



Commission for
Communications Regulation

Guidance Notes

Radio Licensing for Special Events and Temporary Use in Ireland

Guidelines concerning the licence requirements for the operation of radio equipment on a temporary basis, in particular at special events

General Document

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1 Introduction

1. The Commission for Communications Regulation (ComReg) is the statutory body responsible for the management of the radio frequency spectrum in Ireland. ComReg recognises the importance of special events in the economic, social and cultural life of Ireland, and is aware of the important role which large high profile events, such as the Ryder Cup in 2006 and the Special Olympics in 2010, continue to play in the promotion of Ireland's image internationally. Consequently, ComReg regards it as critical that stakeholders have access to the latest and most up-to-date information concerning the availability of radio spectrum for temporary use.
2. Radio spectrum is used by many devices employed at modern major events. Examples of wireless devices employed include wireless microphones (for concert performers and sports commentators), hand portables or "walkie-talkies" (for stewarding, event coordination etc.), wireless cameras (typically for sports coverage) including wireless closed-circuit television (CCTV) cameras (for safety and security), many of which are integral to state-of-the-art coverage of major special events.
3. These guidelines provide information to the applicant on ComReg's Temporary Business Radio licensing scheme. Amongst other things, these guidelines provide information on:
 - a. licence regimes appropriate to temporary operation of radio equipment;
 - b. equipment technical standards;
 - c. current and future spectrum availability; and
 - d. the application process.
4. When planning events, organisers are advised to apply for a licence at the earliest possible stage as:
 - a. spectrum available for temporary licensing is limited and, as such, it may not be possible to find appropriate spectrum at short notice;
 - b. it may take time to determine if adequate spectrum is available, particularly for large events and if co-ordination is required with the UK which is generally the case for events close to the border with Northern Ireland;
 - c. there may be strong demand for spectrum from the various parties involved in the event and, as such, it is necessary to try and meet everybody's requirements as far as is practicable; and

- d. technical and regulatory constraints may mean that a particular type of equipment which is suitable for operation in another country may not be suitable for use in Ireland¹.
5. ComReg advises all prospective event organisers to make their technical staff and radio suppliers aware of the information contained in this document so that they may select the appropriate radio equipment for operation at special events in Ireland and comply with the relevant licensing requirements. Queries regarding these guidelines or on the licensing process can be directed to ComReg's Licensing Operations Team by telephone on 01 804 9600, or by email to licensing@comreg.ie .
6. Applicants are advised to check for the latest edition of published documents in the publications section of www.comreg.ie.
7. ComReg may revise these guidelines as required.
8. The possession and use of radio equipment in Ireland is governed by the Wireless Telegraphy Act 1926, (No 45 of 1926) (as amended), which requires, amongst other things, that an appropriate Wireless Telegraphy licence must be held, unless the relevant apparatus is exempt from licensing.

¹ For example a wireless camera which transmits in the 3.5 GHz band for which a licence may be available in the UK or another European Country may not be licensable in Ireland. This is because wireless broadband systems are licensed in that particular band and therefore wireless cameras might cause detrimental interference to such systems and vice-versa. Early application allows the operator sufficient time to procure alternative equipment suitable for the Irish band plan.

2 Types of Licences

2.1 Temporary Business Radio Licences

9. Licences are issued to allow the use of radio equipment on a temporary basis for a limited period. Devices typically licensed under a Temporary Business Radio Licence include:
 - a. Hand Portables / Walkie-talkies;
 - b. Two-way radio base stations and repeaters;
 - c. Wireless cameras;
 - d. Wireless microphones;
 - e. Miscellaneous data & telemetry devices (e.g. for wireless camera control).

2.2 Temporary Business Radio Licence Application Process

10. A Temporary Business Radio licence allows for the use of radio equipment at a specified location and event for the duration specified on the licence, not exceeding a maximum period of six months.
11. Licences must be issued to a legal entity i.e. either an individual or a limited company
12. An application will not be processed until ComReg has received a valid application. An application is only considered valid on receipt of a completed Application Form with a signed Declaration Form found in Part 4A and on receipt of the licence fee.
13. Applications for large events must be submitted no later than 10 working days prior to the start of the event. ComReg may not be able to meet the frequency requirements for applications received after this cut off period.
14. The Application Form for Temporary Business Radio (ComReg 02/02R3) can be found on the ComReg website².
15. The fees for Temporary Business Radio are based on quantity of equipment in use and consist of a fixed charge of €12 plus a €12 fee for each piece of equipment used.
16. Completed Applications should be forwarded to either:
 - a. licensing@comreg.ie with PMSE inserted in the subject line or;
 - b. The Commission for Communications Regulation, Spectrum Licensing Section, Abbey Court, Irish Life Centre, Lower Abbey Street, Dublin 1

