum access.
- 2.5 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 concurrent spectrum access.
- 2.6 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 web-site at <http://www.ofcom.org.uk>
- 2.7 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

Section 3

Minimum requirements for operation within the UK

- 3.1 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.
- 3.2 This UK Radio Interface Requirement gives a high level description of how the spectrum in the UK is used for concurrent spectrum access. It does not prescribe technical interpretation of the 'essential requirements' of Directive 1999/5/EC.
- 3.3 This UK Radio Interface Requirement therefore stipulates the necessary equipment parameters for the licensing or licence exemption of concurrent spectrum access in the UK. Tables 3.1 and 3.2 contain the relevant equipment parameters. These taken together with the 'essential requirements' detailed in Article 3.2 of Directive 1999/5/EC constitute the minimum requirements for the installation and use of concurrent spectrum access within the UK. Nothing in this UK Interface Requirement shall preclude equipment from being placed on the market in the UK that complies with the 'essential requirements' specified in Directive 1999/5/EC.
- 3.4 The technical parameters specified in the UK radio Interface Requirement are applied to achieve the desired level of compatibility within the concurrent spectrum access and with other radiocommunications services, whilst promoting enterprise, innovation and competition.
- 3.5 This UK Radio Interface requirement provides the necessary technical information which facilitates access to the concurrent spectrum access spectrum by making clear the assumptions that are made in planning the use of the concurrent spectrum access spectrum 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 de facto product requirement.

Table 3.1: Minimum requirements for the use of concurrent spectrum access: - Mobile stations and repeaters operating in the 1781.7 to 1785 MHz band.

