



Commission for
Communications Regulation

Guidance Notes

Guidelines for Business Radio Licences

Guidelines Document

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An Coimisiún um Rialáil Cumarsáide
Commission for Communications Regulation

Abbey Court Irish Life Centre Lower Abbey Street Dublin 1 Ireland
Telephone +353 1 804 9600 Fax +353 1 804 9680 Email info@comreg.ie Web www.comreg.ie

Content

Section	Page
1 Introduction	2
1.1 Radio Equipment.....	4
2 Technical Conditions of Licence.....	5
2.1 Frequency Allocation.....	5
2.2 Coverage Areas & Coordination.....	6
2.3 Effective Radiated Power Levels.....	7
2.4 Arrangements for Two-Way Communications.....	8
2.5 Harmful Interference	8
2.6 Tone Control	9
2.7 Equipment Standards.....	10
2.8 Antenna Height	10
3 Licence Information.....	11
3.1 The Licensee.....	11
3.2 The Licence.....	11
3.3 Licence Duration	11
3.4 Licence Fee Payable.....	11
3.5 Amendments to Licence.....	12
3.6 Licence Renewal.....	12
3.7 Cancellation of a Licence	13
3.8 Revocation and Suspension of a Licence	13
4 Applying for a Licence	14
4.1 Submitting an Application Form	14

Notes to Applicants

This document sets out ComReg's guidelines for persons wishing to apply for a Business Radio Licence.

The Business Radio Licence Guideline document is intended for use with the associated Business Radio Licence Application Form which can be found on the ComReg website: <http://www.comreg.ie> .

ComReg encourages all potential applicants considering submitting an application for a Business Radio Licence to read these Guidelines carefully and to complete the accompanying Application Form in full.

Any queries regarding these guidelines or the licensing process can be directed to ComReg's Licensing Operations Team:

Telephone: +353 (0)1 8049600

E-mail: licensing@comreg.ie

ComReg may revise these Guidelines and associated Application Form at a future date.

Statutory Regulations

In accordance with the Wireless Telegraphy Act, 1926 the appropriate licence must be held to cover possession or use of radio equipment. Possession or use of radio equipment without a licence is an offence which renders the offender liable to criminal prosecution and, on conviction, fines and confiscation of equipment.

Individuals or firms wishing to use radio for two-way communications relating to their business must apply for a licence under the Wireless Telegraphy (Business Radio Licence) Regulations, 1949-1986.

ComReg is subject to Irish and EU rules on the treatment and handling of confidential information, is a "Public Body" for the purpose of the Freedom of Information Act 1997, and is bound by this act in relation to the release of information.

Any personal information provided to ComReg will be treated in accordance with the Data Protection Acts, 1988 & 2003.

1 Introduction

A Business Radio licence permits the operation of two-way radio communication on the business of the licensee. The main users of Business Radio are those which require a reliable means of communication between personnel and in particular groups of personnel over a specific area. Such examples of this include taxi services, courier/delivery services and for public safety and security (Garda, fire brigade and ambulance).

ComReg issue a number of licensing types under a "Business Radio Licence", a selection of which are discussed below. Further information on Business Radio licensing can be found on the ComReg website¹.

Temporary Business Radio

Temporary Business Radio (TBR) allows individuals or firms to apply for temporary licensing of radio equipment² at special events such as concerts and football matches. TBR licences are issued for a maximum of 6 months.

Trunked Radio

A mobile radio system whereby users are dynamically allocated frequencies from a shared pool of radio channels for the duration of a call. After each call the channel is returned to the pool where it can be assigned to another user. Licences are valid for duration of 12 months and renewed annually thereafter.

Community Repeaters

This licensing scheme allows the licensee to establish a community repeater system, and offer commercial radio communication services to customers within its area. This licence covers all elements of the community repeater system including the mobiles, thereby eliminating the requirement for customers to hold individual radio licences.

¹ http://www.comreg.ie/radio_spectrum/search.541.874.10005.0.rslicensing.html

² Licensable TBR equipment includes microphones, hand portables, IEMs, telemetry, cameras and base stations.

Third Party Business Radio

The Third Party Business Radio (TPBR) licence allows the licensee to provide business radio services to itself and to third parties on a nationwide basis using a 12.5 KHz duplex channel. The fees payable to the licensee for use of their spectrum are set by the licence holder. Intending users should apply to the licence holder directly. A TPBR licence can be traded or transferred by the licensee to other entities, subject to prior agreement from ComReg.

ComReg has since closed the TPBR licence scheme to new licensees as at 31st December 2011. Further information in relation to Third Party Business Radio and a list of current licensees can be found on the ComReg website³.