² http://www.comreg.ie/_fileupload/publications/ComReg0202R3.pdf

2.3 Satellite Earth Station Licences

17. This scheme licences satellite earth stations, commonly referred to as Satellite News Gathering (SNG) systems to transmit live or recently recorded footage, as in the case of outside broadcast and news media vehicles.
18. The relevant guidelines and applicants forms for Satellite Earth Station Licences can be found on the ComReg website and via the links below:
 - a. Satellite Earth Station Licences in the Fixed Satellite Service in Spectrum above 3 GHz (ComReg 00/64R2)³
 - b. Application Form for Fixed Satellite Earth Station licences in Fixed Satellite Services in spectrum above 3 GHz transportable (ComReg 00/67R2)⁴
 - c. Application Form for Transportable Earth Station (TES) Licence (ComReg 08/32)⁵

2.4 Temporary Point-to-Point Radio Link Licences

19. A typical point-to-point radio link consists of two stations with a clear line of sight between them and separated by distances of up to about 40 kilometres. Each station employs a highly directive antenna for transmission and reception. At some events there may be a requirement to deploy point-to-point links to relay mobile phone traffic from temporarily deployed base stations or to relay broadcast coverage back to a studio.
20. The point-to-point radio link licensing scheme allows for the temporary operation of links, subject to spectrum availability. Point-to-point radio links can be applied for through our online licensing facility at www.elicensing.comreg.ie. Further information on point-to-point radio links can be found on the ComReg website.
21. The guidelines and application form for point-to-point radio links can be found on the ComReg website and via links below:

³http://www.comreg.ie/publications/guidelines_for_satellite_earth_station_ses_licences_operating_in_spectrum_above_3ghz.597.103086.p.html

⁴http://www.comreg.ie/publications/fixed_satellite_earth_station_licences_in_the_fixed_satellite_service_in_spectrum_above_3ghz_transportable_-_application_form__.531.100069.p.html

⁵http://www.comreg.ie/publications/application_form_for_transportable_earth_station_tes_licence.531.103083.p.html

- a. Guidelines to Applicants for Radio Links - Point-to-Point above 1 GHz Licences (ComReg 09/89)⁶
- b. Application Form -Point-to-Point Radio Link Licence above 1 GHz (ComReg 09/89a)⁷
- c. eLicensing⁸ - Online application facility

2.5 Temporary Broadcasting Licences

22. Licences containing rights of use to spectrum in respect of analogue and digital radio services are issued to RTÉ and the Broadcasting Authority of Ireland (BAI); see the Broadcasting Act 2009 (No 18 of 2009). If you are an independent body and wish to broadcast radio services you should contact the BAI at info@bai.ie .

2.6 Other Options

23. In addition to the above licence regimes, other options to be considered for operating radio equipment on a temporary basis are:

Third Party Business Radio Licensing

24. For Private Mobile Radio (PMR) equipment (e.g. walkie-talkies) it may be possible to use a frequency channel licensed to a radio supplier who holds a Third Party Business Radio Licence (TPBR). A TPBR licence permits the licensee to provide business radio services to third parties on a nationwide basis.

25. Applicants should apply directly to the holder of the TPBR licence. Any fees involved are at the discretion of the TPBR licence holder. (The TPBR scheme has been closed since December 2011 therefore no new TPBR licences can be issued).

26. Further information, including a list of Third Party Business Radio Licensees, can be found on the ComReg website⁹

⁶ http://www.comreg.ie/publications/guidelines_to_applications_for_radio_link_licences.541.103517.p.html

⁷ http://www.comreg.ie/publications/application_form_for_radio_link_licences.541.103518.p.html

⁸ <https://www.elicensing.comreg.ie/login.aspx>

⁹ http://www.comreg.ie/radio_spectrum/search.541.874.10021.0.rslicensing.html

Licence-exempt Operation

27. It is also worth noting that there are some radio systems which are exempt from licensing in Ireland. Licence-exempt equipment share radio spectrum with other radio devices, they have a restricted output power and are intended for use over short distances. It is not permitted for licence-exempt equipment to cause interference to other devices. In addition, operators of such equipment are not entitled to claim protection from any interference received.
28. Examples of short range radio systems used at special events, for which licence-exempt operation is available in specific frequency bands and under specific conditions include wireless microphones and audio systems, hand portables / walkie-talkies (PMR 446) and wireless CCTV links.
29. Details concerning the types of licence-exempt equipment, relevant frequency bands, output power and other additional specific conditions are outlined in Annexes 1 to 4 of this document and also available on the ComReg website¹⁰.

¹⁰ http://www.comreg.ie/radio_spectrum/exemptions.541.488.rslicensing.html

3 Types of Events

Large-scale Events

30. Large-scale events typically entail a strong demand for radio spectrum for uses such as broadcast coverage, surveillance, marshalling, security, team communications and sound relay. Past examples of such events in Ireland have been the Ryder Cup (2006), the World Rally Championship (2007), the Special Olympics (2010), the UEFA Europa League finals (2011) and visits from Queen Elizabeth II and President Obama (2011).
31. Organisers of large-scale events are advised to contact ComReg at the earliest possible planning stage of the event, preferably no less than six months in advance of the event, and before engaging the services of radio suppliers and broadcasters. This is in order to determine the amount of spectrum which will be available at the event location on the specified date.