Mandatory Elements (1-9)																																
1	Frequency band (or bands)	1781.7 to 1785 MHz																														
2	Radio service	Mobile Service																														
3	Application	Concurrent spectrum access																														
4	Channelling modulation	Not specified																														
5	Transmit power limit	<p>The following transmit power limits apply within this frequency band:</p> <table border="1"> <thead> <tr> <th rowspan="2">Frequency range as measured from the lower frequency of the frequency band</th> <th colspan="2">Maximum mean EIRP density dBm/kHz</th> </tr> <tr> <th>Under normal circumstances</th> <th>Under specific circumstances where all Licensees agree[‡]</th> </tr> </thead> <tbody> <tr> <td>0 to 0.05 MHz</td> <td>$-33 + 140 \times \Delta_{FL}$</td> <td>$-33 + 140 \times \Delta_{FL}$</td> </tr> <tr> <td>0.05 to 0.1 MHz</td> <td>$-26 + 60 \times (\Delta_{FL} - 0.05)$</td> <td>$-26 + 60 \times (\Delta_{FL} - 0.05)$</td> </tr> <tr> <td>0.1 to 0.2 MHz</td> <td>$-23 + 230 \times (\Delta_{FL} - 0.1)$</td> <td>$-23 + 300 \times (\Delta_{FL} - 0.1)$</td> </tr> <tr> <td>0.2 to 3.2 MHz</td> <td>0[†]</td> <td>7[†]</td> </tr> <tr> <td>3.2 to 3.3 MHz</td> <td>$-23 + 230 \times (3.3 - \Delta_{FL})$</td> <td>$-23 + 300 \times (3.3 - \Delta_{FL})$</td> </tr> </tbody> </table> <p>Notes: Δ_{FL} is the offset from the edge of the frequency band in MHz [†] within the occupied bandwidth of the transmission [‡] Subject to agreement between all licensees and notification of such agreement to Ofcom</p> <p>The following emission limits apply below 1781.7 MHz:</p> <table border="1"> <thead> <tr> <th>Frequency range as measured from the lower frequency of the frequency band</th> <th>Maximum mean EIRP density dBm/kHz</th> </tr> </thead> <tbody> <tr> <td>0.0 to -0.1 MHz</td> <td>$-33 + 140 \times \Delta_{FL}$</td> </tr> <tr> <td>-0.1 to -0.3 MHz</td> <td>$-47 + 30 \times (\Delta_{FL} + 0.1)$</td> </tr> <tr> <td>-0.3 to -1.5 MHz</td> <td>-53</td> </tr> <tr> <td>-1.5 to -5.7 MHz</td> <td>-63</td> </tr> </tbody> </table> <p>Note: Δ_{FL} is the offset from the edge of the frequency band in MHz</p>	Frequency range as measured from the lower frequency of the frequency band	Maximum mean EIRP density dBm/kHz		Under normal circumstances	Under specific circumstances where all Licensees agree [‡]	0 to 0.05 MHz	$-33 + 140 \times \Delta_{FL}$	$-33 + 140 \times \Delta_{FL}$	0.05 to 0.1 MHz	$-26 + 60 \times (\Delta_{FL} - 0.05)$	$-26 + 60 \times (\Delta_{FL} - 0.05)$	0.1 to 0.2 MHz	$-23 + 230 \times (\Delta_{FL} - 0.1)$	$-23 + 300 \times (\Delta_{FL} - 0.1)$	0.2 to 3.2 MHz	0 [†]	7 [†]	3.2 to 3.3 MHz	$-23 + 230 \times (3.3 - \Delta_{FL})$	$-23 + 300 \times (3.3 - \Delta_{FL})$	Frequency range as measured from the lower frequency of the frequency band	Maximum mean EIRP density dBm/kHz	0.0 to -0.1 MHz	$-33 + 140 \times \Delta_{FL}$	-0.1 to -0.3 MHz	$-47 + 30 \times (\Delta_{FL} + 0.1)$	-0.3 to -1.5 MHz	-53	-1.5 to -5.7 MHz	-63
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0.4 to 1.6 MHz	-53													
1.6 to 5.8 MHz	-63													
6	Channel occupation rules	Not specified												
7	Duplex type/separation	Mobile station transmit Repeater transmit/receive Paired band 95 MHz above (Table 3.2)												
8	Licensing Regime	Network user equipment meeting the minimum requirements outlined in this Interface Requirement is exempt from licensing provided that it meets the requirements of the relevant exemption regulations. WT Act Concurrent spectrum access licence required for network user equipment that does not meet the requirements of the relevant exemption regulations. WT Act Concurrent spectrum access licence required for repeater												
9	Additional essential requirements	-												
Informative Elements (10-13)														
10	Frequency planning assumptions	-												
11	Reference	-												
12	Remarks	-												
13	Notification Number	2005/695/UK												

Table 3.2: Minimum requirements for the use of concurrent spectrum access: - Base stations and repeaters operating in the 1876.7 to 1880 MHz band

