



Commission for
Communications Regulation

Guidelines

GSM for Railway Licence Guidelines

General Document

Reference: ComReg 13/115

Date: 03/12/2013

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

Additional Information

Document No:	13/115
Date:	03/12/2013

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1 Introduction

1. The Commission for Communications Regulation (ComReg) has introduced a new licensing scheme for GSM for Railway (GSM-R) licences. This document sets out ComReg's guidelines for applicants wishing to apply for a GSM-R licence.
2. A licence to possess and operate apparatus for wireless telegraphy is required under Section 3 of the Wireless Telegraphy Act 1926. GSM-R licences are governed by the Wireless Telegraphy (GSM for Railway Licence) Regulations, 2013 (S.I. 213 of 2013). A holder of a GSM-R licence may keep and operate the apparatus as specified in the licence, for the period of time and subject to the conditions set out therein. The granting of a GSM-R licence does not free a licensee from having to comply with any other legal obligations.
3. These guidelines provide information to the applicant on ComReg's GSM-R licensing scheme. Among other things, these guidelines provide information on:
 - the frequency band available as well as the associated channel plan;
 - the technical licensing requirements;
 - mitigation requirements;
 - the application process; and
 - the licence itself.
4. ComReg encourages potential applicants to read these guidelines carefully if they are considering the submission of a GSM-R licence application to ComReg. Queries regarding these guidelines or on the licensing process can be directed to ComReg's Licensing Operations Team: via telephone to 01 8049600, or via e-mail to licensing@comreg.ie.
5. ComReg may revise these guidelines from time to time and will publish any such revisions on its website.

2 GSM for Railway Licensing Requirements

6. GSM-R is a digital communications system, based on the use of GSM technology, which has been developed to replace the existing analogue VHF/UHF rail network communications system. GSM-R, in contrast to public mobile GSM, constitutes a non-public communications network for use by European railway operators.

2.1 GSM-R Spectrum

7. The GSM-R spectrum band in Ireland and across EU member states is defined as 876-880 MHz (mobile station transmit) spectrum paired with 921-925 MHz (base station transmit) spectrum (i.e. 2 x 3.6 MHz of utilisable spectrum after taking into account relevant guard band requirements). The GSM-R band and adjacent spectrum bands are shown in Figure 1.

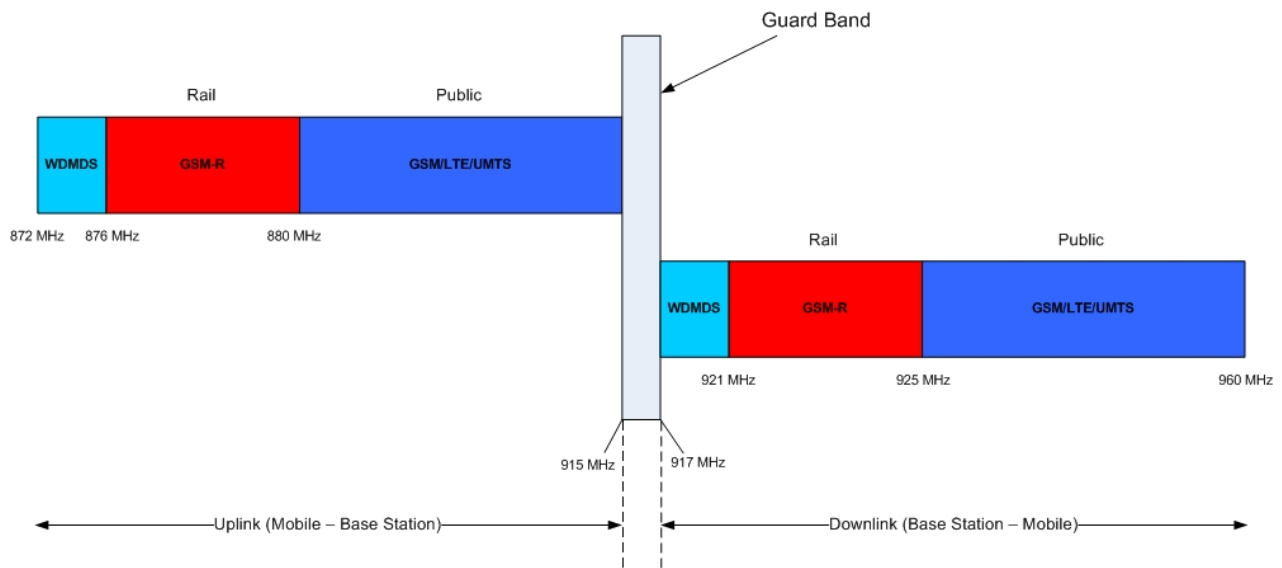


Figure 1: GSM-R Spectrum Band

8. ComReg will be making a total of 2 x 3.6 MHz of spectrum available for GSM-R use in 18 x 200 kHz channels as shown in Table 1 below.