Nationwide / Regional Events

32. Generally, there is less spectrum available for geographically wide-ranging events such as car rallies and cycle races, than is the case for events centred on a specific location (e.g. a concert or football match). This is because not all channels are available at all locations. Prospective users are advised to contact ComReg as early as possible. It should be noted that ComReg cannot issue a licence for nationwide coverage.

Cross-border Events

33. Wireless equipment used at events (e.g. cross-border car rallies) which take place simultaneously in Ireland and in Northern Ireland will require separate licences and authorisation from the relevant authorities in both jurisdictions.
34. Intending applicants should note that the same set of frequency channels may not be available in both jurisdictions as different National Radio Frequency Plans apply. If applicants wish to use the same channel in on both sides of the border, they are strongly advised to submit their applications at least two months in advance of the event.
35. Contact details for the relevant licensing authorities for Northern Ireland are set out in Annex 6 of this document.

Operation Adjacent to Border with Northern Ireland

36. Applicants intending to operate in counties adjacent to the border with Northern Ireland¹¹ should note that applications for the border region may take longer to process than applications for the rest of the country. This is because ComReg may have to coordinate with its counterpart in Northern Ireland in order to verify that channels assigned would not cause interference in that jurisdiction.

Airborne Operation

37. There are a limited number of channels available for airborne operation. Potential for interference to existing assignments is greater from airborne operation than from ground-based transmitters, consequently, temporary channels for airborne operation, which are shared with permanent services, or which are already assigned to another temporary licensee, will not be assigned for airborne use. Some of the frequencies for airborne operations need to be co-ordinated with the Irish Aviation Authority (IAA)¹². For this reason applicants are advised to apply well in advance of the event. Channels on which airborne operation is not permitted under any circumstances are set out in Annexes 1 to 5 of this document.

¹¹ Co Cavan, Co Donegal, Co Leitrim, Co Louth and Co Monaghan

¹² <https://www.iaa.ie/>

4 Equipment Interface Requirements and R&TTE Equipment Compliance

38. Since 5 June 2001 all radio and telecommunications terminal equipment placed on the market in Ireland is required to comply with the essential requirements and other relevant provisions of the Radio and Telecommunications Terminal Equipment (R&TTE) Directive (1999/5/EC)¹³.
39. The wireless equipment interface requirements applicable in Ireland are outlined in ComReg 06/47 (Interface Requirements for Radio Services in Ireland). Interface requirements include the administrative and technical requirements associated with operation of radio services in Ireland.
40. It is possible that equipment brought into Ireland from outside the EU or EEA may not be R&TTE compliant as this equipment may have been manufactured to comply with standards which apply in other parts of the world. Any radio equipment used in Ireland must comply with the R&TTE directive and is required to carry the CE mark; otherwise it is non-compliant. The CE mark is required on all products placed on the European market.
41. Licensees are advised to familiarise themselves with the latest revision of ComReg's Interface Requirements for Radio Services in Ireland (ComReg 06/47), as it is the responsibility of the licensee to ensure that all equipment being used is R&TTE compliant. The Interface Requirements for Radio Services in Ireland document (ComReg 06/47) can be found on the ComReg website¹⁴.

¹³ Irish law under Statutory Instrument No 240 of 2001

¹⁴ http://www.comreg.ie/publications/interface_requirements_for_radio_services_in_ireland.583.102528.p.html

5 Spectrum Availability

5.1 Channels Available for Temporary Licensing

42. Listed in the Annexes to this document are the specific channels available as part of a Temporary Business Radio Licence for the various types of equipment typically deployed at events. It should be noted that, while the channel plans in the Annexes are intended to show the current availability of channels for temporary use and are intended to serve as a guide to selecting suitable equipment for operation in Ireland, the bands available are subject to revision from time to time.
43. Applications are processed on a first come first served basis.
44. Geographical restrictions are imposed on some frequency channels and bands. These are noted in the relevant Annexes.
45. It should also be noted that channels will only be assigned for temporary use under a Temporary Business Radio Licence in accordance with the channel plans outlined in the Annexes to this document or as updated by ComReg from time to time. Channels which are not consistent with the channel plans will not be assigned.