Licence Exempt Devices

Unless licence exempted, all wireless telegraphy equipment requires a licence. Licence exempt radio equipment operates on a non-interference, non protected basis and shares spectrum with other radio devices. Licence exempt radio equipment is not permitted to cause interference to other devices and is not entitled to claim protection from any interference received.

PMR 446: Private Mobile Radio, 446 MHz is part of the UHF frequency range, which is licence-exempt for personal use in Ireland and other European Countries. PMR446 is primarily used by consumer-grade walkie-talkies, which are manufactured to operate in the PMR 446 band only.

SRD: Short Range Devices are low power radio transmitters which provide either uni-directional or bi-directional communication with low capability of causing interference to other radio equipment.

Please refer to ComReg Document 02/71R6⁴ (as revised) for further information concerning the interface requirements for PMR 446 equipment and SRDs.

³ http://www.comreg.ie/radio_spectrum/search.541.874.10021.0.rslicensing.html

⁴ http://www.comreg.ie/_fileupload/publications/ComReg0271R6.pdf

1.1 Radio Equipment

All radio equipment used in a Business Radio system is subject to be licensed, unless the radio satisfies licence exempt conditions. Equipment includes base stations, mobile stations and portable stations. For more information on equipment terms and definitions please refer to the ITU website⁵.

1. Business Radio: Use of one or more mobile terminals connected to a central point, or where groups of mobile stations need to communicate on a “one to all” basis.
2. Mobile Stations⁶: Radio station in the mobile service intended to be used while in motion or during halts at unspecified points. Capable of surface movement within the geographical limits of a country or continent. Provides a radio communication service between mobile and land stations, or between mobile stations.
3. Portable Station⁷: A mobile station that is portable but cannot comfortably be carried around by a person due to weight and/or size, or having relatively high power consumption.
4. Base Station⁸: A land station in the land mobile service. The common name for all the radio equipment located at one and the same place used for serving one or several cells.
5. PMR: Private Mobile Radio (PMR), are VHF or UHF two-way radio systems that are operated by a range of users such as Gardaí, ambulance, taxi and construction companies. PMR also includes data systems operating in the VHF and UHF spectrum. All users of PMR systems (excluding PMR 446) require a valid Business Radio Licence.

⁵ www.itu.int

⁶ <http://www.itu.int/ITU-R/asp/terminology-definition.asp?lang=en&rlink={1BED7C67-E335-490E-89C4-B5B482F0FC21}>

⁷ <http://www.itu.int/ITU-R/asp/terminology-definition.asp?lang=en&rlink={44CC820C-D195-4E93-8E40-6620D15A2757}>

⁸ <http://www.itu.int/ITU-R/asp/terminology-definition.asp?lang=en&rlink={D8FC4E72-78D3-43D2-930A-152B9509B989}>

2 Technical Conditions of Licence

The Wireless Telegraphy (Business Radio Licence) Regulations, 1949-1986 sets out the conditions under which licences are issued. All intending applicants are advised to familiarise themselves with these conditions. Copies of this legislation are available from the Government Publications Office.

The associated application form (ComReg 00/07R3) shows the information required for a standard two-way business radio system i.e. base station at a fixed location communicating with mobile stations (in cars or other vehicles) or hand portable stations.

2.1 Frequency Allocation

Frequency allocations for Business Radio Stations are made by the Commission for Communications Regulation.

Channels for Private Mobile Radio (PMR) Systems are allocated in parts of the following frequency bands:

Band	Frequency (MHz)
VHF Low	68 - 87.50
VHF High ⁹	163 - 174
UHF	450 - 470

Licences are primarily issued with a 12.5 KHz bandwidth. Applicants should note that licensees are required to share assigned radio frequencies with other licensees and that all operations must accord with good radio discipline and the statutory Business Radio Licence Conditions.

⁹ Maritime services occupy parts of the VHF HIGH band (156 MHz -163 MHz). Please refer to the ComReg document 08/90R2: National table of Frequency Allocations for further information. Please note that ComReg liaise with the MRAU and the IAA, bodies which manages frequency allocations in the maritime bands and aeronautical bands respectively.

2.2 Coverage Areas & Coordination

Coverage area is dependent on terrain and the general radio environment.

ComReg does not issue Business Radio Licence channels for national usage, provincial licences may be obtainable but on a case by case basis.

The below table can be used as a guide for typical ranges for reliable communication between a base and mobile stations:

Typical Ranges for Reliable Communication	
VHF Low	30 - 35 km
VHF High	25 - 30 km
UHF	15 - 20 km
On-Site Communication (Short Range Devices or Portables in Back to Back Operation)	1 - 2 km

Note: Operation at low signal levels at the limit of the receiver sensitivity is not recommended and is not included in estimates of useful ranges.

Where extended coverage is required, joining a Community Repeater system or operating a remote base station may provide a solution.

