Ofcom
making communications work
for everyone

Aligning licence terms in the 3.4-3.8 GHz band

CONSULTATION:

Publication Date: 24 May 2022

Closing Date for Responses: 5 July 2022

Contents

Section

Annex

1. Overview

Currently, UK Broadband's spectrum licences in the 3.4-3.6 GHz and 3.6-3.8 GHz bands (collectively the 3.4-3.8 GHz band) are subject to different terms than other licences in the same bands. We consider that, in this case, removing the disparity between terms in these bands could potentially reduce barriers, such as transaction costs and complexity, to efficient trades. This is consistent with our duty to secure optimal use for wireless telegraphy of the electro-magnetic spectrum. In this document we present our proposed approach to dealing with this issue.

What we are proposing – in brief

To help reduce the barriers to potential trading, we propose to:

- Align the terms of the UK Broadband 3.4 GHz licence with the terms of auctioned licences in the 3.4-3.6 GHz band.
- Align the terms of the UK Broadband 3.6 GHz licence with the terms of auctioned licences in the 3.6-3.8 GHz band.

This proposal would not affect UK Broadband's 3.9 GHz spectrum.

2. Introduction and legal framework

2.1 Spectrum in the 3.4-3.8 GHz band is harmonised for 5G services across Europe and is currently being used by the four UK mobile network operators (MNOs) to deliver 5G services to UK consumers.

2.2 Much of this spectrum was awarded to MNOs via two spectrum auctions: 150 MHz in the 3.4-3.6 GHz band ("the 3.4 GHz band") auction in 2018 and 120 MHz in the 3.6-3.8 GHz band ("the 3.6 GHz band") auction in 2021.

2.3 At the time of the auctions, the other available spectrum in the 3.4-3.8 GHz band (120 MHz) was already licensed to UK Broadband Limited ("UKB") and was not included in the spectrum auctions. In particular:

a) UKB, which was acquired by H3G in 2017, holds a licence which authorises it to use 40 MHz of spectrum in the 3.4 GHz band in two separate 20 MHz blocks at 3480-3500 MHz and at 3580-3600 MHz. In this document we refer to this as UKB's 3.4 GHz licence[1].

b) UKB also holds a licence which authorises it to use 164 MHz of spectrum in two separate blocks at 3600-3680 MHz and at 3925-4009 MHz. In this document we refer to this as UKB's 3.6 GHz licence.

2.4 As a consequence of the various licences having been granted at different times, each of UKB's 3.4 GHz licence and UKB's 3.6 GHz licence is subject to different terms than the auctioned licences in the 3.4 GHz band and the 3.6 GHz band respectively. Terms which are different between licences include terms relating to revocation, fees and leasing.

2.5 In this document we consider how the disparity between the terms for UKB licences and the corresponding auctioned licences in the 3.4-3.8 GHz band could act as a potential barrier to trading, and present proposals for aligning the terms of these licences.

Legal framework

Power to grant licences

2.6 Section 8(1) of the WTA provides Ofcom with the power to grant wireless telegraphy licences.

2.7 Section 9(1) of the WTA provides that wireless telegraphy licences may be granted subject to such terms, provisions and limitations as Ofcom think fit. Section 9(7) of the WTA provides that Ofcom may only impose terms that they are satisfied are:

a) objectively justifiable in relation to the networks and services to which they relate;

b) not such as to discriminate unduly against particular persons or against a particular description of persons;

[1] In UKB's licence document, this licence is referred to as the Spectrum Access 3.5 GHz licence.

c) proportionate to what they are intended to achieve; and

d) in relation to what they are intended to achieve, transparent.

Power to amend licences

2.8 Paragraph 6 of Schedule 1 to the WTA provides that Ofcom may revoke a wireless telegraphy licence or vary its terms, provisions or limitations by a notice in writing given to the holder of the licence; or by a general notice applicable to licences of the class to which the licence belongs, published in such way as may be specified in the licence.

2.9 Paragraph 6A of Schedule 1 to the WTA provides that Ofcom may not revoke or vary a wireless telegraphy licence unless the proposed revocation or variation is objectively justifiable.

2.10 Paragraph 7 of Schedule 1 to the WTA sets out the procedure that applies where Ofcom propose to vary a licence, including notice requirements, the provision of an opportunity for the licence holder to make representations and, where the result of the variation is that the term of the licence is extended, the requirement to publish the decision and the reasons for it.

2.11 Where a variation is made with the consent of the licence holder, the procedural requirements relevant to the variation of a licence set out in paragraph 7 of Schedule 1 to the WTA do not apply. However, if the result of the variation is that the term of the licence is extended, the decision and the reasons for it must be published. Paragraph 6A of Schedule 1 to the WTA requiring the variation to be objectively justifiable would also continue to apply in cases where the variation is made with consent.

Power to set and vary fees

2.12 Under section 12(1) of the WTA Ofcom have the power to require licensees to pay fees to Ofcom on the grant of a licence, and subsequently during its term and in respect of its variation or revocation. The timing of the fee payment must be set out in the regulations, and the amount of the fee can be prescribed in the regulations, or alternatively the regulations may provide for the amount to be determined by Ofcom in accordance with the regulations.[2] Where the licence was granted following an auction the circumstances in which the fee can be changed are limited.[3]

2.13 Section 13 of the WTA provides for Ofcom to set fees at an amount that is higher than the cost to Ofcom of carrying out our radio spectrum functions. This power may be exercised if

[2] Section 12(3) WTA.

[3] Under section 12(6) WTA where a licence was granted following an auction the fee can only be changed (a) where a provision included in the licence with the consent of the holder of the licence provides for the regulations to apply; (b) where the licence includes terms restricting the exercise by Ofcom of their power to revoke the licence before the end of a period and that period has expired; (c) where the licence would, but for a variation, have ceased to have effect at the end of a period and that period has expired; or (d) where the licence is a surrendered-spectrum licence. In the case of (c) or (d) the consent of the Secretary of State is required.

we think fit in the light (in particular) of the matters to which we must have regard under section 3 of the WTA.

Ofcom's duties

2.14 When exercising its functions Ofcom must act in accordance with its statutory duties. Section 3 of the WTA imposes a number of duties relating to spectrum management. Amongst other things, in carrying out its spectrum functions Ofcom is required to have regard to the extent to which spectrum is available for use, and the demand (both current and future) for the use of spectrum. Section 3 of the WTA also requires Ofcom to have regard to the desirability of promoting the development of innovative services and competition in the provision of electronic communications services.

2.15 Section 3 of the Communications Act 2003 sets out Ofcom's general duties including its principal duty:

a) to further the interests of citizens in relation to communications matters; and

b) to further the interests of consumers in relevant markets, where appropriate by promoting competition.

2.16 In carrying out its functions, section 3(2) provides that Ofcom is required, amongst other things, to secure the optimal use for wireless telegraphy of the electro-magnetic spectrum, the availability throughout the UK of a wide range of electronic communication services and the availability throughout the UK of a wide range of television and radio services.

2.17 We place particular weight in this context on our duty to secure optimal use for wireless telegraphy of the electro-magnetic spectrum. We interpret our obligation to secure optimal use of spectrum to mean that the spectrum is used in a way that maximises the value that citizens and consumers derive from it, including the wider social value of spectrum use, and taking into account the specific consumer and citizen interests, including the interests of particular groups within society.

Making statutory instruments to implement our policy decisions

2.18 Before making any regulations by statutory instrument, we are required by section 122(4) of the WTA to give statutory notice of our proposal to do so to. Under section 122(5), such notice must state that we propose to make the regulations in question, set out their general effect, 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.

Impact Assessment

2.19 This document represents an impact assessment as defined in section 7 of the Communications Act 2003. Impact assessments provide a valuable way of assessing different options for regulation. They form part of best practice policy making.

2.20 In preparing this document, we have considered the costs and benefits of the changes we are proposing.

2.21 Ofcom is an evidence-based organisation and welcomes responses to this consultation. Any comments about our assessment of the impact of our proposals should be sent to us by the closing date for this consultation. We will consider all comments before deciding whether to implement our proposals. For further information about our approach to impact assessments, see the guidelines 'Better policy making: Ofcom's approach to impact assessments' on our website.

Equality Impact Assessment

2.22 Ofcom is separately required by statute to assess the potential impact of all our functions, policies, projects and practices on the following equality groups: age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief, and sexual orientation. Equality impact assessments also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity. We consider that our proposals would not be detrimental to any of these equality groups.

2.23 We have not carried out separate equality impact assessments in relation to the additional equality groups in Northern Ireland: religious belief, political opinion and dependants. This is because we anticipate that our proposals would not have a differential impact in Northern Ireland compared to consumers in general. We welcome any stakeholder views on this assessment.

3. Proposal to align terms of licences in the 3.4-3.8 GHz band

Introduction

3.1 As noted above, spectrum in the 3.4-3.8 GHz band (excluding that already licensed to UKB) was awarded to MNOs in two auctions: the 3.4 GHz auction in 2018 and the 3.6 GHz auction in 2021.

3.2 In preparing for the 3.6 GHz band auction in 2021, we noted the general consensus that optimal deployment of 5G is best achieved through the use of large contiguous blocks of spectrum.

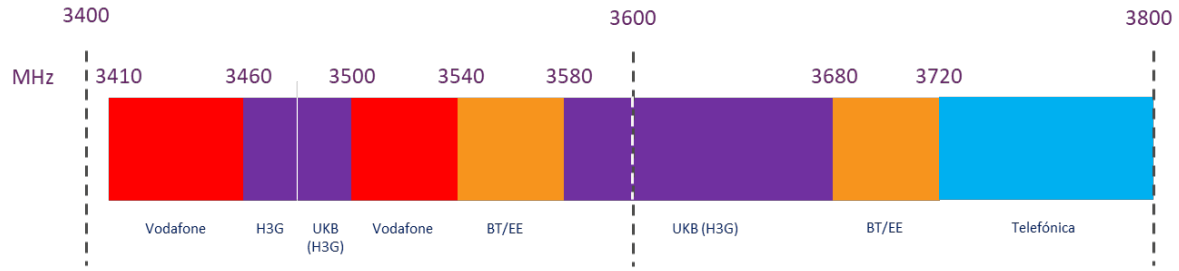
3.3 However, spectrum in the 3.4 GHz band had already been awarded to MNOs in 2018 and this meant that, without rearrangement, some MNOs' holdings were likely to be fragmented across the 3.4-3.8 GHz band. For this reason, we included measures in the assignment stage of the auction to facilitate post-auction trades for rearranging the 3.4-3.8 GHz band.

3.4 During this assignment phase, Telefónica and Vodafone agreed to trade spectrum, which resulted in Telefónica consolidating its spectrum in the 3.4-3.8 GHz band into a contiguous 80 MHz block, and Vodafone moving its spectrum holdings closer together in the band.

3.5 This resulted in all MNOs having access to at least 80 MHz of spectrum in the band which is either contiguous or proximate (i.e. two spectrum holdings close in frequency, reducing costs of deployment).

3.6 We show the current position of spectrum holdings in the band in figure 2.1 below.

Figure 2.1: Current spectrum holdings in the 3.4-3.8 GHz band[4]



3.7 However, as Figure 2.1 shows, notwithstanding the Telefónica and Vodafone trade, some degree of fragmentation of spectrum holdings remains in the 3.4-3.8 GHz band. Therefore, we consider that there remains scope for commercial negotiations to result in rearrangements which increase efficiency further relative to the current position. For example, one holder might acquire some spectrum from another, thereby changing the

[4] As part of the terms of the trade discussed in paragraph 3.4, Telefónica and Vodafone have concurrent shared access to 3500-3540 MHz and 3720-3760 MHz until 31 December 2025.

allocation of spectrum in the band; and/or two holders may swap equal parts of their holdings to defragment the band further.

3.8 However, H3G and at least one other MNO have told us that they have had difficulties in agreeing trades in the band due to the disparity between the terms of auctioned licences and the terms of the UKB Licences.

UKB's licences

3.9 As a consequence of the UKB licences being awarded at a different time, the terms of the UKB licences differ to the terms of other licences in the same band.

3.10 UKB's licences are currently subject to annual licence fees (ALFs) and can be revoked at 5 years' notice, whereas the holders of auctioned licences have paid an upfront fee in the auction (and do not currently pay ALFs) and their licences cannot be revoked before the end of a 20-year initial licence term.

