

# UK Interface Requirement 2038

**Programme making and special events (PMSE)**

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## Section 1

# References

- 1.1 **EN 300 422** - Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 1: Technical characteristics and test methods.
- 1.2 **EN 300 086** - Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment with an internal or external RF connector intended primarily for analogue speech; Part 1: Technical characteristics and methods of measurement.
- 1.3 **EN 300 113** - Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 1: Technical characteristics and methods of measurement.
- 1.4 **EN 300 454** - Electromagnetic compatibility and Radio spectrum Matters (ERM); Wide band audio links; Part 1: Technical characteristics and test methods.
- 1.5 **EN 301 840** - Electromagnetic compatibility and Radio spectrum Matters (ERM); Digital radio microphones operating in the CEPT Harmonized band 1 785 MHz to 1 800 MHz; Part 1: Technical characteristics and methods of measurement.
- 1.6 **EN 301 489** - Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 9: Specific conditions for wireless microphones, similar Radio Frequency (RF) audio link equipment, cordless audio and in-ear monitoring devices.
- 1.7 **ETS 300 445** - Radio Equipment and Systems (RES); Electro-Magnetic Compatibility (EMC) standard for wireless microphones and similar Radio Frequency (RF) audio link equipment.

**Note:** These references are included for information purposes only. Compliance with these referenced standards is not mandatory.

## 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 radio equipment for Programme Making and Special Events 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 and use of radio equipment for Programme Making and Special Events in the UK.
- 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 Programme Making and Special Events.
- 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 Programme Making and Special Events. 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 of Programme Making and Special Events in the UK. Table 3.1 contains 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 Programme Making and Special Events equipment 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 Programme Making and Special Events services 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 Programme Making and Special Events spectrum by making clear the assumptions that are made in planning the use of the Programme Making and Special Events 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 Programme Making and Special Events spectrum.**

<b>Mandatory Elements (1-9)</b>		
1	Frequency band (or bands)	See Annex A
2	Radio service	Programme Making and Special Events
3	Application	Programme Making and Special Events Licence
4	Channelling modulation	See Annex A
5	Transmit power limit	See Annex A.
6	Channel occupation rules	N/A.
7	Duplex type/separation	N/A
8	Licensing Regime	Individual licence, programme Making and Special Events –Standard and PMSE UK (Wireless microphone).
9	Additional essential requirements	See Annex A
<b>Informative Elements (10-13)</b>		
10	Frequency planning assumptions	EN 300 422, EN 300 086, EN 300 113, EN 300 454, EN 301 840, EN 301 489, ETS 300 445
11	References	EN 300 422, EN 300 086, EN 300 113, EN 300 454, EN 301 840, EN 301 489, ETS 300 445
12	Remarks	Licensing may be restricted to geographical and certain technical restrictions.
13	Notification Number	2000/703/UK

**Section 4**

# Additional performance parameters

**(informative)**

None specified

## Section 5

# Annex A

### Annex A1 - Minimum Requirements for Radiomicrophones

Wireless telegraphy apparatus designed or adapted for telephony, for the purpose of aids to project personal voice or music.

Frequencies or Frequency Band (MHz)	Radiated level <sup>1</sup>	Maximum Channel Bandwidth	Notes	Reference Standard <sup>2</sup>
175.250, 175.525, 176.400, 176.600, 176.800, 177.000, 184.600, 184.800, 185.000, 191.700, 191.900, 192.100, 192.300, 192.600, 192.800, 193.000, 199.700, 199.900, 200.100, 200.300, 200.600, 200.800, 201.000, 207.700, 207.900, 208.100, 208.300, 208.600, 208.800, 209.000, 216.100, 216.300, 216.600, 216.800, 217.000	*10mW erp	200 kHz	Some frequencies not available for use in Northern Ireland, Channel Isles & Isle of Man	EN 300 422
470.00 to 854.00 MHz	*10 mW erp	200 kHz	This band is shared with broadcasting, aeronautical radiolocation & radioastronomy services. The availability of frequencies for radio microphones depends on location	EN 300 422
854.00 to 862.00 MHz	*10 mW erp	200 kHz		EN 300 422
1785.00 to 1800.00 MHz	**10 mW erp	600 kHz	For digital radiomicrophones only	EN 301 840

\* Subject to ECC Consultation and adoption, may be amended to 50 mW in the future.