In some cases it may be necessary for the Commission to undertake co-ordination procedures with other bodies or administrations (i.e. UK or I.A.A). As this normally takes a minimum of four weeks, this may delay the issue of the licence.

2.3 Effective Radiated Power Levels

The power from the antenna, i.e. the Effective Radiated Power (ERP) of a station must not exceed the level authorised in the licence. ERP levels take into account the nature of the proposed service but levels greater than the limits set out in the following tables are not authorised:

PMR Local Area

Condition	ERP (watts)
Base Station ERP operating to a group of Mobile Stations	25
Base Station ERP operating to a group of Portable Stations	10
Mobile Station ERP	10
Portable Station ERP ¹⁰	5

On-Site Communications

Condition	ERP (watts)
Base Station ERP used for on-site communications ¹¹	2 - 5
Mobile or Portable Station ERP operating to a Base Station used for on-site Communications ¹²	1 - 2

¹⁰ Depending on Area of Coverage

¹¹ Depending on Area of Coverage

¹² Depending on Area of Coverage

2.4 Arrangements for Two-Way Communications

- Channels are assigned for dual or single frequency operation primarily with a 12.5 KHz bandwidth.
- Channels for dual frequency operation should not be used for single frequency operation.
- Channels for standard applications are not assigned for operation at high or communal sites.
- The use of talk-through, a repeater or other non-standard arrangements will only be authorised in exceptional circumstances, subject to spectrum availability.

Where an alternative arrangement is required e.g. talk-through or a remote base station, a covering note describing the configuration and explaining the requirement for this configuration should accompany the application. These systems are less spectrally efficient than normal radio systems so it may not be possible to accommodate them, particularly in urban areas.

2.5 Harmful Interference

Business Radio Licences are issued on a shared basis. Equipment should be well maintained and serviced regularly with relevant protective measures in place where possible (CTCSS, DCS).

Before contacting ComReg, all equipment and installation should be inspected by your equipment supplier. All equipment must be compliant with relevant ETSI standards and the R&TTE directive.

ComReg's Spectrum Compliance Team investigate interference issues external to the licensees own installation. Interference complaints can be made through the ComReg website¹³.

¹³ http://www.comreg.ie/licensing_and_services/interference.555.445.html

2.6 Tone Control

Tone Control is a mechanism by which apparatus for wireless telegraphy transmits a specific signal for control purposes in addition to the speech signal¹⁴. This allows for more than one user group to operate on the same channel (co-channel users) without causing undue interference on that frequency. As the existence of co-channel users allow for more efficient use of the radio spectrum, Tone Control is encouraged to be implemented where possible on all licensed radio equipment. Tone Control is mandatory for repeater usage, remote base station usage and where talk through is in operation.

There are two common types of Tone Control protection, CTCSS and DCS.

Continuous Tone-Coded Squelch System

CTCSS is the most common protection available and is a widespread technology inbuilt into many radios. CTCSS filters out other users by sending a continuous tone with the transmission signal. If another user is using a different CTCSS tone (or no CTCSS) the transmitted signal will not be heard by that user. The set of standard CTCSS tones range from 67 Hz - 254 Hz.

Digitally Coded Squelch

DCS sends a continuous digital signal in conjunction with the transmitted signal which is then decoded by the receiving radio. These digital signals or "code-words" are made up of a 23 bit frame rate transmitted at 134.4 bits/s which can be represented as three octal digits such as "071". DCS provides a greater range of codes than CTCSS with 52 standard codes and a further 52 using the inverse of these codes (for example the inverse of '1011' would be '0100'). The logical inverts of allocated codes are omitted from the code groups to prevent interference between adjacent licensees who operate equipment with different shift carriers, positive or negative. In certain cases, logical inverts may be utilised on a site-by-site basis to double the codes available, provided all equipment used on a particular site employs exclusively either positive or negative carrier shift.

¹⁴ http://www.comreg.ie/_fileupload/publications/SI93of1998.pdf

2.7 Equipment Standards

Radio and telecommunications terminal equipment is required to comply with the Directive 1999/5/EC ("R&TTE Directive"). Information on the R&TTE Directive can be found on the ComReg website¹⁵.

Licensees are also advised to familiarise themselves with ComReg document 06/47R¹⁶. This document sets out both the mandatory and information interface requirements for radio services in Ireland which include the applicable ETSI standards for PMR equipment. Only equipment compliant with R&TTE Directive and relevant ETSI Standards will be licensed.

2.8 Antenna Height

A licensee shall ensure that the erection of all aerials and masts associated with the licensed radio system conforms to all requirements prescribed by law or to a lawful direction of a competent authority. Particular attention is drawn to such requirements which relate to planning permission, installations in the proximity of airports, and precautions to be taken against possible damage to overhead cables and power lines.

For on-site communications antenna height should not exceed 5 metres above ground level.