3.11 We provide a summary of the key points for each of these licences below:

Table 3.1: Summary of licence terms in the 3.4-3.8 GHz band

	UKB licences	**Auctioned licences**
3.4-3.6 GHz	Awarded in the 2003 auction. Indefinite duration, subject to 5 years' notice. Subject to payment of annual licence fees (ALFs) now.	Awarded to winners of the 2018 auction. Indefinite duration, subject to 5 years' notice from 2033. The licences become subject to ALFs from 2038.
3.6-3.8 GHz	Initially administratively granted in 1992. Indefinite duration, subject to 5 years' notice. Subject to payment of annual licence fees (ALFs) now. Spectrum leasing permitted.	Awarded to winners of the 2021 auction. Indefinite duration, subject to 5 years' notice from 2036. The licences become subject to ALFs from 2041. Spectrum leasing not permitted.

3.12 Given the arguments presented by some MNOs, we have considered whether the differences in terms in this band could act as a potential barrier to trading and, could consequently, result in a less efficient use of spectrum. Consistent with our duties, we consider that optimal use for wireless telegraphy of the electro-magnetic spectrum is best secured where there is an efficient allocation of spectrum.

Reducing barriers to trading

3.13 Spectrum trading can lead to an efficient allocation of spectrum but can be hindered when transaction costs are high and the negotiations between parties are complex.

3.14 The differences between UKB licences and the auctioned licences described above could potentially lead to a complex and protracted negotiation and unnecessary transaction costs. This could act as a potential barrier to trading.

3.15 For these reasons, and consistent with our legal duties, we are proposing to align the licence terms and fees of the UKB licences with the terms and fees of auctioned licences.

3.16 The purpose of such an alignment would be to remove the disparity between the UKB licences and auctioned licences such that all licensees within each of the 3.4 and the 3.6 GHz bands are in the same position with respect to their licence terms and fees, removing the potential barriers to trading. We consider that this could as a consequence lead to more efficient use of spectrum, consistent with our duty to secure the optimal use for wireless telegraphy of the electro-magnetic spectrum.

3.17 To achieve this, we would need to vary the terms of the UKB Licences as follows:

- For the 3.4 GHz UKB licence:
  - Change the notice period for revocation from five years notice to no earlier than 11 April 2038; and
  - Include a new start date for fee payments so that UKB will start to pay ALFs from 12 April 2038
- For the 3.6 GHz UKB licence:
  - Change the notice period for revocation from five years notice to no earlier than 26 April 2041;
  - Include a new start date for fee payments so that UKB will start to pay ALFs from 27 April 2041; and
  - Remove the licence term which permits spectrum leasing.

3.18 For the 3.6 GHz UKB licence, we will also move the 3.9 GHz spectrum into a new, separate licence. [5]

3.19 We have prepared a marked-up copy of the proposed variations to the UKB 3.4 GHz and UKB 3.6 GHz licences and include these at annex 1.

3.20 To align the fees, we propose to require UKB to pay lump-sum amounts as follows:

- For the 3.4 GHz licence, a lump-sum amount based on:
  - the auction price of spectrum in the 2018 3.4 GHz auction;
  - an assumed 20-year initial licence term starting on the date of the 2018 auction, while offsetting ALFs paid by UKB for its 3.4 GHz licence since the 2018 auction date.
- For the 3.6 GHz licence, a lump-sum amount based on:
  - the auction price of spectrum in the 2021 3.6 GHz auction;

[5] The 3.6 GHz UKB licence currently includes a schedule which authorises UKB to use 3925-4009 MHz (the 3.9 GHz spectrum). This spectrum is used for fixed wireless access rather than mobile. It is also subject to a different fees regime than the 3.6 GHz spectrum and is shared with other users. As the uses and conditions for this spectrum are very different to the 3.6 GHz spectrum, we believe the best approach would be to move this spectrum authorisation into a new, separate licence. All current licence terms, conditions and fees for the 3.9 GHz spectrum will remain the same.

- an assumed 20-year initial licence term starting on the date of the 2021 auction, while offsetting ALFs paid by UKB for its 3.6 GHz licence since the 2021 auction date.

3.21 We consider that this approach should mean that all holders of Spectrum Access licences in the 3.4 GHz and 3.6 GHz bands would achieve parity with respect to their holdings in these bands.

3.22 Because we are aligning terms, we do not consider that there are any significant costs to MNOs or consumers from the proposed changes. However, there are potential benefits to society if the changes assist efficient spectrum trades.

3.23 We have presented our proposal to H3G in advance of publication of this document. H3G has confirmed that it would consent to the licence variations if we were to wish to proceed with them following consultation, having taken account of other stakeholders' views.

3.24 We present our calculation of the lump-sum amounts for each of the UKB 3.4 and 3.6 GHz licences below.

3.25 The draft fee regulations to implement these changes are included at annex 2.

Calculation of the lump-sum amounts for the UKB 3.4 and UKB 3.6 GHz licences

3.26 The lump-sum amount payable by UKB is calculated as follows:

- All figures in our calculation are converted to **March 2022 prices** using CPI to account for changes in price levels between the relevant auction and payment dates.
- A **gross lump-sum value** (*row C*) for each band is calculated as UKB's spectrum holding (*row A*) multiplied by the auction price of that band (*row B*).
- The amount of **ALF payments to be offset** (*row D*) against the gross lump-sum value is calculated for each band:
  i) **3.4 GHz:** The auction concluded in April 2018. UKB paid ALFs for the 3.4 GHz band in July 2019, July 2020, and July 2021. These are offset in full.
  ii) **3.6 GHz:** The auction concluded in April 2021. UKB's December 2020 payment was for 2021 ALFs, eight months of which are after the 3.6 GHz auction date. This payment is offset on a pro-rata basis. UKB's December 2021 payment is offset in full.
- The total of ALF payments to be offset in each band is subtracted from the gross lump-sum value of that band to give the **net lump sum value** (*row E*) for each band, and the results are added together to arrive at the **net lump-sum total** (*row F*).
  The results, expressed in **March 2022 prices**, are summarised as follows:

Table 3.2: Lump-sum values for the UKB 3.4 and UKB 3.6 GHz spectrum

	Band		3.4 GHz	3.6 GHz
A	Amount of spectrum held by UKB	MHz	40	80
B	Auction price	£ per MHz	8,404,536	4,467,030
C	Gross lump-sum value	£m	336.2	357.4
D	ALF payments to be offset*	£m	(58.0)	(64.4)
E	Net lump-sum value	£m	278.2	292.9
F	Net lump-sum total	£m	**571.1**	

** This includes payments up to and including 30 April 2022; future ALF payments becoming liable before the lump-sum payment date are also to be offset but are not included in this calculation.*

3.27 The calculations above assume a **lump-sum payment date** of 30 April 2022. If the lump-sum payment is made after this date, any **future payments of ALFs** becoming liable after 30 April 2022 would also **need to be offset** against the net lump-sum total. We note the next such payment is the 31 July 2022 payment of £19.3m (in March 2022 prices).

3.28 In addition, values are expressed in March 2022 prices for convenience. Depending on when the lump-sum payment is made, the lump-sum amounts set out above would need to be **indexed by CPI** to account for changes in price levels between March 2022 and the **lump-sum payment date**.

Application of the legal framework to our proposals

3.29 As set out in Section 1, paragraph 6 of Schedule 1 to the WTA provides that Ofcom may revoke a wireless telegraphy licence or vary its terms, provisions or limitations. Paragraph 6A of Schedule 1 to the WTA provides that Ofcom may not vary a wireless telegraphy licence unless the proposed revocation or variation is objectively justifiable.

3.30 As set out above we consider that in this case the differences between terms for UKB licences and the auctioned licences could act as a potential barrier to trading, because the differences could potentially lead to a complex and protracted negotiation and unnecessary transaction costs, or could prevent the trade from happening altogether. Therefore we consider our proposal to vary the terms of UKB's licences so that they are aligned with auctioned licences in the 3.4 to 3.6 and 3.6 to 3.8 GHz bands is objectively justified on the basis that it will remove a potential barrier to trading.

3.31 Under section 122 of the WTA, when giving notice of a proposal to make regulations by statutory instrument, we are required to set out the general effect of the regulations. The regulations we are proposing to make as a consequence of our proposal to vary the terms of the licences will set an upfront fee for the period up to 2038 and 2041 for the 3.4 and 3.6 GHz UKB licences respectively. As set out in 3.26 – 3.28, for the 40 MHz of 3.4 GHz spectrum we would set the fee based on the 2018 auction prices so that the fees across the 3.4 GHz to 3.6 GHz band are aligned. For the 80 MHz of 3.6 GHz spectrum we would set the fee based on the 2021 auction prices so that the fees across the 3.6 GHz to 3.8 GHz band are also aligned. We will also revoke the Wireless Telegraphy (Licence Charges for the

3.4 GHz Frequency Band and the 3.6 GHz Frequency Band) Regulations 2019 to remove the requirement to pay annual licence fees. A copy of the proposed regulations is at annex 2.

3.32 In making these proposals we have considered our principal duty to further the interests of citizens, and the interests of consumers where appropriate by promoting competition, and we have considered our duties relating to the optimal use for wireless telegraphy of the electro-magnetic spectrum, the desirability of encouraging investment and innovation, the desirability of encouraging competition, having regard to the interests of consumers in respect of choice, price, quality of service and value for money. We also consider that our proposals do not discriminate unduly against particular persons or against a particular description of persons, are proportionate to what they are intended to achieve and transparent. We consider that for the reasons set out above, our proposals are consistent with our statutory duties.

Question 1: Do you agree with our proposal to align the terms of the UKB licences with the terms of auctioned licences in the 3.4-3.8 GHz band?

Question 2: Do you agree with our proposed methodology for calculating the revised licence payments for UKB licences?

Question 3: Do you have any comments on the draft revised UKB licences or the draft fee regulations?

Next steps

3.33 Stakeholders are invited to provide their feedback on the proposals set out in this document **by 5pm on 5 July 2022**.

3.34 We will carefully consider the responses. Should we decide to proceed with our proposals, we would then publish a statement setting out our decision and describing the actions needed to implement it.

A1. Proposed variations to the UKB 3.4 GHz and UKB 3.6 GHz licences

Draft UKB 3.4 GHz licence

Office of Communications (Ofcom)
Wireless Telegraphy Act 2006

SPECTRUM ACCESS 3.~~5~~4 GHz

This licence document replaces the version of the Licence issued by Ofcom on 25 June 2019 to UK Broadband

Licence no.: **1197663**
Date of issue: **18 May 2021**
Fee Payment Date: ~~**31 July**~~**12 April** (annually from 12 April 2038)

1. The Office of Communications (Ofcom) grants this wireless telegraphy licence ("the Licence") to

   UK Broadband Limited
   (Company Registration number: 04713634)
   ("the Licensee")
   Great Brighams Mead
   Vastern Road
   Reading
   Berkshire
   RG1 8DJ

   to establish, install and use wireless telegraphy stations and/or wireless telegraphy apparatus as described in the schedule to this Licence (together "the Radio Equipment") subject to the terms set out below.

Licence term

2. This Licence shall continue in force until revoked by Ofcom or surrendered by the Licensee.

Licence variation and revocation

3. Pursuant to schedule 1, paragraph 8 of the Wireless Telegraphy Act 2006 (the "Act"), Ofcom may not revoke this Licence under schedule 1, paragraph 6 of the Act except:

   (a) at the request, or with the consent, of the Licensee;

   (b) if there has been a breach of any of the terms of this Licence;

   (c) in accordance with schedule 1 paragraph 8(5) of the Act;

(d) if it appears to Ofcom to be necessary or expedient to revoke the Licence for the purpose of complying with a direction by the Secretary of State given to Ofcom under section 5 of the Act or section 5 of the Communications Act 2003;

(e) if, in connection with the transfer or proposed transfer of rights and obligations arising by virtue of the Licence, there has been a breach of any provision of regulations made by Ofcom under the powers conferred by section 30 of the Act[6];

(f) for reasons related to the management of the radio spectrum, provided that in such case the power to revoke may only be exercised after at least five years' notice is given in writing (such notice period must not expire before 11 April 2038); or

(g) if the Licensee has been found to the reasonable satisfaction of Ofcom to have been involved in any act, or omission of any act, constituting a breach of any award regulations associated with the frequencies permitted in this licence ("the Regulations").

