



UK Radio Interface Requirement 2015
Multipoint radio-relay systems
Operating within the 1 – 11 GHz
Public Fixed Wireless Access Licensed Bands

(Version **5.0**)

98/34/EC Notification Number: [2002/255/UK](#)

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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 (SI) 730 of 13 March 2000. In accordance with Articles 4.1 and 7.2 of Directive 1999/5/EC, this UK Radio Interface Requirement contains the requirements for the licensing and use of Public Fixed Wireless Access (PFWA) terrestrial multipoint radio systems in the specified frequency bands.
- 1.2 Nothing in this UK Radio Interface Requirement shall preclude the need for equipment and antennas to comply with the requirements of 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 licensing of multipoint radio systems. All licensed frequency bands (1 to 11 GHz) administered by the RA in the UK for terrestrial multipoint services are covered.
- 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 multipoint radio systems.
- 1.6 The RA has publicly consulted with manufacturers and operators on all aspects of this UK Radio Interface Requirement including any assumptions made for the criteria and parameter values necessary to facilitate inter-operator and inter-service coexistence. 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 Radio Requirements for Operation within the UK

- 2.1 The minimum radio 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 PFWA terrestrial multipoint radio systems. 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 PFWA terrestrial multipoint radio relay systems to be licensed in the UK. Table 2.1 contains the relevant high level primary parameters, permissible within the frequency bands allocated to the PFWA terrestrial multipoint service in the UK. These together with the 'essential requirement' prescribed in Article 3.2 of the Directive 1999/5/EC constitute the minimum system requirements for PFWA terrestrial multipoint radio operation within the UK.
- 2.4 The Candidate Harmonised Standard EN 301 753 is intended as the generic Harmonised Standard which implements the 'essential requirements' under Article 3.2 of Directive 1999/5/EC for Fixed Terrestrial (multipoint) radio systems. ETSI have the responsibility for drafting this generic Candidate Harmonised Standard. Conformance with Candidate Harmonised Standards provides a presumption of compliance with those 'essential requirement' of Directive 1999/5/EC as are covered by the said Candidate Harmonised Standards. Please note, there are two other routes to compliance with the 'essential requirements' of Directive 1999/5/EC, which do not require EN 301 753. See the RA web site for alternative routes for R&TTE compliance.
- 2.5 The relevant co-existence and co-ordination documents which outline the principles used to co-ordinate all PFWA terrestrial multipoint radio systems, are available via the RA web site or upon request from the technical enquiry contact given on the back of this document.
- 2.6 This UK Radio Interface Requirement provides the necessary technical information which facilitates access to the PFWA terrestrial multipoint radio spectrum by making clear the assumptions that are made in planning PFWA terrestrial multipoint radio systems in the UK. With the exception of any power limits, 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.

