



Commission for
Communications Regulation

FWALA – 3.5GHz Domestic Frequency Coordination

Licensed Operator Code of Practice

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Contents

1	Introduction.....	3
1.1	FIXED WIRELESS ACCESS LOCAL AREA.....	3
1.2	THE FWALA FORUM	3
1.3	PRINCIPLES OF THE CODE OF PRACTICE	3
1.4	AMENDMENTS TO THE CODE OF PRACTICE.....	4
2	Spectrum Bandplan in the 3.5GHz band	5
3	Definitions	6
4	Code of Practice – 3.5 GHz band.....	7
	Annex 1: 3.5 GHz Block Edge Mask.....	8
	SCENARIO 1: MUTUAL AGREEMENT	8
	SCENARIO 2: NO AGREEMENT	9

1 Introduction

1.1 Fixed Wireless Access Local Area

Fixed Wireless Access Local Area (FWALA) is a licensing scheme for the provision of wireless broadband access to end-users. While this code of practice focuses on the 3.5 GHz band, the FWALA scheme is available to systems operating in the 3.5GHz, 10.5GHz and 26GHz bands. Unless ComReg has indicated otherwise, licences are issued on a first-come, first served basis and details of the licensing regimes can be found in ComReg documents 06/17R2 and 06/17a.

Licensees are free to deploy equipment under the terms of their FWALA licence within a 'Service Area' specified in the licence and are also responsible for ensuring that any exported interference as a result of these deployments does not exceed a specific level calculated at a fixed distance from the centre of the local area.

As a general policy ComReg will issue licences for wireless systems on a technology neutral basis and this has been the approach under the FWALA scheme.

1.2 The FWALA Forum

A FWALA Forum has been established to address issues of common interest to FWALA licensees and is chaired by ComReg. All FWALA licensees are members of this forum. The FWALA Forum held its first meeting on 24 November 2004.

1.3 Principles of the Code of Practice

While every effort has been made by ComReg to minimise the possibility of interference between licensed operators in licensing FWALA systems, it is possible that situations will arise from time to time where it is necessary to coordinate the usage of frequencies between different FWALA networks in order to facilitate the operation of these networks. The FWALA Forum has agreed that the most appropriate way to deal with such instances is by means of a Code of Practice on Domestic Frequency Coordination.

This Code of Practice is based on the following principles:

- It is not possible to provide an environment which is completely free of interference;
- Operators have a number of mitigation options available to deal with interference problems;
- Operators require a level of certainty in frequency planning for their network;
- It is not possible to anticipate every possible interference scenario – therefore a pragmatic approach is required;
- Operators with neighbouring networks may arrive at sharing solutions independent of ComReg;

- That a Code of Practice be considered best practice in the absence of any other agreements;
- ComReg is responsible for the international coordination of radio systems between the Republic of Ireland and other countries;
- Management of the deployment of network infrastructure, including customer premises equipment, in the service area and within the licensed frequency channel is generally a matter for the operator;
- The local area approach and the requirement to comply with the maximum permissible field strength contour will result in differing EIRP values for base-stations and customer premises equipment deployed within the licensed service area;
- The approach in Ireland should as far as possible take into consideration the approach recommended by CEPT¹;
- That this Code of Practice is a working document and may be subject to review by the FWALA Forum from time to time;
- That the Block Edge masks detailed in Annex 1 may be changed to take into consideration technological developments that may arise.

Note that any provision or agreement within a Code of Practice does not absolve a licensee from observing the terms and conditions of any FWALA licence held or from complying with any other statutory obligations.

1.4 Amendments to the Code of Practice

This Code of Practice may be amended as necessary with the agreement of the FWALA Forum and ComReg.

¹ European Conference of Postal and Telecommunications Administrations (www.cept.dk or www.ero.dk). Reference ERC/REC 14-03, ECC Report 033 and ECC/REC(04)05.

2 Spectrum Bandplan in the 3.5GHz band

The spectrum available for licensing in the 3.5GHz band is shown in Figure 1 – specifically frequency channels A, B, C and D. It is noted that guard bands between operators licensed on adjacent frequency channels must be accommodated within the licensed channel of each operator.