4. Ofcom may only revoke or vary this Licence by notification in writing to the Licensee and in accordance with schedule 1, paragraphs 6, 6A and 7 of the Act.

Transfer

5. This Licence may not be transferred. The transfer of rights and obligations arising by virtue of this Licence may however be authorised in accordance with regulations made by Ofcom under powers conferred by section 30 of the Act[7].

Changes to the Licensee Details

6. The Licensee shall give prior notice to Ofcom in writing of any proposed change to the Licensee's name and address as recorded in paragraph 1 of this Licence.

Fees

7. From 12 April 2038 ~~T~~the Licensee shall each year pay to Ofcom the relevant fee as provided under section 12 of the Act and regulations made thereunder on or before the fee payment date shown above, or on or before such dates as shall be notified in writing to the Licensee.

8. The Licensee shall also pay interest to Ofcom on any amount which is due to Ofcom under the terms of this Licence or provided for in any regulations made by Ofcom under sections 12 or 13(2) of the Act from the date such amount falls due until the date of payment, at the then applicable Bank of England base rate. In accordance with section 15 of the Act any such amount and any such interest is recoverable by Ofcom.

9. If the Licence is surrendered, revoked or varied, no refund, whether in whole or in part, of any amount which is due under the terms of this Licence, payable in

[6] These are regulations on spectrum trading.

[7] See Ofcom's website for the latest position on spectrum trading and the types of trade which are permitted.

accordance with the Regulations, or provided for in any regulations made by Ofcom under sections 12 and 13(2) of the Act will be made, except at the absolute discretion of Ofcom.

Radio equipment use

10. The Licensee shall ensure that the Radio Equipment is established, installed and used only in accordance with the provisions specified in the schedules to this Licence. Any proposal to amend any detail specified in any of the schedules to this Licence must be agreed with Ofcom in advance and implemented only after this Licence has been varied or reissued accordingly.

11. The Licensee shall ensure that the Radio Equipment is operated in compliance with the terms of this Licence and is used only by persons who have been authorised in writing by the Licensee to do so and that such persons are made aware of, and of the requirement to comply with, the terms of this Licence.

12. The Licensee must ensure that all Radio Equipment is established, installed, modified and used only in accordance with the provisions specified in schedule 2 (EMF Licence Condition) of this Licence.

Access and inspection

13. The Licensee shall permit a person authorised by Ofcom:

    (a) to have access to the Radio Equipment; and

    (b) to inspect this Licence and to inspect, examine and test the Radio Equipment,

    at any and all reasonable times or, when in the opinion of that person an urgent situation exists, at any time, to ensure the Radio Equipment is being used in accordance with the terms of this Licence.

Modification, restriction and closedown

14. Any person authorised by Ofcom may require the Radio Equipment or any part thereof, to be modified or restricted in use, or temporarily or permanently closed down immediately if in the opinion of the person authorised by Ofcom:

    (a) a breach of a term of the Licence has occurred; and/or

    (b) the use of the Radio Equipment is, or may be, causing or contributing to undue interference to the use of other authorised radio equipment.

15. Ofcom may require any of Radio Equipment to be modified or restricted in use, or temporarily closed down either immediately or on the expiry of such period as may be specified in the event of a national or local state of emergency being declared. Ofcom may only exercise this power after a written notice has been served on the Licensee or a general notice applicable to holders of a named class of licence has been published.

Geographical boundaries

16. Subject to the requirements of any coordination procedures notified to the Licensee pursuant to schedule 1 to this Licence, and excluding the areas set out in paragraph 17 of this Licence, the Licensee is authorised to establish, install and use the Radio Equipment in the United Kingdom. (The Licensee is not authorised to establish, install and use the Radio Equipment in the Channel Islands or the Isle of Man).

17. The areas excluded from this licence are the territorial sea and any inland waters adjacent to the territorial sea, but in the case of streams, rivers or other watercourses which form part of such inland waters they are only excluded where such stream, river or watercourse is more than 2km wide.

Interpretation

18. In this Licence:

(a) the establishment, installation and use of the Radio Equipment shall be interpreted as establishment and use of wireless telegraphy stations and installation and use of wireless telegraphy apparatus as specified in section 8(1) of the Act;

(b) the expression “interference” shall have the meaning given by section 115 of the Act;

(c) the expressions “wireless telegraphy station” and “wireless telegraphy apparatus” shall have the meanings given by section 117 of the Act;

(d) the expression “territorial sea” shall be determined in accordance with the Territorial Sea Act 1987;

(e) the expression “inland waters” shall have the meaning given by section 221(1) of the Water Resources Act 1991;

(f) the schedules form part of this Licence together with any subsequent schedule(s) which Ofcom may issue as a variation to this Licence at a later date; and

(g) the Interpretation Act 1978 shall apply to this Licence as it applies to an Act of Parliament.

Issued by Ofcom

Office of Communications

SCHEDULE 1 TO LICENCE NUMBER: 1197663

Schedule Date: 18 May 2021

Licence Category: Spectrum Access 3.~~5~~4 GHz

Description of Radio Equipment

1. References in this schedule to the Radio Equipment are references to any wireless telegraphy station or wireless telegraphy apparatus that is established, installed and/or used under this schedule.

Interface Requirements for the Radio Equipment

2. Use of the Radio Equipment shall be in accordance with the following Interface Requirement:

   IR 2097: Terrestrial systems capable of providing electronic communications services in the 3.4 to 3.8 GHz band.

Special conditions relating to the Radio Equipment

3.

(a) Subject to paragraph 3(b) of this schedule, during the period that this Licence remains in force, unless consent has otherwise been given by Ofcom, the Licensee shall compile and maintain accurate written records of the following details relating to the Radio Equipment:

i) postal address (including post code);

ii) National Grid Reference, to at least 10m resolution;

iii) antenna height (above ground level), type, and boresight bearing east of true north (if applicable);

iv) radio frequencies which the Radio Equipment uses; and

v) Transmitted power expressed in dBm / 5 MHz EIRP per cell for non-AAS Radio Equipment; and

vi) Transmitted power expressed in dBm / 5 MHz TRP per cell for AAS Radio Equipment.

and the Licensee must produce these records if requested by any person authorised by Ofcom.

(b) The conditions relating to the keeping of records contained in sub-paragraphs 3(a)(i), (ii) and (iii) of this schedule shall not apply in respect of femtocell equipment and smart/intelligent low power repeater equipment.

(c) The conditions relating to the keeping of records contained in paragraph 3(a) of this schedule shall not apply in respect of licence exempt radio equipment.

(d) The Licensee shall submit to Ofcom copies of the records detailed in sub-paragraph 3(a) above at such intervals as Ofcom may notify to the Licensee.

(e) The Licensee shall submit to Ofcom in such manner and within such period as specified by Ofcom, such other information in relation to the Radio Equipment, or any wireless telegraphy station or wireless telegraphy apparatus which the Licensee is planning to use, as Ofcom may from time to time request. Such information may include, but is not limited to, information in relation to the radio frequency, transmitted power and date of first use for wireless telegraphy stations or wireless telegraphy apparatus to be established, installed or used within such timeframe and in such areas as Ofcom may reasonably request.

Coordination at frequency and geographical boundaries

4. The Licensee shall ensure that the Radio Equipment is operated in compliance with such coordination procedures as may be notified to the Licensee by Ofcom from time to time.

International cross-border coordination

5. The Licensee shall ensure that the Radio Equipment is operated in compliance with such cross-border coordination and sharing procedures as may be notified to the Licensee by Ofcom from time to time.

Cooperation between Licensees

6. In addition to complying with the specific transmission terms, conditions and limitations set out in this Licence, the Licensee must liaise and co-operate with other holders of licences in the 3410 MHz – 3800 MHz band (if necessary adjusting transmission power and other technical parameters of transmission) in such a way that harmful interference is not caused by one network deployment to that of another Licensee within the band.

Permitted Frequency Blocks

7. The Radio Equipment may only transmit within the following frequency bands (the "Permitted Frequency Blocks"):

3480 - 3500 MHz
3580 - 3600 MHz

Maximum power within the Permitted Frequency Blocks

8. Subject to any more restrictive limitations imposed by the coordination requirements notified by Ofcom in accordance with paragraphs 4 and 5 of this schedule, the power transmitted in the Permitted Frequency Blocks shall not exceed:

Radio Equipment	Maximum mean power
non-AAS base station[a]	65 dBm / 5 MHz EIRP per cell
AAS base station[a]	44 dBm / 5 MHz TRP per cell
Mobile or nomadic terminal station[b]	28 dBm TRP
Fixed or installed terminal station[b]	35 dBm / 5 MHz EIRP

[a] For femtocell base stations, power control must be applied to minimise interference to adjacent channels.
[b] The maximum mean power relates to the EIRP or TRP of a specific piece of Radio Equipment irrespective of the number of transmit antennas.

Maximum power of base stations outside the Permitted Frequency Blocks

9. When transmitting, the Licensee must either transmit in accordance with the condition in paragraph (a) or in accordance with the condition in paragraph (b) –

(a) The condition referred to is that the Licensee must transmit within the limits of the Permissive Transmission Mask and, if doing so, the Licensee must also transmit within the limits of transmission Frame Structure A.

(b) The condition referred to is that the Licensee must transmit within the limits of the Restrictive Transmission Mask, and, if doing so, it must also transmit and within the limits of transmission Frame Structure B.

10. The Permissive Transmission Mask means that –

for transmissions on the downlink frequencies, the maximum mean EIRP or TRP emanating from the Radio Equipment transmissions at any frequency outside the Permitted Frequency Blocks, but within 3410 – 3800 MHz, shall not exceed the following transitional and baseline requirements:

	Non-AAS dBm / 5 MHz EIRP per antenna	AAS dBm / 5 MHz TRP per cell	
-5 to 0 MHz offset from lower block edge 0 to 5 MHz offset from upper block edge	Min(PMax – 40, 21)	Min(PMax' – 40, 16)	
-10 to -5 MHz offset from lower block edge 5 to 10 MHz offset from upper block edge	Min(PMax – 43, 15)	Min(PMax' – 43, 12)	
Out of block baseline power limit (BS) < -10 MHz offset from lower block edge > 10 MHz offset from upper block edge	Min(PMax – 43, 13)	Min(PMax' – 43, 1)	

11. The Restrictive Transmission Mask means that –

for transmissions on the downlink frequencies, the EIRP emanating from the Radio Equipment transmissions at any frequency outside the Permitted Frequency Blocks, but within 3410 – 3800 MHz, shall not exceed the following baseline:

	non-AAS dBm / 5 MHz EIRP per cell*	AAS dBm / 5 MHz TRP per cell
Out of block baseline power limit (BS)	- 34	-43

12. Frame Structure A (also known as the "Preferred Frame Structure") means that:

(a) transmissions from the Licensee's base stations have a frame structure as shown in Figure 1. Timeslots (or subframes) 0, 2 to 5 and 7 to 9 must be allocated to Downlink (D) or Uplink (U) transmissions as indicated or may be left with no transmissions;

(b) the Licensee must ensure that the special subframe (S) in timeslots 1 and 6 have a structure that is compatible with TD-LTE special subframe configuration 6, also known as 9:3:2 (DwPTS: GP: UpPTS). For the avoidance of doubt, a special subframe structure is compatible where there are no uplink transmissions within the downlink pilot timeslot (DwPTS) or guard period (GP) and no downlink transmissions within the uplink pilot timeslot (UpPTS) or guard period (GP);

(c) timeslots must have a duration of 1 millisecond;

(d) the Licensee shall ensure that frames start at a common reference time so that all licensees' frames are aligned and transmissions synchronised;

Note: TD-LTE frame configuration 2 (3:1) is compatible with this frame structure, as are some 5G NR frame configurations. Other technologies are permitted provided that the requirements of 12(a) to 12(d) are met.