5.2 Current and Future Spectrum Availability

Wireless Cameras:

46. Below is the brief list of spectrum bands that are available in Ireland for wireless camera operations on a secondary non-interference basis. A more detailed list is provided in Annex 3 of this document:
- a. 2025 – 2110 MHz
 - b. 2200 – 2300 MHz
 - c. 2300 – 2330 MHz
 - d. 6.425 – 7.125 GHz (U6) and 7.125 – 7.425 GHz (L7)
 - e. 10.3 – 10.5 GHz

47. Some of the bands listed in the Annexes that are currently available for temporary assignment for wireless camera operation are under consideration for other services. The status of these bands may change in the near future:
- a. 1980 – 2010 MHz UMTS¹⁵ Terrestrial
 - b. 2010 – 2025 MHz UMTS Satellite
 - c. 2170 – 2200 MHz UMTS Terrestrial
 - d. 2330 – 2400 MHz Electronic Communication Services

Wireless Microphones / In-ear Monitoring (IEM) Systems

48. Wireless microphones and IEM systems share frequency bands with Television Broadcasting (VHF¹⁶ and UHF¹⁷) and Digital Audio Broadcasting (DAB), which are the primary services in those bands. Consequently, licensed wireless microphones and IEM systems, as secondary services, are only licensed at locations where they will not cause interference to reception of television and digital radio from local transmitters.
49. The current interleaved and unused spectrum between 470 MHz and 790 MHz can be viewed on the ComReg website¹⁸. This document should be used as a guide to assist in selecting preferred frequencies for microphone and IEM use in Ireland. This document is subject to change as required by ComReg and the latest version will be available on our website.

Temporary Private Mobile Radio (Two-way Radio)

50. Private Mobile Radio (PMR) services operate in VHF & UHF frequency bands on a non-interference, non-protected basis. Frequency channels available for these are listed in Annex 1.

¹⁵ Universal Mobile Telecommunications System

¹⁶ Very High Frequency (VHF) range is from 30 MHz to 300 MHz

¹⁷ Ultra High Frequency (UHF) range is from 300 MHz to 3 GHz

¹⁸ http://www.comreg.ie/radio_spectrum/temporary_business_radio_licensing_information.541.821.html

Annex: 1 Private Mobile Radio (Two-way Radio) Channels

Simplex Channels

VHF High Band 164 MHz

7 Channels Available

Max ERP ¹⁹ :	0.5 W
Max Channel Bandwidth:	12.5 kHz

	Centre Frequency (MHz)	Airborne Use Permitted?
A1	164.9500	No
A2	164.9625	No
A3	164.9750	No
A4	164.9875	No
A5	165.0000	No
A6	165.0125	No
A7	165.0250	No

¹⁹ Equivalent Radiated Power

VHF High Band 169 MHz

16 Channels Available

Max ERP:	5 W
Max Channel Bandwidth:	12.5 kHz

	Centre Frequency (MHz)	Airborne Use Permitted?
B1	169.61875	Yes
B2	169.63125	Yes
B3	169.64375	Yes
B4	169.65625	Yes
B5	169.66875	Yes
B6	169.68125	Yes
B7	169.69375	Yes
B8	169.70625	Yes
B9	169.71875	Yes
B10	169.73125	Yes
B11	169.74375	Yes
B12	169.75625	Yes
B13	169.76875	Yes
B14	169.78125	Yes
B15	169.79375	Yes
B16	169.80625	Yes

UHF 441 MHz

64 Channels Available	
Simplex channels in range:	441.2000 - 441.9875 MHz
Channel spacing:	every 12.5 kHz
Max ERP:	25 W
Max channel bandwidth:	12.5 kHz
Airborne operation permitted?	Yes

Example Channels

Centre Frequency (MHz)	Max Effective Radiated Power (ERP)	Max Bandwidth (MHz)	Airborne Use Permitted?
441.2000	5 W	12.5 kHz	Yes
441.2125	5 W	12.5 kHz	Yes
441.9875	5 W	12.5 kHz	Yes

UHF 444 MHz

80 channels available	
Simplex channels in range:	444.0000 - 444.9875 MHz
Channel spacing:	every 12.5 kHz
Max ERP:	25 W
Max channel bandwidth:	12.5 kHz
Airborne operation permitted?	Yes

Example Channels

Centre Frequency (MHz)	Max Effective Radiated Power (ERP)	Max Bandwidth (MHz)	Airborne Use Permitted?
444.0000	5 W	12.5 kHz	Yes
444.0125	5 W	12.5 kHz	Yes
444.9875	5 W	12.5 kHz	Yes

UHF 445 MHz

80 channels available	
Simplex channels in range:	445.0000 - 445.9875 MHz
Channel spacing:	every 12.5 kHz
Max ERP:	25 W
Max channel bandwidth:	12.5 kHz
Airborne operation permitted?	Yes

Example Channels

Centre Frequency (MHz)	Max Effective Radiated Power (ERP)	Max Bandwidth (MHz)	Airborne Use Permitted?
445.0000	5 W	12.5 kHz	Yes
445.0125	5 W	12.5 kHz	Yes
445.9875	5 W	12.5 kHz	Yes