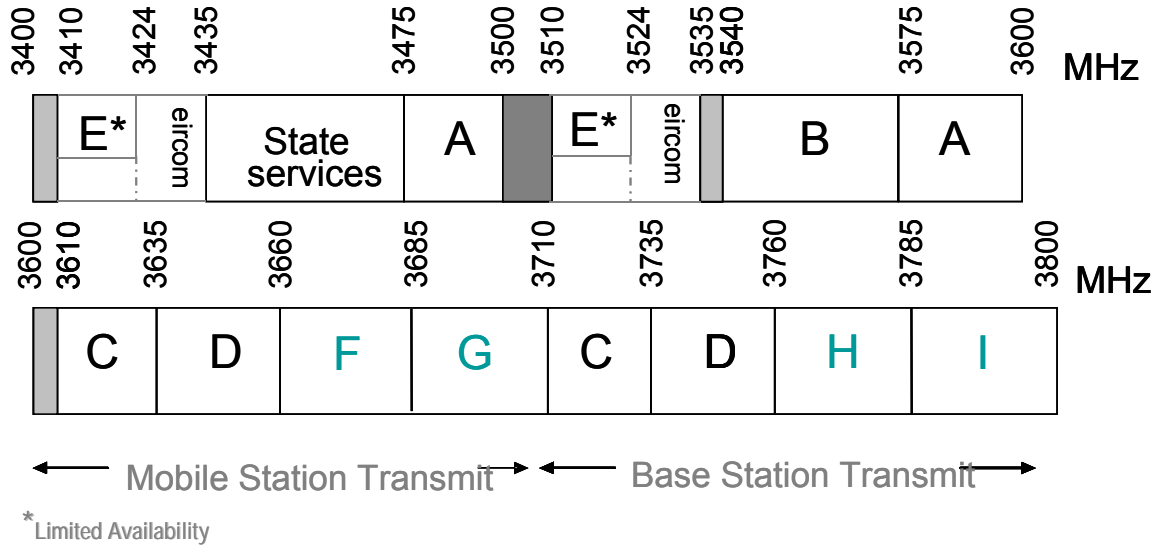


Figure 1 – 3.5GHz Spectrum available under FWALA

As noted previously, FWALA licences are issued on a technology neutral basis and therefore it is certain that systems of differing technical characteristics and deployment will be licensed in adjacent frequency channels.

3 Definitions

FWALA – Fixed Wireless Access Local Area (S.I. 79 of 2003 as amended)

EIRP – Equivalent Isotropically Radiated Power: The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna (absolute or isotropic gain)²

² Ref: Article 1.161 of the Radio Regulations, Edition of 2004

4 Code of Practice – 3.5 GHz band

It is generally recognised, and the FWALA Forum has agreed, that the most spectrally efficient and liberal method to minimise the possibility of interference between operators as a result of emissions from one licensee into a frequency channel licensed to another licensee is to use a ‘Block Edge Mask’ common to all licensees. The Block Edge Mask given in Annex 1 defines the transmission mask in terms of power spectral density (dBW/MHz) at the upper and lower edge of each licensed frequency channel (i.e. A, B, C or D above).

Licensees are also free to reach mutual agreements with other licensees on frequency coordination but the Block Edge Mask in Annex 1 will be considered best practice for the resolution of disputes relating to interference between licensees.

To this end, Licensees agree:

- (1) to notify ComReg of any coordination agreement with other licensees;
- (2) to resolve any interference dispute between them. Where resolution can not be agreed ComReg shall mediate on the basis of the dispute resolution procedure agreed by the FWALA Forum;
- (3) to a maximum EIRP level from any transmitter of 14dBW/MHz. Please note that this power level is set as an absolute maximum and that licensees must ensure compliance with the 33dB μ V/m signal level limit in accordance with their licence when setting the transmitter power of any transmitter licensed under the FWALA scheme;
- (4) to comply with the block edge mask power limits defined in Annex 1;
- (5) that site specific deployments may give rise to technical considerations that cannot be anticipated (e.g. intermodulation products and adjacent spectrum block emissions) which may necessitate specific site engineering solutions and that the licensees will take appropriate action to minimise these.

Annex 1: 3.5 GHz Block Edge Mask

Scenario 1: Mutual Agreement

The Block Edge Mask given in Figure 1 is taken from ECC Recommendation (04)05 and may be used to limit interference between adjacent channel, co-located FWALA service areas where operators have reached mutual agreement. Operators of the adjacent blocks may deviate from the Block Edge Mask requirement, subject to their mutual agreement (e.g. involving co-ordinated deployment, mitigation techniques etc).