13. Frame Structure B (also known as the "Compatible Frame Structure") means that:

(a) transmissions from the Licensee's base stations must have a frame structure as shown in Figure 2. Timeslots (or subframes) 0 and 2 must be allocated to Downlink (D), or Uplink (U) transmissions as indicated;

(b) the Licensee must ensure that the special subframe (S) in timeslot 1 has a structure that is compatible with TD-LTE special subframe configuration 6, also known as 9:3:2 (DwPTS: GP: UpPTS). For the avoidance of doubt, a special subframe structure is compatible where there are no uplink transmissions within the downlink pilot timeslot (DwPTS) or guard period (GP) and no downlink transmissions within the uplink pilot timeslot (UpPTS) or guard period (GP);

(c) timeslots must have a duration of 1 millisecond;

(d) the Licensee shall ensure that frames start at a common reference time so that all licensees' frames are aligned and transmissions synchronised;

(e) timeslots with no transmission indicated may have no transmission or must be determined as a Downlink, Uplink or Special subframe as necessary in order to ensure compliance with paragraph 13(c) and 13(f);

(f) the Licensee must cooperate to minimise harmful sub-frame overlaps if different technologies are used. On rare occasions this may require the frame alignment or guard period to be slightly offset;

(g) for the avoidance of doubt all-downlink frame structures such as Supplementary Downlink (SDL) are not permitted.

Note: all current TD-LTE frame configurations are compatible with this frame structure, as are some 5G NR frame configurations. Other technologies are permitted provided that the requirements of 13(a) to 13(d) are met.

Figure 1: Frame Structure A

DL/UL ratio	Subframe number									
	0	1	2	3	4	5	6	7	8	9
3:1	D	S	U	D	D	D	S	U	D	D

Figure 2: Frame Structure B

DL/UL ratio	Subframe number									
	0	1	2	3	4	5	6	7	8	9
Any	D	S	U							

14. Irrespective of whether the Restrictive Transmission Mask or the Permissive Transmission Mask is being used, the EIRP or TRP emanating from the Radio Equipment transmissions at any frequency outside the Permitted Frequency Blocks shall not exceed the following additional band edge requirements:

	Non-AAS *dBm / MHz*[a] *EIRP per antenna*	AAS *dBm / MHz*[a] *TRP per cell*
Below 3390 MHz	-50	-52

[a] We note this level is defined in the Commission Decision 2019/235/EC as per MHz rather than per 5 MHz

	Non-AAS *dBm / 5 MHz EIRP per antenna*	AAS *dBm / 5 MHz TRP per cell*
3390 – 3400 MHz	Min(PMax – 43, 13)	Min(PMax' – 43, 1)
3400 – 3405 MHz	Min(PMax – 43, 15)	Min(PMax' – 43, 12)
3405 – 3410 MHz	Min(PMax – 40, 21)	Min(PMax' – 40, 16)
3800 – 3805 MHz	Min(PMax – 40, 21)	Min(PMax' – 40, 16)
3805 – 3810 MHz	Min(PMax – 43, 15)	Min(PMax' – 43, 12)
3810 – 3840 MHz	Min(PMax – 43, 13)	Min(PMax' – 43, 1)
Above 3840 MHz	-2	-14

Small Cells

15. The Licensee is required to comply with the Permissive Transmission Mask as set out in paragraph 10 of this schedule but is not required to comply with the frame structure requirements set out in paragraphs 12 or 13 above, for:

(a) Indoor Domestic Small Cells; or

(b) Indoor Non-domestic Small Cells, except where another licensee demonstrates that they are suffering harmful interference as a result.

If another licensee demonstrates that they are suffering harmful interference as a result of an Indoor Non-domestic Small Cell, the Indoor Non-domestic Small Cell must comply with the requirements set out in paragraphs 9 and 12 above, where Frame Structure A is used or those requirements set out in both paragraphs 9 and 13 above where Frame Structure B is used.

Interpretation of terms in this schedule

16. In this schedule:

(a) “5G NR” means 5G New Radio and refers to the air interface that has been developed by 3GPP for fifth generation (5G) mobile radio networks. This air interface defines how 5G base stations and user devices both transmit and receive radio signals using spectrum;

(b) “AAS” means active antenna system. An AAS is a base station and antenna system where the amplitude and / or phase between antenna elements is continually adjusted resulting in an antenna pattern that varies in response to short term changes in the radio environment. This is not intended to include long term beam shaping such as fixed electrical down tilt. In AAS base stations the antenna system is integrated as part of the base station system or product;

(c) “dBm” means the power level in decibels (logarithmic scale) referenced against 1milliwatt (i.e. a value of 0 dBm is 1 milliwatt);

(d) “Downlink” means transmissions from a base station to a terminal station (handset);

(e) “EIRP” means the equivalent isotropically radiated power. This is 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), measured during the “on” part of the transmission;

(f) “femtocell” means a base station which operates at a power not exceeding 24 dBm EIRP per carrier, and which is or will be used only by and under the control of the Licensee, following the establishment of a telecommunications link between the femtocell and a network of the Licensee;

(g) “Fixed or installed” means used or installed at specific fixed points;

(h) Indoor” means a location inside a building or place in which the shielding will typically provide the necessary attenuation to protect wireless telegraphy against harmful interference;

(i) “Indoor Domestic Small Cell” means a base station with an EIRP of less than or equal to 24dBm per 20 MHz carrier that is located within a residential property;

(j) “Indoor Non-domestic Small Cell” means a base station with an EIRP of less than or equal to 24dBm per 20 MHz carrier that is located indoors but not within a residential property;

(k) "IR" means a United Kingdom Radio Interface Requirement notified by Ofcom in accordance with Article 8 of Directive 2014/53/EU of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment (known as the Radio Equipment Directive);

(l) “lower block edge” means, in relation to each Permitted Frequency Block, the lowest frequency in that Permitted Frequency Block;

(m) “mobile or nomadic” means intended to be used while in motion or during halts at unspecified points;

(n) “non-AAS” means a piece of Radio Equipment which is not an AAS;

(o) “per antenna” means per radiating unit/component (irrespective of the number of radiating elements that make up that unit/component);

(p) “per cell” means per specific piece of Radio Equipment. For a multi-sector base station, per cell refers to each one of the individual sectors irrespective of the number of transmit antennas;

(q) “Permitted Frequency Blocks” has the meaning given to it in paragraph 7 of this schedule;

(r) “PMax” is the maximum mean power for the base station in question if it is using a non-AAS. This is measured as EIRP per carrier and determined on a per antenna basis;

(s) “PMax’” is the maximum mean power for the base station in question if it is using an AAS. This is measured as TRP per carrier and determined on a per cell basis;

(t) “smart/intelligent low power repeater” means a repeater which operates with power not exceeding 24 dBm EIRP per carrier, which may be established by customers of the Licensee who have written agreements with the Licensee and:

- The Licensee has ultimate control of the repeater, i.e. each individual repeater can be disabled remotely by the Licensee;
- The repeater operates only on the Licensee’s frequencies and with their valid Public Land Mobile Network Identifier;
- Must not cause undue interference to other spectrum users; and
- The repeater only transmits on the uplink timeslot when actively carrying a call (voice, video or data) or signalling from serviced handsets.

(u) “TDD” means the application of time-division multiplexing to separate uplink and downlink signals;

(v) “TD-LTE” means the TDD variant of LTE (Long Term Evolution or 4G technology);

(w) “TRP” means the total radiated power. This is the integral of the power transmitted in different directions over the entire radiation sphere, measured during the on part of the transmission;

(x) “Uplink” means transmissions from a terminal station (handset) to a base station; and

(y) “upper block edge” means, in relation to each Permitted Frequency Block, the highest frequency in that Permitted Frequency Block.

SCHEDULE 2 TO LICENCE NUMBER: 1197663

EMF Licence Condition

Schedule Date: 18 May 2021

Licence category: Spectrum Access 3.~~5~~4 GHz

Sites which are not shared with another licensee

1. The Licensee shall only establish, install, modify or use Relevant Radio Equipment if the total electromagnetic field exposure levels produced by the Licensee's On-Site Radio Equipment do not exceed the basic restrictions[8] in the relevant tables for general public exposure identified in the ICNIRP Guidelines[9] in any area where a member of the general public is or can be expected to be present when transmissions are taking place.

Sites which are shared with another licensee

2. In the case of a shared site where the Shared Site Exemption applies to the Licensee, the Licensee shall comply with paragraph 1 above.

3. In the case of a shared site where the Shared Site Exemption does not apply to the Licensee, the Licensee shall only establish, install, modify or use the Relevant Radio Equipment if:

   (a) the total electromagnetic field exposure levels produced by the Licensee's On-Site Radio Equipment, together with

   (b) the total electromagnetic field exposure levels produced by all other wireless telegraphy stations and wireless telegraphy apparatus operated by another licensee on the same site for which the Licensee can reasonably assume that a Shared Site Exemption does not apply,

   do not exceed the basic restrictions[10] in the relevant tables for general public exposure identified in the ICNIRP Guidelines[11] in any area where a member of the general public is or can be expected to be present when transmissions are taking place.

[8] Compliance with the reference levels for general public exposure identified in the ICNIRP Guidelines will ensure compliance with the basic restrictions.
[9] The relevant tables for general public exposure are identified in Ofcom's "Guidance on EMF Compliance and Enforcement".
[10] Compliance with the reference levels for general public exposure identified in the ICNIRP Guidelines will ensure compliance with the basic restrictions.
[11] The relevant tables for general public exposure are identified in Ofcom's "Guidance on EMF Compliance and Enforcement".

Emergency Situations

4. The obligations in paragraphs 1, 2 and 3 above will not apply if the Relevant Radio Equipment is being used for the purpose of seeking emergency assistance or reporting and responding to an emergency situation (in the vicinity of that situation) including for search and rescue activities and maritime emergency communications[12].

Relationship with authorised transmission levels

5. The Licensee shall comply with paragraphs 1, 2 and 3 above notwithstanding the maximum transmission levels authorised in the Licence.

Records

6. The Licensee shall keep, or shall procure that a third party shall keep, and shall make available to Ofcom on request, records (including the type of records identified in Ofcom's "Guidance on EMF Compliance and Enforcement") that demonstrate how it has complied with paragraphs 1, 2 and 3 above when Relevant Radio Equipment is established, installed, modified or used.

Ofcom's "Guidance on EMF Compliance and Enforcement"

7. When evaluating its compliance with paragraphs 1, 2 and 3 above, the Licensee shall take into account Ofcom's "Guidance on EMF Compliance and Enforcement" that is in force at the relevant time.

Interpretation

8. In this schedule:

   (a) **"dBi"** means the ratio in dB (decibel) when comparing the gain of the antenna to the gain of an isotropic antenna. An isotropic antenna is a theoretical antenna which radiates power uniformly in all directions;

   (b) **"EIRP"** means equivalent isotropically radiated power which is the product of the power supplied to an antenna and the absolute or isotropic antenna gain in a given direction relative to an isotropic antenna;

   (c) **"ERP"** means effective radiated power which is the product of the power supplied to an antenna and its gain in a given direction relative to a half-wave dipole;

   (d) "**general public**" means any person who is not: (a) the Licensee, owner, operator or installer of the Relevant Radio Equipment; or (b) acting under a contract of employment or otherwise acting for purposes connected with

[12] Further information on emergency situations in set out in Ofcom's "Guidance on EMF Compliance and Enforcement".

their trade, business or profession or the performance by them of a public function;[13]

(e) **"ICNIRP Guidelines"** means the version of the Guidelines published by the International Commission on Non-Ionizing Radiation Protection for limiting exposure to electromagnetic fields which are identified in Ofcom's "Guidance on EMF Compliance and Enforcement" that is in force at the relevant time.[14]

(f) **"Licensee's On-Site Radio Equipment"** means the Relevant Radio Equipment and any other wireless telegraphy station(s) and wireless telegraphy apparatus on the same site which transmits at powers higher than 10 Watts EIRP or 6.1 Watts ERP.[15]

(g) **"Relevant Radio Equipment"** means all the Radio Equipment that is authorised by this Licence to transmit at powers higher than 10 Watts EIRP or 6.1 Watts ERP.

(h) **"Shared Site Exemption"** means any of the following three situations apply on a shared site in relation to the Licensee's or another licensee's wireless telegraphy station(s) or wireless telegraphy apparatus that is authorised to transmit at powers higher than 10 Watts EIRP or 6.1 Watts ERP:

- The first situation is that all of the licensee's wireless telegraphy station(s) or wireless telegraphy apparatus on a shared site do not transmit at a combined total radiated power in any particular direction[16] that is higher than 100 Watts EIRP or 61 Watts ERP;[17]
- The second situation is that the total electromagnetic field exposure levels produced by the licensee's wireless telegraphy station(s) or

[13] There is pre-existing health and safety legislation which already requires employers to protect workers from exposure to electromagnetic fields ("EMF") including the following legislation specifically relating to EMF (as amended from time to time): The Control of Electromagnetic Fields at Work Regulations 2016, The Control of Electromagnetic Fields at Work Regulations (Northern Ireland) 2016 and The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Electromagnetic Fields) Regulations 2016.