UHF 446MHz

62 channels available	
Simplex channels in range:	446.2250 - 446.9875 MHz
Channel spacing:	every 12.5 kHz
Max ERP:	25 W
Max channel bandwidth:	12.5 kHz
Airborne operation permitted?	Yes

Example Channels

Centre Frequency (MHz)	Max Effective Radiated Power (ERP)	Max Bandwidth (MHz)	Airborne Use Permitted?
446.2250	5 W	12.5 kHz	Yes
446.2375	5 W	12.5 kHz	Yes
446.9875	5 W	12.5 kHz	Yes

UHF 465MHz**15 Channels Available**

Max ERP:	5 W
Max Channel Bandwidth:	12.5 kHz

	Centre Frequency (MHz)	Airborne Use Permitted?
C1	465.8000	Yes
C2	465.8125	Yes
C3	465.8250	Yes
C4	465.8375	Yes
C5	465.8500	Yes
C6	465.8625	Yes
C7	465.8750	Yes
C8	465.8875	Yes
C9	465.9000	Yes
C10	465.9125	Yes
C11	465.9250	Yes
C12	465.9375	Yes
C13	465.9500	Yes
C14	465.9625	Yes
C15	465.9750	Yes

Duplex Channels**VHF Low Band****17 Channels Available**

Max ERP:	Base 25 W	Mobile/Portable 5 W
Max Channel Bandwidth:	12.5 kHz	

	Base (MHz)	Mobiles/Portables (MHz)	Airborne Use Permitted?
D1	80.5125	70.5125	Yes
D2	80.5375	70.5375	Yes
D3	80.6375	70.6375	Yes
D4	80.6625	70.6625	Yes
D5	80.7500	70.7500	Yes
D6	80.8000	70.8000	Yes
D7	80.8625	70.8625	Yes
D8	81.9500	71.9500	Yes
D9	81.9750	71.9750	Yes
D10	81.9875	71.9875	Yes
D11	82.0000	72.0000	Yes
D12	82.0375	72.0375	Yes
D13	82.0500	72.0500	Yes
D14	82.3625	72.3625	Yes
D15	82.3875	72.3875	Yes
D16	82.6875	72.6875	Yes
D17	85.1375	75.5375	Yes

VHF High Band

16 Channels Available

Max ERP:	Base 25 W	Mobile/Portable 5 W
Max Channel Bandwidth:	12.5 kHz	

	Base (MHz)	Mobiles/Portables (MHz)	Airborne Use Permitted?
E1	165.1875	169.9875	Yes
E2	165.5250	170.3250	Yes
E3	166.3875	171.1875	Yes
E4	166.4125	171.2125	Yes
E5	166.4250	171.2250	Yes
E6	166.4625	171.2625	Yes
E7	166.4750	171.2750	Yes
E8	166.5375	171.3375	Yes
E9	167.5000	172.3000	Yes
E10	167.6375	172.4375	Yes
E11	167.6500	172.4500	Yes
E12	167.6625	172.4625	Yes
E13	167.6750	172.4750	Yes
E14	167.6875	172.4875	Yes
E15	167.7000	172.5000	Yes
E16	167.7250	172.5250	Yes

UHF 442/447 MHz

56 channels available	
Base frequency in range:	442.3000 - 442.9875 MHz
Mobile/Portable frequency in range:	447.3000 - 447.9875 MHz
Channel spacing:	every 12.5 kHz
Split between base and mobile/portable frequencies:	5 MHz
Base max ERP:	25 W
Mobile/Portable max ERP:	5 W
Max channel bandwidth:	12.5 kHz
Airborne operation permitted?	Yes

Example Channels

Base (MHz)	Max Effective Radiated Power (ERP)	Mobiles/Portables (MHz)	Max Effective Radiated Power (ERP)	Max Bandwidth (kHz)	Airborne Use Permitted?
442.3000	25 W	447.3000	5 W	12.5 kHz	Yes
442.6000	25 W	447.6000	5 W	12.5 kHz	Yes
442.9875	25 W	447.9875	5 W	12.5 kHz	Yes

UHF 443/448 MHz

80 channels available	
Base frequency in range:	443.0000 - 443.9875 MHz
Mobile/Portable frequency in range:	448.0000 - 448.9875 MHz
Channel spacing:	every 12.5 kHz
Split between base and mobile/portable frequencies:	5 MHz
Base max ERP:	25 W
Mobile/Portable max ERP:	5 W
Max channel bandwidth:	12.5 kHz
Airborne operation permitted?	Yes

Example Channels

Base (MHz)	Max Effective Radiated Power (ERP)	Mobiles/Portables (MHz)	Max Effective Radiated Power (ERP)	Max Bandwidth (kHz)	Airborne Use Permitted?
443.0000	25 W	448.0000	5 W	12.5 kHz	Yes
443.4000	25 W	448.4000	5 W	12.5 kHz	Yes
443.9875	25 W	448.9875	5 W	12.5 kHz	Yes

