
Decision to make the Wireless Telegraphy (Exemption and Amendment) (Amendment) (No.2) Regulations 2018

Our decision to implement technical and regulatory changes to the 57 – 71 GHz band

STATEMENT:

Publication Date: 08 November 2018

About this document

This document sets out Ofcom's decision to make new regulations by statutory instrument (the "Decision"). The new regulations change and extend the existing technical conditions and exemptions from the requirement to obtain a Wireless Telegraphy Act licence for short range wideband data transmission systems and fixed wireless systems.

The regulations implement Ofcom's decisions in its statement on the review of spectrum used by fixed wireless services ("FWS Statement") as follows:

- a) For short range wideband data transmission systems, the regulations:
 - (i) extend the current licence exemption and technical conditions (from 57 - 66 GHz) up to 71 GHz; and
 - (ii) introduce new technical conditions to allow licence exempt use of lower power equipment operation in a fixed outdoor installation in the extended 57 - 71 GHz band.
- b) For fixed wireless systems, the regulations:
 - (i) extend the current licence exemption (from 57.1 GHz - 63.9 GHz) up to 70.875 GHz, and by doing so change the current authorisation approach for fixed wireless systems operating in the 64 - 66 GHz band from light licence to licence exempt; and
 - (ii) extend the current technical conditions (from 57.1 - 63.9 GHz) up to 70.875 GHz.

The regulations will come into force on 27 November 2018

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1. Executive summary

Introduction

- 1.1 This Decision confirms that, following consultation, we have decided to make regulations relaxing the licensing requirements for the operation of short range wideband data transmission systems and fixed wireless systems operating between 57 to 71 GHz. We will do this by changing and extending the existing technical conditions and licence exemptions. To implement our decision, on 6 November 2018 we made The Wireless Telegraphy (Exemption and Amendment) (Amendment) (No.2) Regulations 2018 (the “Regulations”) which come into force on 27 November 2018. A copy of the final draft of the Regulations is provided in Annex A2 to this Decision.
- 1.2 By way of background, on 5 July 2018, we published our statement on the review of spectrum used by fixed wireless services (“FWS Statement”)¹ setting out our decisions (and reasoning) to change and extend the existing technical conditions and licence exemptions for equipment operating between 57 - 71 GHz. Our decisions were designed to enable new fixed and mobile uses in the 57 - 71 GHz band without the need for a licence.
- 1.3 Following those decisions we made in the FWS Statement on 5 July 2018, we also published a “Notice of proposal to make the Wireless Telegraphy (Exemption and Amendment) (Amendment)(No. 2) Regulations 2018” (the “Notice”)² in accordance with Section 122 of the of the Wireless Telegraphy Act 2006 (the “2006 Act”). The Notice set out how we intended, by way of the (proposed draft) Regulations (“Proposed Regulations”), to change and extend existing technical conditions and licence exemptions as follows:
- a) For short range wideband data transmission systems:
 - (i) extend the current licence exemption and technical conditions (from 57 - 66 GHz) up to 71 GHz; and
 - (ii) introduce new technical conditions to allow licence exempt use of lower power equipment operating in a fixed outdoor installation in the extended 57 - 71 GHz band.
 - b) For fixed wireless systems:
 - (i) extend the current licence exemption (from 57.1 GHz - 63.9 GHz) up to 70.875 GHz and by doing so change the current authorisation

¹ https://www.ofcom.org.uk/__data/assets/pdf_file/0017/115631/statement-fixed-wireless-spectrum-strategy.pdf (For 57 – 71 GHz decisions see sections 4.13 – 4.20)

² https://www.ofcom.org.uk/__data/assets/pdf_file/0016/115630/Implementing-decisions-5771-GHz-band.pdf

approach for fixed wireless systems operating in the 64 - 66 GHz band from light licence to licence exempt; and

- (ii) extend the technical conditions (from 57.1 - 63.9 GHz) up to 70.875 GHz.

Comments and Representations

- 1.4 In accordance with Section 122 of the 2006 Act, the Notice gave statutory notice of our proposal to make regulations and invited comments on whether the Proposed Regulations correctly implemented our policy decisions in the FWS Statement. The Notice explained that we were not seeking comments on the policy decisions themselves.
- 1.5 We received four non-confidential responses and one confidential response to the Notice. These are discussed further in Section 3 of this document.