[14] Ofcom's "Guidance on EMF Compliance and Enforcement" will initially require the Licensee to comply with the ICNIRP Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz), published in: Health Physics 74(4):494-522, dated April 1998 and available at: https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf ("1998 Guidelines") or the ICNIRP Guidelines for limiting exposure to electromagnetic fields (100 KHz to 300 GHz), published in: Health Physics 118(5): 483–524; 2020 and available at: https://www.icnirp.org/cms/upload/publications/ICNIRPrfgdl2020.pdf ("2020 Guidelines"). However, once work on the relevant standards explaining the methodology for assessing compliance with the 2020 Guidelines has progressed sufficiently, Ofcom will publish a public consultation on updating its "Guidance on EMF Compliance and Enforcement" to explain that going forward Ofcom will be requiring the Licensee to comply with the 2020 Guidelines only. Following this public consultation, Ofcom will publish an updated version of Ofcom's "Guidance on EMF Compliance and Enforcement" on its website. Ofcom will follow the same process for any subsequent versions of the ICNIRP Guidelines.

[15] 10 Watts EIRP is equivalent to 6.1 Watts ERP. In linear units EIRP (W) = 1.64 x ERP (W); in decibels EIRP (dB) = ERP (dB) + 2.15. Ofcom's "Guidance on EMF Compliance and Enforcement" explains how the Licensee can determine if wireless telegraphy station(s) or wireless telegraphy apparatus "transmits at powers higher than 10 Watts EIRP or 6.1 Watts ERP".

[16] For the purpose of this situation, the combined total radiated power is a simple sum of the radiated powers (in EIRP or ERP) of all of the licensee's wireless telegraphy station(s) or wireless telegraphy apparatus on the shared site that transmits signals covering the same or overlapping areas.

[17] 100 Watts EIRP is equivalent to 61 Watts ERP.

wireless telegraphy apparatus in any area where a member of the general public is or can be expected to be present when transmissions are taking place is no more than 5% of the basic restrictions or 5% of the reference levels in the relevant tables for general public exposure identified in the ICNIRP Guidelines;[18]

- The third situation is where the licensee's wireless telegraphy station or wireless telegraphy apparatus has an antenna gain that is equal to or higher than 29 dBi and has a fixed beam;

(i) **"shared site"** means a site that is shared by the Licensee and at least one other licensee for the purposes of establishing, installing, modifying or using wireless telegraphy stations or wireless telegraphy apparatus;

(j) **"site"** means a physical structure, building, vehicle or moving platform;

(k) **"wireless telegraphy apparatus"** has the meaning given to it in section 117 of the Wireless Telegraphy Act 2006; and

(l) **"wireless telegraphy station"** has the meaning given to it in section 117 of the Wireless Telegraphy Act 2006.

Ofcom

[18] The relevant tables for general public exposure are identified in Ofcom's "Guidance on EMF Compliance and Enforcement".

Draft UKB 3.6 GHz licence

Office of Communications (Ofcom)
Wireless Telegraphy Act 2006

SPECTRUM ACCESS 3.6 GHz

This licence document replaces the version of the Licence issued by Ofcom on 25 June 2019 to UK Broadband Limited.

Licence no.: **0823615**
Date of issue: **18 May 2021**
Fee Payment Date: ~~**31 December**~~ **27 April** (annually from 2041)

19. The Office of Communications (Ofcom) grants this wireless telegraphy licence ("the Licence") to

UK Broadband Limited
(Company Reg No: 4713634)
("the Licensee")
Great Brighams Mead
Vastern Road
Reading
Berkshire
RG1 8DJ

to establish, install and use wireless telegraphy stations and/or wireless telegraphy apparatus as described in the schedule to this Licence (together "the Radio Equipment") subject to the terms set out below.

Licence term

20. This Licence shall continue in force until revoked by Ofcom or surrendered by the Licensee.

Licence variation and revocation

21. Pursuant to schedule 1, paragraph 8 of the Wireless Telegraphy Act 2006 (the "Act"), Ofcom may not revoke this Licence under schedule 1, paragraph 6 of the Act except:

(a) at the request, or with the consent, of the Licensee;

(b) if there has been a breach of any of the terms of this Licence;

(c) in accordance with schedule 1 paragraph 8(5) of the Act;

(d) if it appears to Ofcom to be necessary or expedient to revoke the Licence for the purpose of complying with a direction by the Secretary of State given to Ofcom under section 5 of the Act or section 5 of the Communications Act 2003;

(e) if, in connection with the transfer or proposed transfer of rights and obligations arising by virtue of the Licence, there has been a breach of any provision of

regulations made by Ofcom under the powers conferred by section 30 of the Act[19];

(f) for reasons related to the management of the radio spectrum, provided that in such case the power to revoke may only be exercised after at least five years' notice is given in writing (such notice period must not expire before 26 April 2041).

22. Ofcom may only revoke or vary this Licence by notification in writing to the Licensee and in accordance with schedule 1, paragraphs 6, 6A and 7 of the Act.

Transfer

23. This Licence may not be transferred. The transfer of rights and obligations arising by virtue of this Licence may however be authorised in accordance with regulations made by Ofcom under powers conferred by section 30 of the Act[20].

Changes to the Licensee Details

24. The Licensee shall give prior notice to Ofcom in writing of any proposed change to the Licensee's name and address as recorded in paragraph 1 of this Licence.

~~Spectrum Leasing~~

~~The Licensee may:~~

~~confer the benefit of the Licence (which is hereinafter referred to as a "lease") on another person (referred to as the "leaseholder") in respect of any wireless telegraphy station or wireless telegraphy apparatus to which the Licence relates;~~

~~in his contract with the leaseholder permit the leaseholder to confer the benefit of the Licence (hereinafter referred to as "sub-lease") on any other person ("sub-leaseholder"),~~

~~provided that the conditions set out in schedule 3 to this Licence are met.~~

Fees

25. From 27 April 2041 ~~T~~the Licensee shall each year pay to Ofcom the relevant fee as provided under section 12 of the Act and regulations made thereunder on or before the fee payment date shown above, or on or before such dates as shall be notified in writing to the Licensee.

26. The Licensee shall also pay interest to Ofcom on any amount which is due to Ofcom under the terms of this Licence or provided for in any regulations made by Ofcom under sections 12 or 13(2) of the Act from the date such amount falls due until the date of payment, at the then applicable Bank of England base rate. In accordance with section 15 of the Act any such amount and any such interest is recoverable by Ofcom.

[19] These are regulations on spectrum trading.

[20] See Ofcom's website for the latest position on spectrum trading and the types of trade which are permitted.

27. If the Licence is surrendered, revoked or varied, no refund, whether in whole or in part, of any amount which is due under the terms of this Licence, payable in accordance with the Regulations, or provided for in any regulations made by Ofcom under sections 12 and 13(2) of the Act will be made, except at the absolute discretion of Ofcom.

Radio equipment use

28. The Licensee shall ensure that the Radio Equipment is established, installed and used only in accordance with the provisions specified in the schedules to this Licence. Any proposal to amend any detail specified in any of the schedules to this Licence must be agreed with Ofcom in advance and implemented only after this Licence has been varied or reissued accordingly.

29. The Licensee shall ensure that the Radio Equipment is operated in compliance with the terms of this Licence and is used only by persons who have been authorised in writing by the Licensee to do so and that such persons are made aware of, and of the requirement to comply with, the terms of this Licence.

30. The Licensee must ensure that all Radio Equipment is established, installed, modified and used only in accordance with the provisions specified in schedule 4 (EMF Licence Condition) of this Licence.

Access and inspection

31. The Licensee shall permit a person authorised by Ofcom:

    (a) to have access to the Radio Equipment; and

    (b) to inspect this Licence and to inspect, examine and test the Radio Equipment,

    at any and all reasonable times or, when in the opinion of that person an urgent situation exists, at any time, to ensure the Radio Equipment is being used in accordance with the terms of this Licence.

Modification, restriction and closedown

32. Any person authorised by Ofcom may require the Radio Equipment or any part thereof, to be modified or restricted in use, or temporarily or permanently closed down immediately if in the opinion of the person authorised by Ofcom:

    (a) a breach of a term of the Licence has occurred; and/or

    (b) the use of the Radio Equipment is, or may be, causing or contributing to undue interference to the use of other authorised radio equipment.

33. Ofcom may require any of Radio Equipment to be modified or restricted in use, or temporarily closed down either immediately or on the expiry of such period as may be specified in the event of a national or local state of emergency being declared. Ofcom may only exercise this power after a written notice has been served on the Licensee or a general notice applicable to holders of a named class of licence has been published.

Geographical boundaries

34. Subject to the requirements of any coordination procedures notified to the Licensee pursuant to schedule 1 to this Licence, and excluding the areas set out in paragraph 17 of this Licence, the Licensee is authorised to establish, install and use the Radio Equipment in the United Kingdom. (The Licensee is not authorised to establish, install and use the Radio Equipment in the Channel Islands or the Isle of Man).

35. The areas excluded from this licence are the territorial sea and any inland waters adjacent to the territorial sea, but in the case of streams, rivers or other watercourses which form part of such inland waters they are only excluded where such stream, river or watercourse is more than 2km wide.

Interpretation

36. In this Licence:

(a) the establishment, installation and use of the Radio Equipment shall be interpreted as establishment and use of wireless telegraphy stations and installation and use of wireless telegraphy apparatus as specified in section 8(1) of the Act;

(b) the expression “interference” shall have the meaning given by section 115 of the Act;

(c) the expressions “wireless telegraphy station” and “wireless telegraphy apparatus” shall have the meanings given by section 117 of the Act;

(d) the expression “territorial sea” shall be determined in accordance with the Territorial Sea Act 1987;

(e) the expression “inland waters” shall have the meaning given by section 221(1) of the Water Resources Act 1991;

(f) the schedules form part of this Licence together with any subsequent schedule(s) which Ofcom may issue as a variation to this Licence at a later date; and

(g) the Interpretation Act 1978 shall apply to this Licence as it applies to an Act of Parliament.

Issued by Ofcom

Office of Communications

SCHEDULE 1 TO LICENCE NUMBER: 0823615

Schedule Date: 18 May 2021

Licence Category: Spectrum Access 3.6 GHz

Description of Radio Equipment

17. References in this schedule to the Radio Equipment are references to any wireless telegraphy station or wireless telegraphy apparatus that is established, installed and/or used under this schedule.

Interface Requirements for the Radio Equipment

18. Use of the Radio Equipment shall be in accordance with the following Interface Requirement:

IR 2097: Terrestrial systems capable of providing electronic communications services in the 3.4 to 3.8 GHz band.

Special conditions relating to the Radio Equipment

19.

(f) Subject to paragraph 3(b) of this schedule, during the period that this Licence remains in force, unless consent has otherwise been given by Ofcom, the Licensee shall compile and maintain accurate written records of the following details relating to the Radio Equipment:

vii) postal address (including post code);

viii) National Grid Reference, to at least 10m resolution;

ix) antenna height (above ground level), type, and boresight bearing east of true north (if applicable);

x) radio frequencies which the Radio Equipment uses; and

xi) Transmitted power expressed in dBm / 5 MHz EIRP per cell for non-AAS Radio Equipment; and

xii) Transmitted power expressed in dBm / 5 MHz TRP per cell for AAS Radio Equipment.

and the Licensee must produce these records if requested by any person authorised by Ofcom.

(g) The conditions relating to the keeping of records contained in sub-paragraphs 3(a)(i), (ii) and (iii) of this schedule shall not apply in respect of femtocell equipment and smart/intelligent low power repeater equipment.

(h) The conditions relating to the keeping of records contained in paragraph 3(a) of this schedule shall not apply in respect of licence exempt radio equipment.

(i) The Licensee shall submit to Ofcom copies of the records detailed in sub-paragraph 3(a) above at such intervals as Ofcom may notify to the Licensee.