GSM – R Spectrum Allocation¹		
Channel Number	Centre frequency Mobile TX (MHz)	Centre Frequency Base Tx (MHz)
1	876.2000	921.2000
2	876.4000	921.4000
3	876.6000	921.6000
4	876.8000	921.8000
5	877.0000	922.0000
6	877.2000	922.2000
7	877.4000	922.4000
8	877.6000	922.6000
9	877.8000	922.8000
10	878.0000	923.0000
11	878.2000	923.2000
12	878.4000	923.4000
13	878.6000	923.6000
14	878.8000	923.8000
15	879.0000	924.0000
16	879.2000	924.2000
17	879.4000	924.4000
18	879.6000	924.6000
Guard Bands 879.7 – 880 MHz and 924.6 – 925 MHz		

Table 1: GSM-R Channel Plan

2.2 The Licence

9. A GSM-R licence will be a national licence with a maximum duration of 10 years and will then expire.

¹ In the band 876-880 MHz (mobile station transmit) paired with 921-925 MHz (base station transmit) with a duplex separation of 45 MHz for duplex operation

2.3 GSM-R Fees

10. The annual licence fees payable on the grant and each anniversary of the date of first granting the licence shall be as follows:

- €50,400 per 2 × 1 MHz of spectrum (or per fraction of a year on a daily pro rata daily basis).

2.4 Mitigation Requirements

11. ComReg recognises that, despite the 300 KHz guard band between GSM-R and Public Mobile networks, interference may still be experienced by GSM-R operators.

12. In the event that harmful interference occurs between services despite the implementation of the recommended carrier spacings, further efforts to resolve the interference between affected parties should then be undertaken by the relevant operators, in accordance with the co-ordination methods as detailed in ECC Reports 96², 146³, and 162⁴ as appropriate. This may entail, amongst other mitigation techniques, the need to employ additional filtering on GSM-R equipment. Although the potential costs of some measures are not insignificant, these costs should be borne by the GSM-R licensee themselves.

2.5 Technical Conditions

13. The licensee will comply with the technical conditions as outlined in ETSI standards EN 301 50210 and EN 301 51511 to meet the obligations under the relevant EU Directive⁵ and in order to protect services in adjacent spectrum bands.

14. The licensee shall ensure that all licensed apparatus complies with the required harmonised standard under the R&TTE Directive (Directive 1999/5/EC).

² ECC Report 96 - Compatibility between UMTS 900/1800 and systems operating in adjacent bands, March 2007.

³ ECC Report 146 - Compatibility between GSM MCBTS and other services (TRR, RSBN/PRMG, HC-SDMA, GSM-R, DME, MIDS, DECT) operating in the 900 and 1800 MHz frequency bands, June 2010.

⁴ ECC Report 162 - Practical mechanism to improve the compatibility between GSM-R and public mobile networks and guidance on practical co-ordination, May 2011.

⁵ DIRECTIVE 2008/57/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 June 2008 on the interoperability of the rail system within the Community

3 Applying for a licence

15. A licence to possess and operate apparatus for wireless telegraphy is required under Section 3 of the Wireless Telegraphy Act 1926. Possessing or operating radio equipment without such a licence is an offence which renders the offender liable to prosecution and, on conviction, fines and confiscation of equipment.
16. ComReg 13/115a contains an application form which sets out the information that must be provided to ComReg as part of licence applications. In certain cases, ComReg may seek further information or clarification from an applicant.
17. To submit a valid application it is necessary to:
 - complete all sections of the form; and
 - submit the full licence fee with your application.
18. If there is insufficient space available on the application form, please attach any additional information on a separate sheet(s).
19. Applications for a GSM-R licence must be submitted to:

Licensing Operations Section

The Commission for Communications Regulation,

Abbey Court,

Irish Life Centre,

Lower Abbey Street,

Dublin 1.

Tel: (01) 8049600

Email: licensing@comreg.ie