\*\* Subject to ECC Consultation and adoption, may be amended to 20 mW in the future.

<sup>1</sup> Radiated level may be increased to 50 mW erp for transmitting equipment designed to be worn in close contact with the body.

<sup>2</sup> Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory



## Annex A2 - Minimum Requirements for Talkback

Wireless telegraphy apparatus designed or adapted for telephony, for the purpose of communicating the instructions of the director instantly to all those concerned in making the programme; these include presenters, interviewers, cameramen, sound operators, lighting operators and engineers.

Frequencies or Frequency Band (MHz)	Maximum Radiated level	Channel Bandwidth	Notes	Reference Standard <sup>1</sup>
47.55 to 48.80 52.00 to 52.95	25 W erp	12.5 kHz	For on-site use at temporary locations. Duplex Base Tx - 52 MHz band Duplex Portable Tx - 48 MHz band	EN 300 086
67.7500 to 67.8375	25 W erp	12.5 kHz	For on-site use at temporary locations. Base Tx. Duplex with 75 MHz band	EN 300 086 <sup>2</sup>
69.15625 to 69.18125	25 W erp	12.5 kHz	For wide area or on-site use at temporary locations. Base Tx. Duplex with 82 MHz band.	EN 300 086
74.68125 to 74.71875	25 W erp	12.5 kHz	Simplex.	
75.26250 to 75.30000	25 W erp	12.5 kHz	For on-site use at temporary locations. Portable Tx. Duplex with 67 MHz band	
76.80625 to 76.84375	25 W erp	12.5 kHz	For wide-area use. Mobile Tx. Duplex with 86 MHz	
78.18375 to 78.25875	25 W erp	12.5 kHz	For wide area or on-site use at temporary locations. Simplex.	
82.65625 to 86.68125	25 W erp	12.5 kHz	For on-site use at temporary locations. Portable Tx. Duplex with 69 MHz band	
86.6750	25 W erp	12.5 kHz	Available only in Wales & West England	
86.80625 to 86.84375	25 W erp	12.5 kHz	For wide-area use. Base Tx. Duplex with 76 MHz	EN 300 086
140.98750 to 141.48750	25 W erp	12.5 kHz	For wide area use. Simplex and Duplex Base Tx. Duplex with 212 MHz band. Not available in Channel Islands. Restricted availability in Northern Ireland & Scotland.	
181.69375 to 181.80625	25 W erp	12.5 kHz	For wide area use. Simplex	
211.91875 to 212.19375	25 W erp	12.5 kHz	For wide area use. Mobile Tx. Duplex with 141 MHz band Not Available in Northern Ireland, Isle of Man or Channel Islands	

... continued

<sup>1</sup> Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory.

<sup>2</sup> Transmitters operating with 100% duty cycle in these bands are assumed to exceed a Transmitter Intermodulation Attenuation of 70 dB which is appropriate for base stations to be used in special service conditions (For example, EN300 086 para. 5.1.7)

## Annex A2 - Minimum Requirements for Talkback (continued)

Wireless telegraphy apparatus designed or adapted for telephony, for the purpose of communicating the instructions of the director instantly to all those concerned in making the programme; these include presenters, interviewers, cameramen, sound operators, lighting operators and engineers.