(j) The Licensee shall submit to Ofcom in such manner and within such period as specified by Ofcom, such other information in relation to the Radio Equipment, or any wireless telegraphy station or wireless telegraphy apparatus which the Licensee is planning to use, as Ofcom may from time to time request. Such information may include, but is not limited to, information in relation to the radio frequency, transmitted power and date of first use for wireless telegraphy stations or wireless telegraphy apparatus to be established, installed or used within such timeframe and in such areas as Ofcom may reasonably request.

Coordination at frequency and geographical boundaries

20. The Licensee shall ensure that the Radio Equipment is operated in compliance with such coordination procedures as may be notified to the Licensee by Ofcom from time to time.

International cross-border coordination

21. The Licensee shall ensure that the Radio Equipment is operated in compliance with such cross-border coordination and sharing procedures as may be notified to the Licensee by Ofcom from time to time.

Cooperation between Licensees

22. In addition to complying with the specific transmission terms, conditions and limitations set out in this Licence, the Licensee must liaise and co-operate with other holders of licences in the 3410 MHz – 3800 MHz band (if necessary adjusting transmission power and other technical parameters of transmission) in such a way that harmful interference is not caused by one network deployment to that of another Licensee within the band.

Permitted Frequency Blocks

23. The Radio Equipment may only transmit within the following frequency bands (the "Permitted Frequency Blocks"):

3600 - 3680 MHz

Maximum power within the Permitted Frequency Blocks

24. Subject to any more restrictive limitations imposed by the coordination requirements notified by Ofcom in accordance with paragraphs 4 and 5 of this schedule, the power transmitted in the Permitted Frequency Blocks shall not exceed:

Radio Equipment	Maximum mean power
non-AAS base station[a]	65 dBm / 5 MHz EIRP per cell
AAS base station[a]	44 dBm / 5 MHz TRP per cell
Mobile or nomadic terminal station[b]	28 dBm TRP
Fixed or installed terminal station[b]	35 dBm / 5 MHz EIRP

[a] For femtocell base stations, power control must be applied to minimise interference to adjacent channels.
[b] The maximum mean power relates to the EIRP or TRP of a specific piece of Radio Equipment irrespective of the number of transmit antennas.

Maximum power of base stations outside the Permitted Frequency Blocks

25. When transmitting, the Licensee must either transmit in accordance with the condition in paragraph (a) or in accordance with the condition in paragraph (b) –

(c) The condition referred to is that the Licensee must transmit within the limits of the Permissive Transmission Mask and, if doing so, the Licensee must also transmit within the limits of transmission Frame Structure A.

(d) The condition referred to is that the Licensee must transmit within the limits of the Restrictive Transmission Mask, and, if doing so, it must also transmit and within the limits of transmission Frame Structure B.

26. The Permissive Transmission Mask means that –

for transmissions on the downlink frequencies, the maximum mean EIRP or TRP emanating from the Radio Equipment transmissions at any frequency outside the Permitted Frequency Blocks, but within 3410 – 3800 MHz, shall not exceed the following transitional and baseline requirements:

	Non-AAS dBm / 5 MHz EIRP per antenna	AAS dBm / 5 MHz TRP per cell	
-5 to 0 MHz offset from lower block edge 0 to 5 MHz offset from upper block edge	Min(PMax – 40, 21)	Min(PMax' – 40, 16)	
-10 to -5 MHz offset from lower block edge 5 to 10 MHz offset from upper block edge	Min(PMax – 43, 15)	Min(PMax' – 43, 12)	
Out of block baseline power limit (BS) < -10 MHz offset from lower block edge > 10 MHz offset from upper block edge	Min(PMax – 43, 13)	Min(PMax' – 43, 1)	

27. The Restrictive Transmission Mask means that –

for transmissions on the downlink frequencies, the EIRP emanating from the Radio Equipment transmissions at any frequency outside the Permitted Frequency Blocks, but within 3410 – 3800 MHz, shall not exceed the following baseline:

	non-AAS dBm / 5 MHz EIRP per cell*	AAS dBm / 5 MHz TRP per cell
Out of block baseline power limit (BS)	- 34	-43

28. Frame Structure A (also known as the "Preferred Frame Structure") means that:

(e) transmissions from the Licensee's base stations have a frame structure as shown in Figure 1. Timeslots (or subframes) 0, 2 to 5 and 7 to 9 must be allocated to Downlink (D) or Uplink (U) transmissions as indicated or may be left with no transmissions;

(f) the Licensee must ensure that the special subframe (S) in timeslots 1 and 6 have a structure that is compatible with TD-LTE special subframe configuration 6, also known as 9:3:2 (DwPTS: GP: UpPTS). For the avoidance of doubt, a special subframe structure is compatible where there are no uplink transmissions within the downlink pilot timeslot (DwPTS) or guard period (GP) and no downlink transmissions within the uplink pilot timeslot (UpPTS) or guard period (GP);

(g) timeslots must have a duration of 1 millisecond;

(h) the Licensee shall ensure that frames start at a common reference time so that all licensees' frames are aligned and transmissions synchronised;

Note: TD-LTE frame configuration 2 (3:1) is compatible with this frame structure, as are some 5G NR frame configurations. Other technologies are permitted provided that the requirements of 12(a) to 12(d) are met.

29. Frame Structure B (also known as the "Compatible Frame Structure") means that:

(a) transmissions from the Licensee's base stations must have a frame structure as shown in Figure 2. Timeslots (or subframes) 0 and 2 must be allocated to Downlink (D), or Uplink (U) transmissions as indicated;

(b) the Licensee must ensure that the special subframe (S) in timeslot 1 has a structure that is compatible with TD-LTE special subframe configuration 6, also known as 9:3:2 (DwPTS: GP: UpPTS). For the avoidance of doubt, a special subframe structure is compatible where there are no uplink transmissions within the downlink pilot timeslot (DwPTS) or guard period (GP) and no downlink transmissions within the uplink pilot timeslot (UpPTS) or guard period (GP);

(c) timeslots must have a duration of 1 millisecond;

(d) the Licensee shall ensure that frames start at a common reference time so that all licensees' frames are aligned and transmissions synchronised;

(e) timeslots with no transmission indicated may have no transmission or must be determined as a Downlink, Uplink or Special subframe as necessary in order to ensure compliance with paragraph 13(c) and 13(f);

(f) the Licensee must cooperate to minimise harmful sub-frame overlaps if different technologies are used. On rare occasions this may require the frame alignment or guard period to be slightly offset;

(g) for the avoidance of doubt all-downlink frame structures such as Supplementary Downlink (SDL) are not permitted.

Note: all current TD-LTE frame configurations are compatible with this frame structure, as are some 5G NR frame configurations. Other technologies are permitted provided that the requirements of 13(a) to 13(d) are met.

Figure 3: Frame Structure A

DL/UL ratio	Subframe number									
	0	1	2	3	4	5	6	7	8	9
3:1	D	S	U	D	D	D	S	U	D	D

Figure 4: Frame Structure B

DL/UL ratio	Subframe number									
	0	1	2	3	4	5	6	7	8	9
Any	D	S	U							

30. Irrespective of whether the Restrictive Transmission Mask or the Permissive Transmission Mask is being used, the EIRP or TRP emanating from the Radio Equipment transmissions at any frequency outside the Permitted Frequency Blocks shall not exceed the following additional band edge requirements:

	Non-AAS *dBm / MHz*[a] *EIRP per antenna*	AAS *dBm / MHz*[a] *TRP per cell*
Below 3390 MHz	-50	-52

[a] We note this level is defined in the Commission Decision 2019/235/EC as per MHz rather than per 5 MHz

	Non-AAS *dBm / 5 MHz EIRP per antenna*	AAS *dBm / 5 MHz TRP per cell*
3390 – 3400 MHz	Min(PMax – 43, 13)	Min(PMax' – 43, 1)
3400 – 3405 MHz	Min(PMax – 43, 15)	Min(PMax' – 43, 12)
3405 – 3410 MHz	Min(PMax – 40, 21)	Min(PMax' – 40, 16)
3800 – 3805 MHz	Min(PMax – 40, 21)	Min(PMax' – 40, 16)
3805 – 3810 MHz	Min(PMax – 43, 15)	Min(PMax' – 43, 12)
3810 – 3840 MHz	Min(PMax – 43, 13)	Min(PMax' – 43, 1)
Above 3840 MHz	-2	-14

Small Cells

31. The Licensee is required to comply with the Permissive Transmission Mask as set out in paragraph 10 of this schedule but is not required to comply with the frame structure requirements set out in paragraphs 12 or 13 above, for:

(c) Indoor Domestic Small Cells; or

(d) Indoor Non-domestic Small Cells, except where another licensee demonstrates that they are suffering harmful interference as a result.

If another licensee demonstrates that they are suffering harmful interference as a result of an Indoor Non-domestic Small Cell, the Indoor Non-domestic Small Cell must comply with the requirements set out in paragraphs 9 and 12 above, where Frame Structure A is used or those requirements set out in both paragraphs 9 and 13 above where Frame Structure B is used.

Interpretation of terms in this schedule

32. In this schedule:

(z) "5G NR" means 5G New Radio and refers to the air interface that has been developed by 3GPP for fifth generation (5G) mobile radio networks. This air interface defines how 5G base stations and user devices both transmit and receive radio signals using spectrum;

(aa) "AAS" means active antenna system. An AAS is a base station and antenna system where the amplitude and / or phase between antenna elements is continually adjusted resulting in an antenna pattern that varies in response to short term changes in the radio environment. This is not intended to include long term beam shaping such as fixed electrical down tilt. In AAS base stations the antenna system is integrated as part of the base station system or product;

(bb) "dBm" means the power level in decibels (logarithmic scale) referenced against 1milliwatt (i.e. a value of 0 dBm is 1 milliwatt);

(cc)"Downlink" means transmissions from a base station to a terminal station (handset);

(dd) "EIRP" means the equivalent isotropically radiated power. This is 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), measured during the "on" part of the transmission;

(ee) "femtocell" means a base station which operates at a power not exceeding 24 dBm EIRP per carrier, and which is or will be used only by and under the control of the Licensee, following the establishment of a telecommunications link between the femtocell and a network of the Licensee;

(ff) "Fixed or installed" means used or installed at specific fixed points;

(gg) Indoor" means a location inside a building or place in which the shielding will typically provide the necessary attenuation to protect wireless telegraphy against harmful interference;

(hh) “Indoor Domestic Small Cell” means a base station with an EIRP of less than or equal to 24dBm per 20 MHz carrier that is located within a residential property;

(ii) “Indoor Non-domestic Small Cell” means a base station with an EIRP of less than or equal to 24dBm per 20 MHz carrier that is located indoors but not within a residential property;

(jj) "IR" means a United Kingdom Radio Interface Requirement notified by Ofcom in accordance with Article 8 of Directive 2014/53/EU of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment (known as the Radio Equipment Directive);

(kk)“lower block edge” means, in relation to each Permitted Frequency Block, the lowest frequency in that Permitted Frequency Block;

(ll) “mobile or nomadic” means intended to be used while in motion or during halts at unspecified points;

(mm) “non-AAS” means a piece of Radio Equipment which is not an AAS;

(nn) “per antenna” means per radiating unit/component (irrespective of the number of radiating elements that make up that unit/component);

(oo) “per cell” means per specific piece of Radio Equipment. For a multi-sector base station, per cell refers to each one of the individual sectors irrespective of the number of transmit antennas;

(pp) “Permitted Frequency Blocks” has the meaning given to it in paragraph 7 of this schedule;

(qq) “PMax” is the maximum mean power for the base station in question if it is using a non-AAS. This is measured as EIRP per carrier and determined on a per antenna basis;

(rr) “PMax’” is the maximum mean power for the base station in question if it is using an AAS. This is measured as TRP per carrier and determined on a per cell basis;

(ss)“smart/intelligent low power repeater” means a repeater which operates with power not exceeding 24 dBm EIRP per carrier, which may be established by customers of the Licensee who have written agreements with the Licensee and:

- The Licensee has ultimate control of the repeater, i.e. each individual repeater can be disabled remotely by the Licensee;
- The repeater operates only on the Licensee’s frequencies and with their valid Public Land Mobile Network Identifier;
- Must not cause undue interference to other spectrum users; and
- The repeater only transmits on the uplink timeslot when actively carrying a call (voice, video or data) or signalling from serviced handsets.