Decision

- 1.6 Having carefully considered the comments we received, we have decided to make the Regulations as drafted in the Notice. We have however made some minor changes in the interface requirements referenced in the Proposed Regulations to provide further clarity and address some of the comments received.
- 1.7 The Regulations were made on 6 November 2018 and will come into force by 27 November 2018.

2. Background

General Legislative Framework

- 2.1 Ofcom is responsible for authorising use of the radio spectrum and achieves this by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 (the '2006 Act') and by making regulations exempting users of particular equipment from the requirement to hold such a licence.
- 2.2 Under section 8(1) of the 2006 Act, it is unlawful to establish, install or use wireless telegraphy apparatus except under and in accordance with a licence granted under the 2006 Act.
- 2.3 Under section 8(3) of the 2006 Act, Ofcom may make regulations exempting from the licensing requirements under section 8(1), the establishment, installation or use of wireless telegraphy stations or wireless telegraphy apparatus of such classes or description as may be specified in the regulations, either absolutely or subject to such terms, provisions and limitations as may be specified.
- 2.4 However, under section 8(4) of the 2006 Act, we must make regulations to exempt equipment if its installation or use is not likely to (all must apply):
- involve undue interference with wireless telegraphy;
 - have an adverse effect on technical quality of service;
 - lead to inefficient use of the part of the electromagnetic spectrum available for wireless telegraphy;
 - endanger safety of life;
 - prejudice the promotion of social, regional or territorial cohesion; or
 - prejudice the promotion of cultural and linguistic diversity and media pluralism.
- 2.5 Under section 8(3B) of the 2006 Act, any terms, provisions and limitations specified in the regulations must be:
- objectively justifiable in relation to the wireless telegraphy stations or wireless telegraphy apparatus to which they relate;
 - not such as to discriminate unduly against particular persons or against a particular description of persons;
 - proportionate to what they are intended to achieve; and
 - transparent in relation to what they are intended to achieve.
- 2.6 We make exemption regulations by means of a statutory instrument. Before making any such regulations, we are required by section 122(4) of the 2006 Act to give notice of our proposal to do so. Under section 122(5), the notice must state that we propose to make the regulations in question, set out their general effects, specify an address from which a

copy of the proposed regulations or order may be obtained, and specify a time period of at least one month during which any representations with respect to the proposal must be made to us.

The Notice

- 2.7 On 5 July 2018, we published our FWS Statement setting out our decisions (and reasoning) to change the authorisation approach for fixed wireless systems in the 64 - 66 GHz band to licence exempt and to implement common technical conditions across the 57 - 71 GHz band for fixed and mobile use on a licence exempt basis.
- 2.8 To give effect to these decisions, we published alongside the FWS Statement, the Notice of proposal to make the Wireless Telegraphy (Exemption and Amendment) (Amendment)(No. 2) Regulations 2018. We invited comments on whether the Proposed Regulations correctly implemented our decisions in the FWS Statement but were not seeking comments on the policy decisions themselves.
- 2.9 The Regulations make reference to “IR 2030 – UK Interface Requirements 2030 Licence Exempt Short Range Devices” (“IR 2030”) and “IR 2078 – UK Interface Requirements 2078 UK Interface Requirement 2078 Fixed Wireless Systems in the frequency band 57.1 to 63.9 GHz” (“IR 2078”)³. IR 2030 and IR 2078 are separate documents that currently set out the applicable technical parameters with which equipment must comply when operating in the 57 - 66 GHz band. To implement the decisions we made in the FWS Statement, we (i) updated IR 2030 to (a) extend the frequency range for indoor use (from 57 - 66 GHz) up to 71 GHz; and (b) cover the frequency range to 57 - 71 GHz under new technical conditions for outdoor use and (ii) updated IR 2078 to cover the frequency range 57.1 - 70.875 GHz. We included revised drafts of IR 2030 and IR 2078 in the Notice and notified the revised versions to the European Commission on 05 July 2018. The standstill period ended on 8 October 2018. The new versions of IR2030 and IR2078 will come into effect on 27 November 2018.
- 2.10 In Section 3 of this Decision, we summarise the responses we received to the Notice, our response and Ofcom’s decision in relation to the points raised. In Section 4, we set out the scope of the Regulations which have now been made.

³ Information on all current Interface Requirements can be found at <https://www.ofcom.org.uk/spectrum/information>.