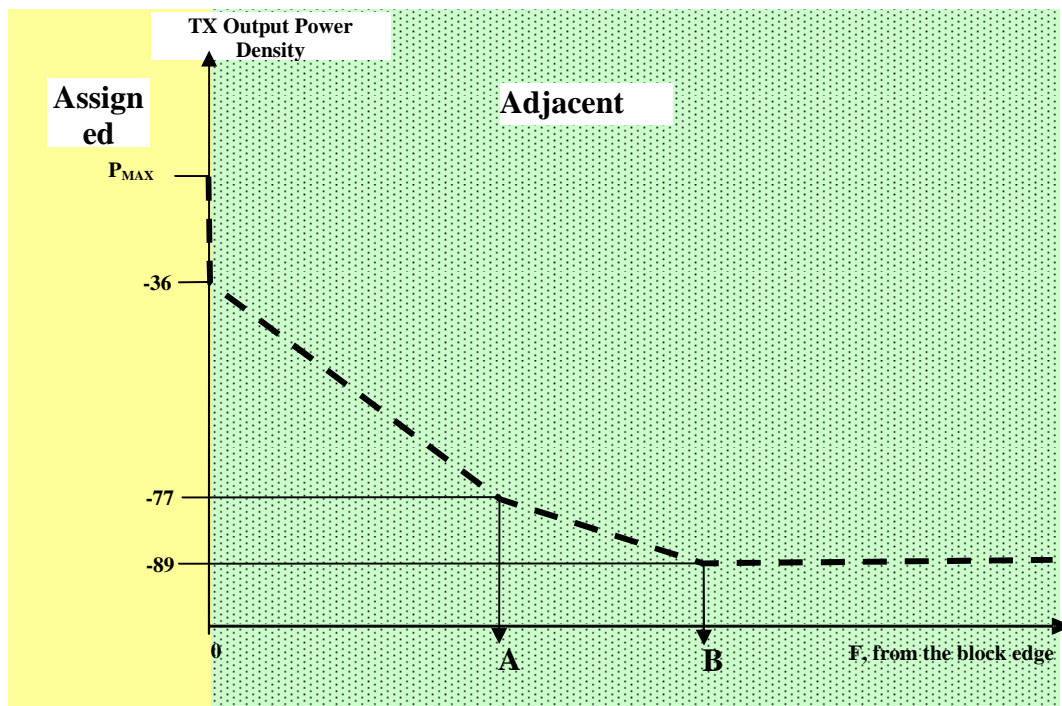


Figure 1: Block Edge Mask where there is mutual agreement between operators.³

$P_{max} = 14\text{dBW/MHz}$

Assigned Block Size (MHz)	A = 20% of Assigned Block (MHz)	B = 35% of assigned Block (MHz)
25	5	8.75
35	7	12.25

Note: When adjacent blocks are of unequal size, the A and B of the smaller of adjacent block is applied

³ Ref: ECC/REC/(04)05

Scenario 2: No Agreement

The block edge mask shown in Figure 2 is to be used where there is no agreement in place between adjacent channel co-located operators.

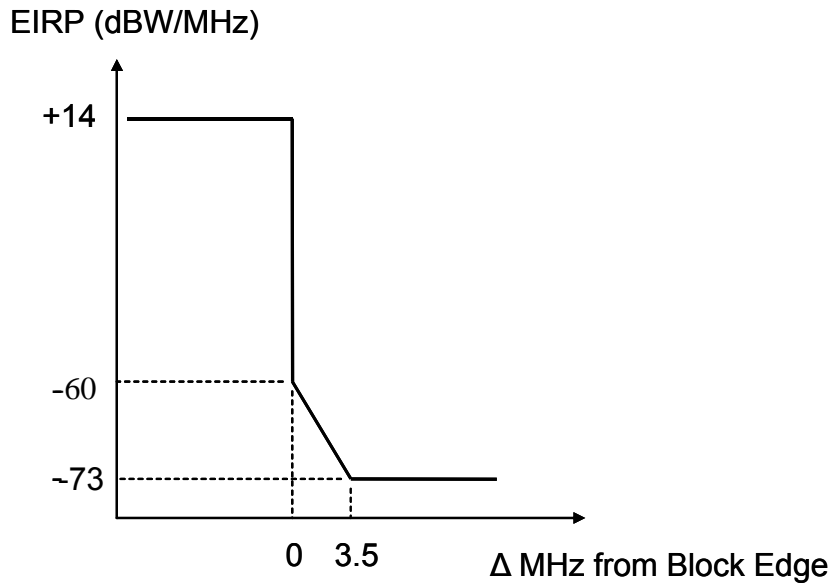


Figure 2: Block Edge mask where there is no agreement between adjacent channel, co-located operators.⁴

⁴ Ref: ECC Report 033