Table 2.1: Minimum Radio Requirements: Licensed Bands

Frequency Range (MHz)	Channel Plan	Bit Rate (Mbits/s)	Channel Size (MHz)	Maximum Radiated Spectral Power Density eirp (dBW / MHz)	Comments
2025 – 2110 2200 – 2285 Note-1	In accordance with CEPT Recommendation T/R 13-01 Annex C.	No bit rate restrictions. Note-2	From 0.25 MHz scaleable up to the full licensed allocation	+5 Notes-3 & 4	Note-1: inter service sharing with Space Sciences (Satellite Earth Station, Low Earth Orbiting and Geostationary Satellite transceivers) and Fixed Services (Troposcatter point-to-point transceivers). Note-2: terminal station data rate limitations are subject to the outcome of the UK Public Consultation on FWA @ 2 GHz. Note-3: the carrier power shall normally be <+5 dBW/MHz, however higher powers up to though not exceeding +13 dBW/MHz will be considered on a case by case basis. Note-4: co-ordination & site clearance considerations may impose additional restrictions on the maximum radiated power allowed on specific frequencies, directions and locations.
3480 – 3500 3580 – 3600	In accordance with CEPT Recommendation T/R 14-03 Annex B1. Note-5	No bit rate restrictions.	From 0.25 MHz scaleable up to the full licensed allocation	+14 Notes-6 & 7	Note-5: although this channel plan assumed FDD (Frequency Division Duplex) systems with base station downlink transmit in the upper band, TDD (Time Division Duplex) systems will also be allowed. Note-6: the carrier power shall normally be <+14 dBW/MHz, however higher powers up to though not exceeding +21 dBW/MHz will be considered on a case by case basis (e.g. - for example but not exclusively, back haul purposes using narrow beam antennas). Note-7: co-ordination & site clearance considerations may impose additional restrictions on the maximum radiated power allowed on specific frequencies, directions and locations. See the relevant co-ordination and co-existence guidelines for details.
Core Protected 3605 – 3641 3925 – 3961 Extended Unprotected 3641 – 3689 3961 – 4009 Note-8	In accordance with CEPT Recommendation T/R 12-08 Annex A. Note-9	No bit rate restrictions.	From 0.25 MHz scaleable up to the full licensed core allocation Note -9	+3 Notes-7 & 10	Note-8: inter service sharing with Fixed Space Services (Satellite Earth Station receivers) and Fixed Services (Point-to-Point transceivers). Note-9: start frequencies for the 320 MHz duplex split paired bands, are offset by 5 MHz above the recommendation. The paired bands are 2 x 36 MHz core allocation (protected co-primary with Satellite Earth Station receivers) with 2 x 48 MHz extended allocation (unprotected sharing with Satellite Earth Station receivers and Terrestrial Point-to-Point transceivers) only to be considered for use on a case by case basis. See the relevant co-ordination and co-existence guidelines for details. Note-10: the carrier power shall normally be <+3 dBW/MHz, however higher powers up to though not exceeding +14 dBW/MHz will be considered on a case by case basis. See the relevant co-ordination and co-existence guidelines for details.
10125 – 10225 10475 – 10575	In accordance with CEPT Recommendation T/R 12-05 Annex A. Note-11	No bit rate restrictions.	From 0.5 MHz scaleable up to the full licensed allocation	+10 Notes-7 & 12	Note-11: start frequencies for the paired bands are offset by 25 MHz below the recommendation and the paired bands are 2 x 100 MHz wide instead of 2 x 150 MHz. Note-12: the carrier power shall normally be <+10 dBW/MHz, however higher powers up to though not exceeding +17 dBW/MHz will be considered on a case by case basis.

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Annex A. Additional Performance Parameters (Informative)

The following points are included for information only and have no regulatory status:

- A.1 Standards EN 300 636 and EN 301 021 contain additional performance parameters and limits that the Radiocommunications Agency assume are met by TDMA / OFDM / OFDMA point-to-multipoint radio equipment when planning and managing the radio spectrum in the UK.
- A.2 Standards EN 301 373 and EN 301 080 contain additional performance parameters and limits that the Radiocommunications Agency assume are met by FDMA point-to-multipoint radio equipment when planning and managing the radio spectrum in the UK.
- A.3 Standards EN 301 055 and EN 301 124 contain additional performance parameters and limits that the Radiocommunications Agency assume are met by DS-CDMA point-to-multipoint radio equipment when planning and managing the radio spectrum in the UK.
- A.4 Standards EN 301 179 and EN 301 253 contain additional performance parameters and limits that the Radiocommunications Agency assume are met by FH-CDMA point-to-multipoint radio equipment when planning and managing the radio spectrum in the UK.
- A.5 Standard EN 301 744 contains additional performance parameters and limits that the Radiocommunications Agency assume are met by DS-CD/TDMA point-to-multipoint radio equipment when planning and managing the radio spectrum in the UK.
- A.6 Systems utilising equipment that does not fulfil these additional performance parameters and limits, cannot be guaranteed protection in the case of interference.
- A.7 Standards EN 301 525 and EN 302 085 contain additional performance parameters and limits that the Radiocommunications Agency assume are met by point-to-multipoint radio antennas when planning and managing the radio spectrum in the UK.
- A.8 Systems utilising antennas that do not fulfil these additional performance parameters and limits, cannot be guaranteed protection in the case of interference.

Document history

Version	Date	Changes
0.2	03/07/00	None
1.0	15/12/00	Editorial.
2.0	28/03/02	Maximum radiated power – reduced. Maximum radiated power – expressed in dBW / MHz. Channel size – scaleable up to the full licensed allocation. Frequency bands – licence exempt bands excluded. Frequency bands – 3.4 GHz band amended.
3.0	19/06/02	References – removed. Section 2 – amended. Table 2.1 – amended. Maximum radiated power – increased. Tables 2.2, 2.3 & 2.4 – removed.
4.0	27/06/02	Section 1 – terminology amended. Section 2 – terminology amended. Table 2.1 – notes amended.
5.0	01/10/02	Section 1.6 – amended. Section 2.6 – amended. Table 2.1 – Bit Rate and Comments columns amended.

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