UHF 456/461MHz**12 Channels Available**

Max ERP:	Base 25 W	Mobile/Portable 5 W
Max Channel Bandwidth:	12.5 kHz	

	Base (MHz)	Mobiles/Portables (MHz)	Geographic Limitations (Regions where the channel is not available)	Airborne Use Permitted?
F1	456.0000	461.5000		Yes
F2	456.0125	461.5125		Yes
F3	456.0250	461.5250	Phoenix Park (Co Dublin), Dublin 7, Co Mayo (North), Co Meath, Co Sligo (West), Co Wicklow (excl. Bray).	No
F4	456.0375	461.5375		Yes
F5	456.0625	461.5625		Yes
F6	456.0750	461.5750		Yes
F7	456.0875	461.5875	Co Mayo (North), Co Sligo (West).	No
F8	456.1000	461.6000	Co Wicklow (excl. Bray), Dublin 14, 16, 24, 6, 6w.	No
F9	456.1125	461.6125		Yes
F10	456.1250	461.6250		Yes
F11	456.1375	461.6375		Yes
F12	456.1500	461.6500	Co Mayo (North), Co Sligo (West).	No

UHF 455/469MHz**36 Channels Available**

Max ERP:	Base 25 W	Mobile/Portable 5 W
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Max Channel Bandwidth:	12.5 kHz
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	Base (MHz)	Mobiles/ Portables (MHz)	Airborne Use Permitted?
G1	455.0000	469.0000	Yes
G2	455.0125	469.0125	Yes
G3	455.0250	469.0250	Yes
G4	455.0375	469.0375	Yes
G5	455.0500	469.0500	Yes
G6	455.0625	469.0625	Yes
G7	455.0750	469.0750	Yes
G8	455.0875	469.0875	Yes
G9	455.1000	469.1000	Yes
G10	455.1125	469.1125	Yes
G11	455.1250	469.1250	Yes
G12	455.1375	469.1375	Yes
G13	455.1500	469.1500	Yes
G14	455.1625	469.1625	Yes
G15	455.1750	469.1750	Yes
G16	455.1875	469.1875	Yes
G17	455.2000	469.2000	Yes
G18	455.2125	469.2125	Yes
G19	455.2250	469.2250	Yes
G20	455.2375	469.2375	Yes
G21	455.2500	469.2500	Yes
G22	455.2625	469.2625	Yes
G23	455.2750	469.2750	Yes
G24	455.2875	469.2875	Yes
G25	455.3000	469.3000	Yes
G26	455.3125	469.3125	Yes
G27	455.3250	469.3250	Yes
G28	455.3375	469.3375	Yes
G29	455.3500	469.3500	Yes
G30	455.3625	469.3625	Yes
G31	455.3750	469.3750	Yes
G32	455.3875	469.3875	Yes
G33	455.4000	469.4000	Yes
G34	455.4125	469.4125	Yes
G35	455.4250	469.4250	Yes
G36	455.4375	469.4375	Yes

Licence-exempt Channels

PMR 446 (Personal Mobile Radio, 446 MHz) is a system using part of the UHF frequency range, and is licence-exempt for personal use in many European Countries including Ireland. A PMR 446 two-way radio is essentially a small handset or walkie-talkie which may operate in the frequency range detailed below without the requirement of a licence. The range offered by PMR handsets can vary from a few hundred metres (in a city) to a few kilometres (open countryside).

The PMR 446 bands are shown in the following table:

	Centre Frequency in Range (MHz)	Channel Spacing (kHz)	Max ERP (mW)
PMR 446 (Analogue)	446.0 - 446.1 MHz	12.5 kHz	500 mW
Digital PMR 446	446.1 - 446.2 MHz	6.25 or 12.5 kHz	500 mW

Please refer to ComReg document 02/71²⁰ (as revised) for further information concerning the interface requirements for PMR 446 equipment.

²⁰“Permitted Short Range Devices in Ireland”: available for download from the Publications section of www.comreg.ie.

Annex: 2 Wireless Microphone / In-ear Monitor Channels

Licensed Channels

VHF Channels

Centre Frequency in Range (MHz)	Max Channel Bandwidth (kHz)	Typical ERP (mW)	Max ERP (W)
174 – 230 MHz	200 kHz	50 mW	1 W

UHF Channels

Centre Frequency in Range (MHz)	Max Channel Bandwidth (kHz)	Typical ERP (mW)	Max ERP (W)
470 – 790 MHz	200 kHz	50 mW	1 W

The current interleaved and unused spectrum between 470 MHz and 790 MHz can be viewed on the ComReg website²¹:

The current interleaved and unused spectrum document is subject to change and may be updated as required by ComReg. The latest version will be available on the ComReg website.