(tt) "TDD" means the application of time-division multiplexing to separate uplink and downlink signals;

(uu) "TD-LTE" means the TDD variant of LTE (Long Term Evolution or 4G technology);

(vv)"TRP" means the total radiated power. This is the integral of the power transmitted in different directions over the entire radiation sphere, measured during the on part of the transmission;

(ww) "Uplink" means transmissions from a terminal station (handset) to a base station; and

(xx)"upper block edge" means, in relation to each Permitted Frequency Block, the highest frequency in that Permitted Frequency Block.

SCHEDULE 2 TO LICENCE NUMBER: 0823615

Schedule Date: 18 May 2021

Licence Category: Spectrum Access 3.6 GHz

Description of Radio Equipment

In this Licence, the Radio Equipment means any station apparatus that transmits in accordance with the requirements of paragraphs 6 and 7 of this schedule.

Interface Requirements for the Radio Equipment use

Use of the Radio Equipment shall comply with the following Interface Requirements:

IR 2015.1 to IR 2015.3: Spectrum Access in the 3400 MHz to 4009 MHz band.

Special conditions relating to the operation of the Radio Equipment

During the period that this Licence remains in force, the Licensee shall compile and maintain accurate written records of:

the following details relating to the Radio Equipment where the Radio Equipment spectral density exceeds 25 dBm/MHz or total e.i.r.p. exceeds 30 dBm:

postal address;

National Grid reference (to 100 metres resolution);

antenna height (above ground level) and type, and bearing east of true north;

radio frequencies used by the Radio Equipment; and

a statement of the number of subscribing customers,

and the Licensee must produce these records if requested by a person authorised by Ofcom.

The Licensee shall inform Ofcom of the address of the premises at which this Licence and the information detailed at sub-paragraph 3(a) of this schedule shall be kept.

The Licensee must submit to Ofcom copies of the records detailed in sub-paragraph 3(a) of this schedule at such intervals as Ofcom shall notify to the Licensee.

The Licensee must also submit to Ofcom in such manner and at such times as Ofcom requests all information relating to the establishment, installation or use of the Radio Equipment as is reasonably requested for the purpose of verifying compliance with this Licence or for statistical purposes.

The Licensee must ensure that the Radio Equipment is established and installed only for terrestrial use.

Co-ordination

The Licensee must operate the Radio Equipment in accordance with any co-ordination procedure notified by Ofcom.

Permitted frequency band

The Radio Equipment may only transmit within the following frequency band:

3925 - 4009 MHz

Maximum permissible e.i.r.p.

The Licensee shall ensure that the Radio Equipment conforms to the following e.i.r.p. limits:

Maximum e.i.r.p. +53 dBm/MHz

Except for mobile terminals, which shall conform to the following e.i.r.p. limit:

Maximum e.i.r.p. 25 dBm/MHz

In addition to this, the Licensee may be required to take additional measures to ensure that the establishment, installation and use of the Radio Equipment does not cause undue interference to receiving stations and/or radio apparatus operated by a neighbouring licensee.

Permissible Out of Block Emissions

For Radio Equipment operating at powers above 25dBm/MHz deployed before 1st January 2010 the Licensee shall ensure that Out of Block shall conform to the following:

Frequency offset measured from the edges of the frequency bands specified in section 5	Maximum radiated spectral power density EIRP (dBm/MHz)
0	53
0	44
0 < Δf < 0.6	44 – 41.67*Δf
0.6	19
1	19
1 < Δf < 2	19 - 20*(Δf - 1)

~~≥ 2~~	~~-1~~

~~For Radio Equipment operating at powers above 25dBm/MHz deployed after 1st January 2012 the Licensee shall ensure that Out of Block shall conform to the following:~~

~~Frequency offset measured from the edges of the frequency bands specified in section 5~~	~~Maximum radiated spectral power density EIRP (dBm/MHz)~~
~~0~~	~~53~~
~~0~~	~~44~~
~~0 < Δf < 0.6~~	~~44 – 41.67*Δf~~
~~0.6~~	~~19~~
~~1~~	~~19~~
~~1 < Δf < 2~~	~~19 - 20*(Δf - 1)~~
~~2~~	~~-1~~
~~5~~	~~-1~~
~~5~~	~~-15.6~~
~~5 < Δf < 6.5~~	~~–15.6 – 10.27*(Δf - 5)~~
~~6.5~~	~~-31~~
~~6.5 < Δf < 9.5~~	~~–31 – 4*(Δf - 6.5)~~
~~≥ 9.5~~	~~-43~~

~~The Licensee shall ensure that Out of Block Emission from the Radio Equipment operating at powers up to 25dBm/MHz shall conform to the following:~~

~~Frequency offset measured from the edges of the frequency bands specified in section 5~~	~~Maximum radiated spectral power density EIRP (dBm/MHz)~~
~~0~~	~~13.7~~
~~0 < Δf < 1~~	~~13.7 - 15*Δf~~
~~1~~	~~-1.3~~
~~1 < Δf < 2.5~~	~~-1.3 - 1.27*(Δf - 1)~~
~~2.5~~	~~-3.2~~
~~2.5 < Δf < 7.5~~	~~-3.2 - 0.46*(Δf - 2.5)~~
~~7.5~~	~~-5.5~~
~~7.5 < Δf < 9.5~~	~~-5.5 - 5*(Δf - 7.5)~~

~~≥ 9.5~~	~~-15.5~~

~~Interpretation~~

~~In this schedule:~~

~~"dBm" means the power level in decibels (logarithmic scale) referenced against 1 milliwatt (i.e. a value of 0 dBm is 0.001 W);~~

~~"e.i.r.p." means the equivalent isotropically radiated power. This is 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);~~

~~"IR" means a United Kingdom Radio Interface Requirement notified by Ofcom in accordance with Directive 2014/53/EU of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment (known as the Radio Equipment Directive);~~

~~"Out of Block Emission" means radio frequency emissions generated by the Radio Equipment and radiated into the frequency bands adjacent (in terms of frequency) to the Licensee's Permitted Frequency Bands;~~

~~"Maximum radiated spectral power density" (of Out of Block Emissions) is the product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna that is outside the Licensee's Frequency Block;~~

~~Ofcom~~

SCHEDULE 3 TO LICENCE NUMBER: 0823615

Schedule Date: 18 May 2021

Licence Category: Spectrum Access 3.6 GHz

Spectrum Leasing

Grant of lease

The Licensee may confer the benefit of the Licence (which is hereinafter referred to as a "lease") on another person (referred to as the "leaseholder) in respect of any wireless telegraphy station or wireless telegraphy apparatus to which the Licence relates, provided that the conditions in this schedule are met.

Conditions

The conditions are –

L1. The Licensee may only confer the benefit of the Licence on one or more than one leaseholder for –

any geographical area forming part of the geographical area in which the Licensee is authorised to establish, install or use wireless telegraphy stations or apparatus under this Licence; and

for any frequency range forming part of the frequency band which the Licensee is authorised to use.

L2. The Licensee shall remain responsible for all obligations under the Licence (including without limitation the obligations to pay licence fees in accordance with clause 8 of this Licence).

L3. If the Licensee –

transfers his rights and obligations under the Licence by way of spectrum trade; or

receives a notice of revocation from Ofcom revoking his Licence, the lease (and any sub-lease) shall automatically extinguish.

L4. If Ofcom varies this licence in such a way that the provisions in condition 1 are no longer satisfied in respect of a lease which has been granted (or any sub-lease made by the leaseholder), that lease (or sub-lease) shall automatically extinguish.

L5. The licensee must inform the leaseholder and any sub-leaseholder immediately when his Licence terminates (regardless of the reason for such termination).

L6. The Licensee must inform the leaseholder (and any sub-leaseholder) that it proposes to apply for a spectrum trade, prior to any such application being made to Ofcom.

~~L7. The Licensee must ensure that the use of Radio Equipment by the leaseholder (and any sub-leaseholder) complies with the terms, provisions and limitations of this licence.~~

~~L8. The Licensee must inform the leaseholder in writing of the following matters before use of the radio equipment commences:~~

~~the terms, provision and limitations of the Licence that governs the establishment, installation and use of the Radio Equipment;~~

~~that failure to meet the terms, provisions and limitations of this licence may be a criminal offence;~~

~~that failure to meet the terms, provisions and limitations of this Licence may also result in close down of the Radio Equipment.~~

~~L9. The Licensee must have a written contract with the leaseholder containing the terms of the lease and must make this available to Ofcom immediately on request.~~

~~L10. The Licensee must maintain records at all times of the persons to whom he has granted a lease and any persons who have been granted a sub-lease under this Licence.~~

~~L11. The Licensee must make these records (and any other relevant information) immediately available to Ofcom on request.~~

~~L12. The Licensee must ensure that one of the terms of the written contract is that both parties are bound by a dispute resolution procedure that provides for the prompt and satisfactory resolution of disputes with or between the holders of leases or any sub-leases under this Licence, including any relating to interference management.~~

~~L13. If Ofcom investigates interference management issues which arise as a result of a complaint to Ofcom, and if both the person which is the subject of any undue interference caused and the source of any undue interference caused are the leaseholder, sub-leaseholders or the Licensee himself, Ofcom will charge the Licensee (and the Licensee shall pay) Ofcom's costs which relate to the investigation.~~

~~L14. The Licensee must comply with all instructions given by Ofcom (whether verbal or in writing) which relate to the Licence or the use of the frequency band, and ensure that any leaseholder any sub-leaseholder are immediately informed and also comply with these instructions.~~

~~Grant of sub-lease~~

~~The Licensee may in his contract with the leaseholder permit the leaseholder to confer the benefit of the Licence (hereinafter referred to as "sub-lease") on any other person ("sub-leaseholder") provided that the conditions in this schedule are met.~~

~~L15. The Licensee must –~~

~~prohibit the sub-leaseholder from further conferring the benefit of the Licence on any other third party; and~~

~~ensure that the sub-leaseholder is made aware of that prohibition.~~

~~L16. The Licensee must procure that the terms of any such permission are contained in his contract with his leaseholder.~~

~~L17. The Licensee must procure that the written contract between the leaseholder and the sub-leaseholder containing the terms of the lease is made available to Ofcom immediately on request.~~

~~L18. The Licensee must require in his contract that the leaseholder informs him immediately of any sub-lease which has taken place.~~

~~L19. The sub-lease may only confer the benefit of the Licence on one or more than one such person for –~~

~~any geographical area forming part of the geographical area in which the Licensee is authorised to establish, install or use wireless telegraphy stations or apparatus under this Licence; and~~

~~for any frequency range forming part of the frequency band which the Licensee is authorised to use.~~

~~L20. The Licensee shall remain responsible for all obligations under the Licence (including without limitation the obligations to pay licence fees in accordance with clause 8 of this Licence).~~

~~L21. The Licensee shall procure that the sub-leaseholder is informed of the following matters in writing before use of the radio equipment commences:~~

~~the terms, provision and limitations of the Licence that governs the establishment, installation and use of the Radio Equipment;~~

~~that failure to meet the terms, provisions and limitations of this Licence may be a criminal offence;~~

~~that failure to meet the terms, provisions and limitations of this Licence may also result in close down of the Radio Equipment.~~

~~Ofcom~~

SCHEDULE 4 2 TO LICENCE NUMBER: 0823615

EMF Licence Condition

Schedule Date: 18 May 2021

Licence category: Spectrum Access 3.6 GHz

Sites which are not shared with another licensee

9. The Licensee shall only establish, install, modify or use Relevant Radio Equipment if the total electromagnetic field exposure levels produced by the Licensee's On-Site Radio Equipment do not exceed the basic restrictions[21] in the relevant tables for general public exposure identified in the ICNIRP Guidelines[22] in any area where a member of the general public is or can be expected to be present when transmissions are taking place.

Sites which are shared with another licensee

10. In the case of a shared site where the Shared Site Exemption applies to the Licensee, the Licensee shall comply with paragraph 1 above.

11. In the case of a shared site where the Shared Site Exemption does not apply to the Licensee, the Licensee shall only establish, install, modify or use the Relevant Radio Equipment if:

    (c) the total electromagnetic field exposure levels produced by the Licensee's On-Site Radio Equipment, together with

    (d) the total electromagnetic field exposure levels produced by all other wireless telegraphy stations and wireless telegraphy apparatus operated by another licensee on the same site for which the Licensee can reasonably assume that a Shared Site Exemption does not apply,

    do not exceed the basic restrictions[23] in the relevant tables for general public exposure identified in the ICNIRP Guidelines[24] in any area where a member of the general public is or can be expected to be present when transmissions are taking place.