Mandatory Elements (1-9)																																		
1	Frequency band (or bands)	1876.7 to 1880 MHz																																
2	Radio service	Mobile Service																																
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5	Transmit power limit	<p>The following transmit power limits apply within this frequency band:</p> <table border="1"> <thead> <tr> <th rowspan="2">Frequency range as measured from the lower frequency of the frequency band</th> <th colspan="2">Maximum mean EIRP density dBm/kHz</th> </tr> <tr> <th>Under normal circumstances</th> <th>Under specific circumstances where all Licensees agree[‡]</th> </tr> </thead> <tbody> <tr> <td>0 to 0.05 MHz</td> <td>$-33.6 + 153.3 \times \Delta_{FL}$</td> <td>$-33.6 + 153.3 \times \Delta_{FL}$</td> </tr> <tr> <td>0.05 to 0.1 MHz</td> <td>$-26 + 60 \times (\Delta_{FL} - 0.05)$</td> <td>$-26 + 60 \times (\Delta_{FL} - 0.05)$</td> </tr> <tr> <td>0.1 to 0.2 MHz</td> <td>$-23 + 230 \times (\Delta_{FL} - 0.1)$</td> <td>$-23 + 300 \times (\Delta_{FL} - 0.1)$</td> </tr> <tr> <td>0.2 to 3.2 MHz</td> <td>0[†]</td> <td>7[†]</td> </tr> <tr> <td>3.2 to 3.3 MHz</td> <td>$-23 + 230 \times (3.3 - \Delta_{FL})$</td> <td>$-23 + 300 \times (3.3 - \Delta_{FL})$</td> </tr> </tbody> </table> <p>Notes: Δ_{FL} is the offset from the lower edge of the frequency band in MHz [†] within the occupied bandwidth of the transmission [‡] subject to agreement between all licensees and notification of such agreement to Ofcom.</p> <p>The following emission limits apply below 1876.7 MHz:</p> <table border="1"> <thead> <tr> <th>Frequency range as measured from the lower frequency of the frequency band</th> <th>Maximum mean EIRP density dBm/kHz</th> </tr> </thead> <tbody> <tr> <td>0.0 to -0.1 MHz</td> <td>$-33.6 + 153.3 \times \Delta_{FL}$</td> </tr> <tr> <td>-0.1 to -0.3 MHz</td> <td>$-49 + 20 \times (\Delta_{FL} + 0.1)$</td> </tr> <tr> <td>-0.3 to -0.9 MHz</td> <td>-53</td> </tr> <tr> <td>-0.9 to -1.5 MHz</td> <td>-56</td> </tr> <tr> <td>-1.5 to -5.7 MHz</td> <td>-74</td> </tr> </tbody> </table> <p>Note: Δ_{FL} is the offset from the lower edge of the frequency band in MHz</p>	Frequency range as measured from the lower frequency of the frequency band	Maximum mean EIRP density dBm/kHz		Under normal circumstances	Under specific circumstances where all Licensees agree [‡]	0 to 0.05 MHz	$-33.6 + 153.3 \times \Delta_{FL}$	$-33.6 + 153.3 \times \Delta_{FL}$	0.05 to 0.1 MHz	$-26 + 60 \times (\Delta_{FL} - 0.05)$	$-26 + 60 \times (\Delta_{FL} - 0.05)$	0.1 to 0.2 MHz	$-23 + 230 \times (\Delta_{FL} - 0.1)$	$-23 + 300 \times (\Delta_{FL} - 0.1)$	0.2 to 3.2 MHz	0 [†]	7 [†]	3.2 to 3.3 MHz	$-23 + 230 \times (3.3 - \Delta_{FL})$	$-23 + 300 \times (3.3 - \Delta_{FL})$	Frequency range as measured from the lower frequency of the frequency band	Maximum mean EIRP density dBm/kHz	0.0 to -0.1 MHz	$-33.6 + 153.3 \times \Delta_{FL}$	-0.1 to -0.3 MHz	$-49 + 20 \times (\Delta_{FL} + 0.1)$	-0.3 to -0.9 MHz	-53	-0.9 to -1.5 MHz	-56	-1.5 to -5.7 MHz	-74
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6	Channel occupation rules	Not specified														
7	Duplex type/separation	Base station transmit Repeater transmit/receive Paired band 95 MHz below (Table 3.1)														
8	Licensing Regime	WT Act Concurrent spectrum access licence														
9	Additional essential requirements	-														
Informative Elements (10-13)																
10	Frequency planning assumptions	-														
11	Reference	-														
12	Remarks	-														
13	Notification Number	2005/695/UK														

Section 4

Additional performance parameters

(informative)

None specified

Section 5

Contact details

Ofcom, Riverside House, 2a Southwark Bridge Road, London, SE1 9HA

- Technical enquiries to Steve Green
- Tel: 020 7783 4384
- Fax: 020 7783 4303
- Email: mbt.enquiry@ofcom.org.uk
- Website: <http://www.ofcom.org.uk/radiocomms/>

Section 6

Document history

Version	Date	Changes
1.0	19.07.05	Original Draft
1.1	02.12.05	Revised Mask
1.2	19.04.06	Final Text