Frequencies or Frequency Band (MHz)	Maximum Radiated level	Channel Bandwidth	Notes	Reference Standard <sup>1</sup>
427.7625 to 428.0125 442.2625 to 442.5125	25 W erp	12.5 kHz	For wide area or on-site use at temporary locations. Simplex and Duplex. Available only in Greater London, West & East Midlands, Greater Manchester, Merseyside, South Yorkshire, Cleveland, Tyne & Wear, Glasgow, Edinburgh & Aberdeen.	EN 300 086 <sup>2</sup>
446.42500 to 447.51250	5 W erp	12.5 kHz	For on-site use at temporary locations. Base Tx. Duplex with 467 MHz band.	
454.98750 to 455.47500	5 W erp	12.5 kHz	For on-site use at temporary locations. Base Tx Duplex with 468 MHz band.	
457.25000 to 457.47500	5 W erp	12.5 kHz	For on-site use at temporary locations. Base Tx Duplex with 467 MHz band	
461.23125 to 461.25625	5 W erp	12.5 kHz	For on-site use at temporary locations. Base Tx Duplex with 468 MHz band.	
462.75000 to 463.00000	1 W erp	12.5 kHz	For indoor use at permanent locations. Base Tx Duplex with 469 MHz band	
467.2625 to 469.8750	1 W erp	12.5 kHz	For on-site use at temporary locations. Portable Tx Duplex with 455, 457 and 462 MHz bands. For indoor use at permanent locations. Portable Tx Duplex with 462 MHz band.	EN 300 086
470.0 to 582.0 614.0 to 854.0	1 W erp	12.5 kHz, 25 kHz	For indoor use at permanent locations. These bands are shared with broadcasting. The availability of frequencies depends on location.	

<sup>1</sup> Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory.

<sup>2</sup> Transmitters operating with 100% duty cycle in these bands are assumed to exceed a Transmitter Intermodulation Attenuation of 70 dB which is appropriate for base stations to be used in special service conditions (For example, EN300 086 para. 5.1.7)

### Annex A3 - Minimum Requirements for Programme Audio Links

Wireless telegraphy apparatus designed or adapted for telephony, for the purpose of carrying broadcast-quality monophonic or stereophonic music and speech signals or for carrying multiple communications-quality talkback signals.

Frequencies or Frequency Band (MHz)	Radiated level	Channel Bandwidth	Notes	Reference Standard <sup>1</sup>
48.425, 48.475, 48.525, 52.875, 52.925	10 W erp	50 kHz	For temporary and permanent mono point-to-point links.	EN 300 454
48.3000, 52.7500	10 W erp	200 kHz	For temporary and permanent stereo point-to-point links.	
53.7500 to 55.7500 60.7500 to 62.7500	5 W erp	75 kHz	For portable links at temporary locations.	
191.7, 199.7, 199.9, 200.1	1 W erp	200 kHz	For portable links at temporary locations. Not Available in Northern Ireland, Isle of Man or Channel Islands	
215.26875 to 215.49375	25 W erp	75 kHz	For temporary point-to-point links.	
425.3375, 425.3875, 425.4375, 425.4875, 425.5375	25 W erp	50 kHz	For temporary point-to-point links	
446.5125 to 447.5125 454.9875 to 455.4750	25 W erp	50 kHz	For temporary point-to-point links.	
467.2625 to 469.875	25 W erp	50 kHz	For portable or temporary point-to-point links. These bands are adjacent to TV broadcasting. The availability of frequencies depends on location.	
470 to 590, 598 to 606, 614 to 854	5 W erp	200 kHz	For temporary point-to-point links. These bands are shared with broadcasting. The availability of frequencies depends on location	
854.250 to 858.750, 859.750 to 862.000	5 W erp	50 kHz, 200 kHz	For portable or temporary point-to-point links. These bands are adjacent to TV broadcasting. The availability of frequencies depends on location.	
1488.00 to 1491.00	20 dBW erp	500 kHz	Temporary point-to-point digital links.	MPT 1410
1517.00 to 1525.00	20 dBW erp	500 kHz	For temporary and permanent, analogue and digital point-to-point links.	EN 300 454 EN 300 630 EN 300 631

<sup>1</sup> Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory.

## Annex A4 - Minimum Requirements for Programme Video Links

Wireless telegraphy apparatus designed or adapted for carrying broadcast-quality video together with music and/or speech signals.