For applications other than on-site communications, antenna heights should not exceed 30 metres above ground level. Where an antenna height greater than 30 metres is required the applicant should provide justification.

Please note that if the antenna is placed on a building or structure, the height above ground level should include the height of the structure above ground level.

¹⁵ http://www.comreg.ie/radio_spectrum/randtte.543.420.html

¹⁶ http://www.comreg.ie/publications/interface_requirements_for_radio_services_in_ireland.583.102528.p.html

3 Licence Information

The following information provides an outline to the conditions to which the licensee is bound, upon the issue of a Business Radio Licence.

3.1 The Licensee

A licence will be issued to a legal entity only, either a Registered Limited Company or an individual. If your company is not a Limited Company then you must nominate an individual as a licensee and state the Company Trading Name to which the licence is issued.

3.2 The Licence

A Business Radio Licence does not confer any right of ownership of the frequency spectrum. It allows the possession and use of Wireless Telegraphy equipment in accordance with the conditions of the Business Radio Licence.

3.3 Licence Duration

Business Radio Licences are valid for a 12 month period from the date of issue and must be renewed annually thereafter by the licensee. Licences not renewed i.e. expired, cannot be re-instated. To re-licence, a new application is required in all cases.

3.4 Licence Fee Payable

A fee is payable on application and on each renewal of a Business Radio Licence.

The fee consists of a fixed processing fee¹⁷ charge of €22 plus a fee of €22 for each radio in the system¹⁸.

The appropriate renewal fee must be paid in full prior to the expiry date of the licence each year.

¹⁷ Processing fee is payable for new licences and renewals. Amendments are not subject to this fee.

¹⁸ Radio equipment may consist of Base Stations, Mobile Stations, and Portable Stations.

3.5 Amendments to Licence

A licence amendment occurs when the details on the licence document are no longer correct and therefore need to be updated. For example, but not limited to, when:

- The address or details of the licensee or contact has changed¹⁹.
- The amount of radio equipment used has increased or decreased.
- The licensee wishes to change or add frequency channels.

Where an amendment increases the value of a licence the appropriate balance must accompany the amendment application. An amendment which does not increase the value of a licence, will incur no extra charge.

3.6 Licence Renewal

Wireless Telegraphy licences must be renewed each year through full payment of the annual fee. Failure to do so means that you are no longer authorised to use the radio equipment.

In the event of payment not being received, licences are deemed expired with effect from the "payment due" date, in which case the licensee is required to submit a new application in order to obtain a valid licence.

Part or stage payments or post dated cheques cannot be accepted.

Licence renewals can be made online via ComReg's e-licensing website. E-licensing²⁰ permits the licensee to access licence information and make payments online. Access to e-licensing requires your Account Number and PIN which are provided on your most recent invoice.

¹⁹ This may require the issue of a new licence. It is a requirement to notify ComReg in writing, the cancellation of the licence by the original licensee.

²⁰ <https://www.elicensing.comreg.ie>

3.7 Cancellation of a Licence

A Business Radio Licence may be cancelled at the written request of the licensee. However, there is no entitlement to any refund of licence fees in the events of cancellation.

3.8 Revocation and Suspension of a Licence

ComReg may suspend or revoke a licence where there is serious or repeated non-compliance by the licensee with the conditions of the Business Radio Licence. There shall be no entitlement to any refund of the licence fee in the event of any such action.

4 Applying for a Licence

All Applications for Business Radio Licences must be made on the Business Radio Application Form found on ComReg's website: <http://www.comreg.ie/>

The application form must be completed in full and in accordance with these Guidelines.

Please note that your equipment supplier should be able to assist you in completing the application form.

4.1 Submitting an Application Form

1. The licensee must accurately complete all sections of the application form with all of the requested information to be included. If the application form is not completed fully, then additional information will be sought from the applicant. This can significantly delay processing of the application.
2. The Declaration Form found in Section 4.B of the application form must be signed.
3. Applications will be deemed incomplete if payment does not accompany a complete application form. (A Purchase Order number cannot be accepted as payment). Incomplete applications will be returned to applicant.
4. Appropriate processing time for issuing of a licence must be taken into consideration. It is recommended that all applications be submitted a minimum of 2-3 weeks prior to the requirement date.
5. Under normal circumstances (e.g. when the application form has been correctly completed, when the correct fee has been forwarded and when there is no need for co-ordination) a licence should take no more than 10 working days to process.

Business Radio Application Forms and the appropriate fee may be submitted via E-mail (in .PDF format) to licensing@comreg.ie or by post²¹ to address below:

*Licensing Operations, the Commission for Communication Regulation, Abbey Court,
Irish Life Centre, Dublin 1*

²¹ Ensure the Declaration found in Section 4.B of the Application Form is signed when submitting applications by e-mail or post.