3. Responses to the Notice and Ofcom's decision

Introduction

- 3.1 This section provides a summary of the responses we have received to the Notice. We received four non-confidential responses, which are listed in Annex A1 and one confidential response.
- 3.2 All respondents were in favour of making the Regulations to change to the authorisation regime in the 57 - 71 GHz band. However, some respondents sought clarification on the technical aspects of the draft interface requirements referenced in the Proposed Regulations. We address these comments in the remainder of this section.
- 3.3 In addition, some comments were made which concerned matters relating to the substance of Ofcom's policy decisions (namely the technical parameters of the licence exemption) rather than whether the Proposed Regulations give effect to that decision. These policy matters were the subject of the consultation that led to our FWS Statement in July 2018 after we had carefully considered representations made during that consultation process. This Decision therefore focusses on responses concerned with whether the Proposed Regulations in our Notice correctly implement our decisions in the FWS Statement. This Decision also briefly discusses the comments we received on the technical parameters of the licence exemption that we decided on in the FWS Statement, none of which change our position on any of the decisions we made in our FWS Statement.

Views on the draft interface requirements

- 3.4 Some responses⁴ highlighted that in the revised draft IR 2078, the references to ETSI Standard EN 302 217⁵ were not clear, given that it does not cover the extended frequency range of 66 - 71 GHz, and asked Ofcom to clarify the scope of ETSI Standard EN 302 217. Similarly, one respondent⁶ sought clarification on the scope of ECC Recommendation (09)01⁷. Some of the responses also noted that without a standard to refer to in either IR 2030 or IR 2078 for this extended frequency range, there would be no information on the essential requirements of the Radio Equipment Directive (the "Directive"), such as a spectrum emission mask.

⁴ BAE Systems; Blu Wireless; Pike,S

⁵ ETSI EN 302 217 is a European harmonised technical standard relating to fixed wireless systems and ETSI (the European Telecommunications Standards Institute) is an officially recognised body by the European Union as a European Standards Organisation (ESO).

⁶ Pike, S

⁷ ECC Recommendation (09)01 is a European Electronic Communications Committee (ECC) recommendation that provides information with respect to the use of the 57 – 64 GHz frequency band for point to point fixed wireless systems.

- 3.5 In addition, one respondent⁸ made an additional proposal to further modify IR 2078 to include some specific text, the effect of which would be to interpret EN 302 217 as applying to the 66 - 70.875 GHz frequency range.

Our Response

- 3.6 As a general point, the Regulations are concerned with authorising use of spectrum whereas ETSI Standard EN 302 217 and the Directive concern the type and specification of equipment manufacturers can deploy and ECC Recommendation (09)01 provides information regarding 57 – 64 GHz band use. As a result, these comments are not directly relevant to Ofcom enabling the use of 66 - 71 GHz on a licence exempt basis.
- 3.7 Regarding the reference to EN 302 217 in IR 2078 relating to fixed wireless systems, we agree that the frequency range 66 - 70.875 GHz is not currently included in EN 302 217. As the Regulations will extend the licence exempt frequencies up to 70.875 GHz, we have decided to add a footnote in IR 2078 to clarify that EN 302 217 does not cover the 66 - 70.875 GHz frequency range.
- 3.8 In relation to the comments on the absence of an ETSI standard for the 66 - 71 GHz band, we agree that this new licence exempt band does not currently have an EU harmonised ETSI standard associated with it for wideband data transmission or fixed wireless systems. However, compliance with standards is voluntary and is only one method of achieving compliance with the essential requirements of the Directive⁹. In the absence of a suitable harmonised standard, manufacturers can still demonstrate compliance with the essential requirements of the Directive by submitting a technical file (as defined in the Directive) to a notified body who may issue a type examination certificate. Manufacturers are also permitted to develop a standard or revise the existing standard(s) in ETSI to cover the 66 - 71 GHz band. In this regard, Ofcom notes that work is already underway in ETSI in the form of a systems reference document for the 57 - 71 GHz band. We do not therefore consider that it is necessary to make further modifications to IR 2078 to include specific text on the interpretation of EN 302 217 for the 66 - 70.875 GHz frequency range.
- 3.9 In relation to the comment on the scope of ECC Recommendation (09)01, IR 2078 indicates that the scope of this recommendation is on the use of the 57 - 64 GHz frequency band for point-to-point fixed wireless systems. This existing reference is in the *informative* part of IR 2078 and we consider that this provides the necessary clarity on application in general and of the frequency ranges covered.