²¹ http://www.comreg.ie/radio_spectrum/temporary_business_radio_licensing_information.541.821.html

Licence-exempt Channels

Low power (10 mW ERP) wireless microphones, if fully compliant with the appropriate exemption order may operate on a licence-exempt basis in the bands listed in the following table:

Band	Centre Frequency in Range (MHz)	Channel Spacing (kHz)	Max ERP (mW)
VHF	173.7 – 175.1 MHz	50 kHz	10 mW
UHF	863.0 – 865.0 MHz	200 kHz	10 mW

Please refer to ComReg document 02/71²² (as revised) for further information concerning the interface requirements for wireless microphones.

²²“Permitted Short Range Devices in Ireland”: available for download from the publications section of the ComReg website.

Annex: 3 Wireless Camera Channels

1980 – 2025 MHz

4 Channels Available

Max ERP:	5 W
Max Channel Bandwidth:	10 MHz

	Centre Frequency (MHz)	Airborne Use Permitted?
H1	1990	Yes
H2	2000	Yes
H3	2010	Yes
H4	2020	Yes

2025 – 2110 MHz**8 Channels Available**

Max ERP:	1 W
Max Channel Bandwidth:	10 MHz

	Centre Frequency (MHz)	Geographic Limitations	Airborne Use Permitted?
I1	2035	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
I2	2045	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
I3	2055	Not available in Co Dublin for bandwidth >8 MHz	No
		Limited availability outside Co Kildare, Co Louth & Co Meath	
I4	2065	Not available in Co Dublin	No
		Limited availability outside Co Kildare, Co Louth & Co Meath	
I5	2075	Not available in Co Dublin	No
		Limited availability outside Co Kildare, Co Louth & Co Meath	
I6	2085	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
I7	2095	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
I8	2105	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No

2170 – 2200 MHz

3 Channels Available	
Max ERP:	5 W
Max Channel Bandwidth:	10 MHz

	Centre Frequency(MHz)	Airborne Use Permitted?
J1	2175	Yes
J2	2185	Yes
J3	2195	Yes

2200 – 2300 MHz**10 Channels Available**

Max Channel Bandwidth: 10 MHz

	Centre Frequency (MHz)	Maximum Effective Radiated Power (ERP)	Geographic Limitations	Airborne Use Permitted?
K1	2205	1 W	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
K2	2215	1 W	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
K3	2225	1 W	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
K4	2235	1 W	Not available in Co Dublin	No
			Limited availability outside Co Kildare, Co Louth & Co Meath	
K5	2245	1 W	Not available in Co Dublin	No
			Limited availability outside Co Kildare, Co Louth & Co Meath	
K6	2255	1 W	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
K7	2265	1 W	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
K8	2275	1 W	Limited availability outside Co Dublin, Co Kildare, Co Louth & Co Meath	No
K9	2285	5 W		Yes
K10	2295	5 W		Yes

2300 – 2400 MHz**10 Channels Available**

Max Channel Bandwidth: 10 MHz

	Centre Frequency (MHz)	Maximum Effective Radiated Power (ERP)	Geographic Limitations (Regions where the channel is not available)	Note	Airborne Use Permitted?
L1	2305*	100 mW	Co Dublin	Outdoor use not recommended in: Co Kildare (North), Co Louth (South) and Co Meath	No
			Western and Central counties listed below*		
L2	2315*	100 mW	Co Dublin	Outdoor use not recommended in: Co Kildare (North), Co Louth (South) and Co Meath	No
			Western and Central counties listed below*		
L3	2325*	100 mW	Western and Central counties listed below*		No
L4	2335	5 W			Yes
L5	2345	5 W		This channel is available for newsgathering on a shared restricted nationwide basis	No
L6	2355	5 W			Yes
L7	2365	5 W			Yes
L8	2375	5 W			Yes
L9	2385	5 W			Yes
L10	2395	5 W			Yes

*** Channels 2305, 2315 and 2325:**

Western and Central Counties where operation on these channels is not permitted:

Co Cavan (West)	Co Kerry	Co Offaly
Co Clare	Co Kildare (South)	Co Roscommon
Co Cork (West)	Co Laois	Co Sligo
Co Donegal	Co Leitrim	
Co Galway	Co Mayo	

10.3 – 10.5 GHz**16 Channels Available**

Max ERP:	5 W
Max Channel Bandwidth:	10 MHz

	Centre Frequency (GHz)	Airborne Use Permitted?
M1	10.305	Yes
M2	10.315	Yes
M3	10.325	Yes
M4	10.335	Yes
M5	10.345	Yes
M6	10.355	Yes
M7	10.365	Yes
M8	10.375	Yes
M9	10.385	Yes
M10	10.435	Yes
M11	10.445	Yes
M12	10.455	Yes
M13	10.465	Yes
M14	10.475	Yes
M15	10.485	Yes
M16	10.495	Yes

U6 (6.425 – 7.125 GHz) and L7 (7.125 – 7.425 GHz)

Interleaved access to U6 and L7 bands are available for wireless cameras for indoor events and at locations where the event is sufficiently far away enough from any existing licensed fixed links using these bands. Therefore, the availability of spectrum in these bands for outdoor events will depend heavily on the geographic location of the event.