Frequencies or Frequency Band (GHz)	Radiated level	Maximum Channel Bandwidth	Notes	Reference Standard <sup>1</sup>
2.025 to 2.110	30 dBW erp	10 MHz	Digital video links and Wireless cameras.	EN 302 064
2.200 to 2.290	30 dBW erp	10 MHz	Digital Wireless cameras	
2.39 to 2.69	20 dBW erp	20 MHz	Temporary point-to-point, mobile & portable links. Digital Wireless cameras	
2.39 to 2.69	40 dBW erp	20 MHz	Temporary point-to-point, mobile & portable links. Analogue Wireless cameras	
3.400 to 3.420	13 dBW erp	20 MHz	Digital video links and Wireless cameras	
3.420 to 3.440	30 dBW erp	10 MHz	Digital video links and Wireless cameras	
3.5 to 3.58	40 dBW erp	20 MHz	Digital video links and Wireless cameras	
5.4820, 5.5060, 5.5300, 5.5540, 5.5780, 5.6925, 5.7150, 5.7425, 5.7800, 5.8050	40 dBW erp	20 MHz	Temporary point-to-point, mobile & portable links. Wireless cameras	
5.850 to 5.925	40 dBW erp	20 MHz	Temporary point-to-point, mobile & portable links. Analogue and Digital Wireless cameras	EN 302 064
7.1100 to 7.2500	40 dBW erp	20 MHz	Temporary point-to-point, mobile & portable links. Wireless cameras	
7.3125, 7.3475	40 dBW erp	20 MHz	Temporary point-to-point, mobile & portable links. Wireless cameras	
7.3620 to 7.4240	40 dBW erp	20 MHz	Temporary point-to-point, mobile & portable links. Wireless cameras	
8.4700, 8.4900	40 dBW erp	20 MHz	Temporary point-to-point, mobile & portable links. Wireless cameras	

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<sup>1</sup> Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory.

### Annex A4 - Minimum Requirements for Programme Video Links (continued)

Wireless telegraphy apparatus designed or adapted for carrying broadcast-quality video together with music and/or speech signals.

Frequencies or Frequency Band (GHz)	Radiated level	Maximum Channel Bandwidth	Notes	Reference Standard <sup>1</sup>
10.31, 10.33, 10.35	40 dBW erp	20 MHz	Temporary point-to-point, mobile & portable video link. Wireless cameras	EN 302 064
11.74666, 11.82338, 11.9001, 11.97682	-20 dBW erp	20 MHz	Low power Wireless cameras	
12.2125, 12.2375, 12.2625, 12.2875, 12.3125, 12.3375, 12.3625, 12.3875, 12.4125, 12.4375, 12.4625, 12.4875	40 dBW erp	25 MHz	Temporary point-to-point, mobile & portable links. Wireless cameras	
24.2500 to 24.5000	40 dBW erp	25 MHz	Temporary point-to-point, mobile & portable links. Wireless cameras	
48.0000 to 48.4000	30 dBW erp	100 MHz	Temporary point-to-point links.	

<sup>1</sup> Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory.

## Annex A5 - Minimum Requirements for Data Links

Wireless telegraphy apparatus designed or adapted for the remote control of cameras and other programme making equipment and for signalling.

Frequencies or Frequency Band (MHz)	Radiated level	Channel Bandwidth	Notes	Reference Standard <sup>1</sup>
181.74375, 181.76875, 181.79375, 189.70625, 189.78125, 189.79375	10 W erp	12.5 kHz		EN 300 113
462.76875, 462.85625, 462.93125, 462.98125	1 W erp	12.5 kHz	Limited availability in urban areas.	EN 300 113 <sup>2</sup>

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<sup>1</sup> Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory.

<sup>2</sup> Transmitters operating with 100% duty cycle in this band are assumed to exceed a Transmitter Intermodulation Attenuation of 70 dB which is appropriate for base stations to be used in special service conditions (For example, EN300 086 para. 5.1.7)

## Section 6

# Contact details

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

Technical enquiries to the Ofcom Central Licensing Team:-

- Tel: 020 7981 3087
- Fax: 020 7981 3061
- Email: [centrallicensingteam@ofcom.org.uk](mailto:centrallicensingteam@ofcom.org.uk)
- Website: <http://www.ofcom.org.uk/radiocomms/ifi/licensing/classes/pmse/>

## Section 7

# Document history

Version	Date	Changes
1.0	Jan 2001	Initial Publication
2.0	Oct 2004	Editorial changes.
2.1	Feb 2006	Published in Ofcom format