⁸ Pike, S

⁹ Further information on the Radio Equipment Directive and UK Radio Equipment Regulations is available at: <https://www.ofcom.org.uk/spectrum/interference-enforcement/manufacturers-importers-suppliers>

Views on regulations related to the antenna

3.10 One respondent¹⁰ indicated that they believed it was not clear if the limits applicable to antennas, gain and power in both IR 2030 and IR 2078 covered the use of gimballed or actively steerable array antennas that have single or multiple beams, which are now becoming common features of the technology being developed in the 60 GHz band.

Our Response

3.11 Regarding the comment on the operator's ability to use steerable antennas, our FWS Statement identified our primary objective to facilitate new use cases and ensure that users of equipment installed outdoors can operate with a low probability of interference under a licence exempt approach. Our FWS Statement included a discussion on the use of new phased array active antennas (which have steerable beams), which can be used provided the operator complies with the technical conditions of the licence exemption. The Regulations have therefore taken these new use cases / applications into account and we consider there is no need for additional explanatory text in the Regulations.

Views on regulations related to other technical parameters

Operation at EIRP levels above 40 dBm and higher transmitter power limit

3.12 For the use of systems at EIRP levels above +40 dBm, several responses¹¹ commented on the current technical policy in IR 2078 and expressed a view that higher power operation without a +10dBm transmit power limitation would be beneficial to allow further use cases, such as higher power track to train connectivity. One respondent suggested that the +10 dBm transmit power limit should be removed altogether for such applications.

Measurement of conducted power for compliance requirements

3.13 Some respondents¹² also commented that for compliance purposes, the measurement of the total conducted power delivered to the antenna port/ports, would not be possible due to the nature of the new integrated equipment designs i.e. with the transmitter and receiver electronics being directly integrated with the antenna array and no single reference point at which a measurement could be made.

¹⁰ BAE Systems

¹¹ Blu Wireless; Pike, S; Qualcomm; and one confidential respondent.

¹² Pike, S and Blu Wireless

The geographical restrictions of IR2078

- 3.14 One respondent¹³ highlighted that they assumed that the geographical restrictions currently included in IR 2078 do not apply to the 66 - 71GHz band given the statement by Ofcom of the lack of occupancy of this band.

Our Response

- 3.15 As indicated above, the technical conditions for systems operating above +40 dBm were outside the scope of our consultation on the Notice. As highlighted in the FWS Statement, we have decided to maintain the existing technical conditions of IR 2078 as an interim measure and plan to review these again upon the completion of the technical harmonisation work currently underway in CEPT on the 60 GHz band.
- 3.16 We note the comments made regarding the ability to demonstrate compliance with the conducted power limit which some respondents indicated would not be possible to measure for phased array antennas as there would be no single reference point at which this conducted power could be measured. It should however be noted that the conducted power limits are regulatory limits that are part of the overall technical policy for interference management purposes. Manufacturers, standards bodies and notified bodies are responsible for measuring, assessing and complying with these limits.
- 3.17 Regarding the three small exclusion zones currently contained in IR 2078, these geographical restrictions only apply to the band 59 - 63.9 GHz, and these zones do not therefore apply to the 66 - 71GHz band.

Our Decision

- 3.18 Having carefully considered the responses to the Notice, we have decided to make the Regulations as proposed in the Notice but with editorial changes to the interface requirements referred to in the Proposed Regulations to provide clarity on the referenced ETSI standards for the 57 - 66 GHz band.

Next steps in relation to existing licences

- 3.19 When the Regulations come into effect, and as indicated in the FWS Statement, we will consult the existing licensees on making the appropriate changes to their 65/70/80 GHz self-coordinated licences to reflect the fact there will no longer be a requirement to hold a self-coordinated licence for equipment operating in the 64 - 66 GHz band. We also intend to close the 64 - 66 GHz band to new self-coordinated link registrations and to no longer retain the 65 GHz section of the wireless telegraphy register.

¹³ Pike, S

4. General effect of the Regulations

- 4.1 We have summarised in Section 2 of this document the legal framework that is relevant to the Regulations, including our role in exempting from the requirement to obtain a Wireless Telegraphy Act licence, the deployment of wireless telegraphy apparatus by making regulations under section 8(3) of the 2006 Act.
- 4.2 In this section, we set out the general effects of the Regulations as required by section 122(5) of the 2006 Act.