Wireless Camera channels in range:	6.425 – 7.425 GHz
Channel spacing:	every 10 MHz or 20 MHz
Max ERP:	5 W
Max Channel Bandwidth:	10 MHz or 20 MHz

Annex: 4 Wireless CCTV (Closed Circuit Television) Link Channels

Licensed Channels

The channels available for licensed temporary wireless CCTV links are the same as for Wireless Cameras. Please refer to Annex 3 for a full channel list.

Licence-exempt Channels

The operation of low power wireless video surveillance links is permitted on a licence-exempt basis in the bands listed in the following table, subject to the maximum output power specified:

Centre Frequency in range (MHz)	Max EIRP (mW)
2400.0 - 2483.5 MHz	25 mW
2400.0 - 2425.0 MHz	100 mW

Please refer to ComReg document 02/71²⁴ (as revised) for further information concerning the interface requirements for video surveillance equipment and non-specific short-range devices.

²³ Equivalent Isotropic Radiated Power

²⁴“Permitted Short Range Devices in Ireland”: available for download from the publications section of the ComReg website.

Annex: 5 Data / Telemetry Channels

VHF Channels

It should be noted that temporary VHF data channels share frequency bands with some broadcasting services which are the primary services in the relevant band.

Consequently, temporary data transmitters, as secondary services, are only licensed at locations where they will not cause interference to reception of television and digital radio from local transmitters.

The channels available for temporary VHF data systems are as shown in the following table:

Centre Frequency in range (MHz)	Max Channel Bandwidth (kHz)	Max ERP (W)	Airborne Use Permitted?
174 - 230 MHz	25 kHz	1 W	No

UHF 12.5 kHz Channels

16 Channels Available

Max Channel Bandwidth:	12.5 KHz
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	Centre Frequency (MHz)	Max Effective Radiated Power (ERP)	Geographic Limitations (Regions where the channel is not available)	Airborne Use Permitted?
N1	456.0375	5 W		Yes
N2	456.1000	1 W	Co Wicklow (excl. Bray)	No
			Dublin 14, 16, 24, 6, 6w	
N3	456.1250	5 W		Yes
N4	455.4125	5 W		Yes
N5	455.4250	5 W		Yes
N6	455.4375	5 W		Yes
N7	455.4500	5 W		Yes
N8	455.4625	5 W		Yes
N9	455.4750	5 W		Yes
N10	455.4875	5 W		Yes
N11	455.5000	5 W		Yes
N12	455.5125	5 W		Yes
N13	455.5250	5 W		Yes
N14	461.5375	5 W		Yes
N15	461.6000	1 W	Co Wicklow (excl. Bray)	No
			Dublin 14, 16, 24, 6, 6w	
N16	461.6250	5 W		Yes

UHF 25 kHz Channels

3 Channels Available

Max Channel Bandwidth:	25 KHz
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	Centre Frequency (MHz)	Max Effective Radiated Power (ERP)	Airborne Use Permitted?
O1	455.4375	5 W	Yes
O2	455.4625	5 W	Yes
O3	455.4875	5 W	Yes

Annex: 6 Useful Contacts

Commission for Communications Regulation (ComReg)

Licensing Operations Unit Tel: +353 1 804 9600
Market Framework Division Fax: +353 1 804 9665

Commission for Communications Email: licensing@comreg.ie
Regulation, Web: www.comreg.ie
Abbey Court Irish Life Centre
Lower Abbey Street
Dublin 1

Interference Investigation / Unlicensed Equipment

Spectrum Compliance Team Tel: +353 1 804 9600
Market Framework Division Fax: +353 1 804 9671

Commission for Communications Email: interference@comreg.ie
Regulation Web: www.comreg.ie
Abbey Court
Irish Life Centre
Lower Abbey Street
Dublin 1

The Broadcasting Authority of Ireland

The Broadcasting Authority of Ireland Tel: + 353 1 644 1200
2 - 5 Warrington Place Fax: + 353 1 644 1299
Dublin 2

Email: info@bai.ie
Web: www.bai.ie

The Joint Frequency Management Group on Behalf of Ofcom - UK

JFMG Ltd
33-34 Alfred Place
London
WC1E 7DP
United Kingdom

Tel: +44 (0) 20 7299 8660
Fax: +44 (0) 20 7299 8661
Out of hours: +44 (0) 7050 177 335

E-mail: info@jfmfg.co.uk
Web: www.jfmfg.co.uk

Office of Communications (Ofcom) - UK

Ofcom Licensing Centre
Riverside House

Tel: +44 (0) 20 7981 3131
or +44 (0) 300 123 1000

2a Southwark Bridge Road
London
SE1 9HA
United Kingdom

Web: www.ofcom.org.uk/licensing