Extent of Application

- 4.3 These regulations apply in the United Kingdom, the Channel Islands and the Isle of Man.

The Regulations

- 4.4 The overall general effect of the Regulations is to implement Ofcom's decisions in the FWS Statement to enable new uses of short range wideband data transmission systems and fixed wireless systems in the 57 - 71 GHz range. They enable the establishment, installation and operation of these systems without the need for a licence under section 8 of the 2006 Act. They contain terms, provisions and limitations to which that licence exemption is subject. Systems that do not meet those terms, provisions and limitations do not fall within the exemption and their establishment, installation and use without a licence will continue to be a criminal offence.
- 4.5 Regulation 1 sets out the name of the Regulations and will make clear the date on which they are due to come into force.
- 4.6 Regulation 2(1) sets out that the Regulations will take effect by amending the Wireless Telegraphy (Exemption and Amendment) Regulations 2010 (the "2010 Regulations").
- 4.7 Regulation 2(2) amends Regulation 5 of the 2010 Regulations by substituting the publication date of the relevant interface requirements ("IR 2030 – UK Interface Requirements 2030 Licence Exempt Short Range Devices") for a date in 2018. This implements our decision in relation to short range wideband data transmission systems
- 4.8 Regulation 2(3) amends Regulation 6 of the 2010 Regulations by substituting the publication date of the relevant interface requirements ("IR 2078 – UK Interface Requirements 2078 Licence Exempt Short Range Devices") for a date in 2018. This implements our decision regarding fixed wireless services.

A1. List of non-confidential respondents

BAE SYSTEMS Applied Intelligence Laboratories

Blu Wireless Technology Limited

Pike, S

Qualcomm UK Ltd

A2. Final draft of the Regulations

STATUTORY INSTRUMENTS

2018 No.

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Exemption and Amendment) (Amendment) (No. 2) Regulations 2018

Made

6th November 2018

Coming into force

27th November 2018

The Office of Communications (“OFCOM”) make the following Regulations in exercise of the powers conferred by sections 8(3) and 122 of the Wireless Telegraphy Act 2006(a) (the “Act”).

Before making these Regulations, OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act, and have considered the representations made to them before the time specified in the notice in accordance with section 122(4)(c) of the Act.

Citation and commencement

1. These Regulations may be cited as the Wireless Telegraphy (Exemption and Amendment) (Amendment) (No. 2) Regulations 2018 and shall come into force on 27th November 2018.

Amendment of the Wireless Telegraphy (Exemption and Amendment) Regulations 2010

2.—(1) The Wireless Telegraphy (Exemption and Amendment) Regulations 2010(b) shall be amended in accordance with the following provisions of these Regulations.

(2) In regulation 5 (short range devices), for ““IR 2030—UK Interface Requirements 2030 Licence Exempt Short Range Devices”, published by OFCOM on 27th February 2018”, substitute ““IR 2030—UK Interface Requirements 2030 Licence Exempt Short Range Devices”, published by OFCOM in November 2018”.

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- (a) 2006 c.36; sections 8(3) and 122 were extended to the Bailiwick of Guernsey by article 2 of the Wireless Telegraphy (Guernsey) Order 2006 (S.I. 2006/3325); to the Bailiwick of Jersey by article 2 of the Wireless Telegraphy (Jersey) Order 2006 (S.I. 2006/3324); and to the Isle of Man by article 2 of the Wireless Telegraphy (Isle of Man) Order 2007 (S.I. 2007/278).
- (b) S.I. 2010/2512 as amended by S.I. 2011/3035, S.I. 2013/1253, S.I. 2014/1484, S.I. 2017/746 and S.I. 2018/263.

(3) In regulation 6 (fixed wireless systems)—

- (a) for ““IR 2078, UK Interface Requirement 2078, Fixed Wireless Systems in the frequency band 57.1 to 63.9 GHz”(c)” substitute “IR 2078—UK Interface Requirement 2078, Fixed Wireless Systems in the frequency band 57.1 to 70.875 GHz, published by OFCOM in November 2018”;
- and
- (b) delete footnote (c).

6th November 2018

Philip Marnick
Group Director of Spectrum Group
For and by the authority of the Office of Communications