[21] Compliance with the reference levels for general public exposure identified in the ICNIRP Guidelines will ensure compliance with the basic restrictions.
[22] The relevant tables for general public exposure are identified in Ofcom's "Guidance on EMF Compliance and Enforcement".
[23] Compliance with the reference levels for general public exposure identified in the ICNIRP Guidelines will ensure compliance with the basic restrictions.
[24] The relevant tables for general public exposure are identified in Ofcom's "Guidance on EMF Compliance and Enforcement".

Emergency Situations

12. The obligations in paragraphs 1, 2 and 3 above will not apply if the Relevant Radio Equipment is being used for the purpose of seeking emergency assistance or reporting and responding to an emergency situation (in the vicinity of that situation) including for search and rescue activities and maritime emergency communications[25].

Relationship with authorised transmission levels

13. The Licensee shall comply with paragraphs 1, 2 and 3 above notwithstanding the maximum transmission levels authorised in the Licence.

Records

14. The Licensee shall keep, or shall procure that a third party shall keep, and shall make available to Ofcom on request, records (including the type of records identified in Ofcom's "Guidance on EMF Compliance and Enforcement") that demonstrate how it has complied with paragraphs 1, 2 and 3 above when Relevant Radio Equipment is established, installed, modified or used.

Ofcom's "Guidance on EMF Compliance and Enforcement"

15. When evaluating its compliance with paragraphs 1, 2 and 3 above, the Licensee shall take into account Ofcom's "Guidance on EMF Compliance and Enforcement" that is in force at the relevant time.

Interpretation

16. In this schedule:

(m) **"dBi"** means the ratio in dB (decibel) when comparing the gain of the antenna to the gain of an isotropic antenna. An isotropic antenna is a theoretical antenna which radiates power uniformly in all directions;

(n) **"EIRP"** means equivalent isotropically radiated power which is the product of the power supplied to an antenna and the absolute or isotropic antenna gain in a given direction relative to an isotropic antenna;

(o) **"ERP"** means effective radiated power which is the product of the power supplied to an antenna and its gain in a given direction relative to a half-wave dipole;

(p) "**general public**" means any person who is not: (a) the Licensee, owner, operator or installer of the Relevant Radio Equipment; or (b) acting under a contract of employment or otherwise acting for purposes connected with

[25] Further information on emergency situations in set out in Ofcom's "Guidance on EMF Compliance and Enforcement".

their trade, business or profession or the performance by them of a public function;[26]

(q) **"ICNIRP Guidelines"** means the version of the Guidelines published by the International Commission on Non-Ionizing Radiation Protection for limiting exposure to electromagnetic fields which are identified in Ofcom's "Guidance on EMF Compliance and Enforcement" that is in force at the relevant time.[27]

(r) **"Licensee's On-Site Radio Equipment"** means the Relevant Radio Equipment and any other wireless telegraphy station(s) and wireless telegraphy apparatus on the same site which transmits at powers higher than 10 Watts EIRP or 6.1 Watts ERP.[28]

(s) **"Relevant Radio Equipment"** means all the Radio Equipment that is authorised by this Licence to transmit at powers higher than 10 Watts EIRP or 6.1 Watts ERP.

(t) **"Shared Site Exemption"** means any of the following three situations apply on a shared site in relation to the Licensee's or another licensee's wireless telegraphy station(s) or wireless telegraphy apparatus that is authorised to transmit at powers higher than 10 Watts EIRP or 6.1 Watts ERP:

- The first situation is that all of the licensee's wireless telegraphy station(s) or wireless telegraphy apparatus on a shared site do not transmit at a combined total radiated power in any particular direction[29] that is higher than 100 Watts EIRP or 61 Watts ERP;[30]
- The second situation is that the total electromagnetic field exposure levels produced by the licensee's wireless telegraphy station(s) or

[26] There is pre-existing health and safety legislation which already requires employers to protect workers from exposure to electromagnetic fields ("EMF") including the following legislation specifically relating to EMF (as amended from time to time): The Control of Electromagnetic Fields at Work Regulations 2016, The Control of Electromagnetic Fields at Work Regulations (Northern Ireland) 2016 and The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Electromagnetic Fields) Regulations 2016.

[27] Ofcom's "Guidance on EMF Compliance and Enforcement" will initially require the Licensee to comply with the ICNIRP Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz), published in: Health Physics 74(4):494-522, dated April 1998 and available at: https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf ("1998 Guidelines") or the ICNIRP Guidelines for limiting exposure to electromagnetic fields (100 KHz to 300 GHz), published in: Health Physics 118(5): 483–524; 2020 and available at: https://www.icnirp.org/cms/upload/publications/ICNIRPrfgdl2020.pdf ("2020 Guidelines"). However, once work on the relevant standards explaining the methodology for assessing compliance with the 2020 Guidelines has progressed sufficiently, Ofcom will publish a public consultation on updating its "Guidance on EMF Compliance and Enforcement" to explain that going forward Ofcom will be requiring the Licensee to comply with the 2020 Guidelines only. Following this public consultation, Ofcom will publish an updated version of Ofcom's "Guidance on EMF Compliance and Enforcement" on its website. Ofcom will follow the same process for any subsequent versions of the ICNIRP Guidelines.

[28] 10 Watts EIRP is equivalent to 6.1 Watts ERP. In linear units EIRP (W) = 1.64 x ERP (W); in decibels EIRP (dB) = ERP (dB) + 2.15. Ofcom's "Guidance on EMF Compliance and Enforcement" explains how the Licensee can determine if wireless telegraphy station(s) or wireless telegraphy apparatus "transmits at powers higher than 10 Watts EIRP or 6.1 Watts ERP".

[29] For the purpose of this situation, the combined total radiated power is a simple sum of the radiated powers (in EIRP or ERP) of all of the licensee's wireless telegraphy station(s) or wireless telegraphy apparatus on the shared site that transmits signals covering the same or overlapping areas.

[30] 100 Watts EIRP is equivalent to 61 Watts ERP.

wireless telegraphy apparatus in any area where a member of the general public is or can be expected to be present when transmissions are taking place is no more than 5% of the basic restrictions or 5% of the reference levels in the relevant tables for general public exposure identified in the ICNIRP Guidelines;[31]

- The third situation is where the licensee's wireless telegraphy station or wireless telegraphy apparatus has an antenna gain that is equal to or higher than 29 dBi and has a fixed beam;

(u) **"shared site"** means a site that is shared by the Licensee and at least one other licensee for the purposes of establishing, installing, modifying or using wireless telegraphy stations or wireless telegraphy apparatus;

(v) **"site"** means a physical structure, building, vehicle or moving platform;

(w) **"wireless telegraphy apparatus"** has the meaning given to it in section 117 of the Wireless Telegraphy Act 2006; and

(x) **"wireless telegraphy station"** has the meaning given to it in section 117 of the Wireless Telegraphy Act 2006.

Ofcom

[31] The relevant tables for general public exposure are identified in Ofcom's "Guidance on EMF Compliance and Enforcement".

A2. Draft fee regulations

STATUTORY INSTRUMENTS

2022 No.

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Licence Charges for the 3.4 GHz Frequency Band and the 3.6 GHz Frequency Band) Regulations 2022

Made - - - -	***
Laid before Parliament	***
Coming into force	***

The Office of Communications ("OFCOM") make the following Regulations in exercise of the powers conferred by sections 12, 13(2) and 122(7) 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 (Licence Charges for the 3.4 GHz Frequency Band and the 3.6 GHz Frequency Band) Regulations 2022.

Interpretation

2. In these Regulations—

"MHz" means megahertz;

"OFCOM" means the Office of Communications;

"3.4 GHz frequency band" means the frequencies from 3480.0 to 3500.00 MHz and 3580.0 to 3600 MHz; and

"3.6 GHz frequency band" means the frequencies from 3600.0 to 3680.0 MHz.

(a) 2006 c. 36

Revocation

3. The Wireless Telegraphy (Licence Charges for the 3.4 GHz Frequency Band and the 3.6 GHz Frequency Band) Regulations 2019 are hereby revoked.

Licence charges payable for the 3.4 GHz frequency band

4. — (1) On [**date to be specified in final regulations**] the holder of a wireless telegraphy licence of the Spectrum Access 3.4 GHz licence class authorising the use of frequencies in the 3.4 GHz band shall pay to OFCOM the amount calculated in accordance with paragraph (2) and (3).

(2) The formula to calculate the total sum mentioned in paragraph (1) is—

$S = £$**[278,186,937, updated figure to be specified in the final regulations]** $x\ (CPI_t \div CPI_o)$;

Where —

"S" means the total sum;

"CPI_t" means the most recent CPI value that is available on **[the payment date specified in regulation 4(1)**];

"CPI_0" means the CPI value that is available on 30 April 2022;

"CPI value" means the number given in respect of that month in the monthly all items consumer prices index published by the Statistics Board.

(3) If the total sum calculated in accordance with paragraph (2) is a fraction of a whole number, it shall be rounded down to the nearest whole number.

Licence charges payable for the 3.6 GHz frequency band

5. — (1) On [**date to be specified in the final regulations**] the holder of a wireless telegraphy licence of the Spectrum Access 3.6 GHz licence class authorising the use of frequencies in the 3.6 GHz band shall pay to OFCOM the amount calculated in accordance with paragraph (2) and (3).

(2) The formula to calculate the total sum mentioned in paragraph (1) is—

$S = £$**[292,924,068, updated figure to be specified in the final regulations]** $x\ (CPI_t \div CPI_o)$;

Where —

"S" means the total sum

"CPI_t" means the most recent CPI value that is available on **[the payment date specified in regulation 5(1)**];

"CPI_0" means the CPI value that is available on 30 April 2022;

"CPI value" means the number given in respect of that month in the monthly all items consumer prices index published by the Statistics Board.

(3) If the total sum calculated in accordance with paragraph (2) is a fraction of a whole number, it shall be rounded down to the nearest whole number.

[Name]
Group Director, Spectrum Group
[Date] Office of Communications

EXPLANATORY NOTE

(This note is not part of the Order)

These Regulations set the level of charges payable to OFCOM in respect of the licences of Spectrum Access 3.4 GHz licence class granted under section 8 of the Wireless Telegraphy Act 2006 (c.36) for the use of the frequencies in the bands 3480-3500.0 MHz and 3580.0-3600.0 MHz.

These Regulations also set the level of charges payable to OFCOM in respect of the licences of Spectrum Access 3.6 GHz licence class granted under section 8 of the Wireless Telegraphy Act 2006 (c.36) for the use of the frequencies in the band 3600.0-3680.0 MHz.

Regulation 3 removes the charges payable by holders of a Spectrum Access 3.5 GHz licence for the use of the frequencies in the bands 3480-3500.0 MHz and 3580.0-3600.0 MHz, and the charges payable by holders of a Spectrum Access 3.6 GHz licence for the use of the frequencies in the band 3600.0-3680.0 MHz prescribed by the Wireless Telegraphy (Licence Charges for the 3.4 GHz Frequency Band and the 3.6 GHz Frequency Band) Regulations 2019.

Regulation 4 prescribes a one-off fee payable on **[date]** by the holder of a Spectrum Access 3.4 GHz licence authorising the use of the frequencies in the bands 3480-3500.0 MHz and 3580.0-3600.0 MHz.

Regulation 5 prescribes a one-off fee payable on **[date]** by the holder of a Spectrum Access 3.6 GHz licence for the use of the frequencies in the band 3600.0-3680.0 MHz.

A regulatory impact assessment of the effect of these Regulations has been prepared. Copies of this assessment have been placed in the library of the Houses of Parliament.

A3. Responding to this consultation

How to respond

A3.1 Ofcom would like to receive views and comments on the issues raised in this document, by 5pm on 5 July 2022.

A3.2 You can download a response form from https://www.ofcom.org.uk/consultations-and-statements/category-2/aligning-licence-terms-in-the-3.4-3.8-ghz-band. You can return this by email or post to the address provided in the response form.

A3.3 If your response is a large file, or has supporting charts, tables or other data, please email it to 3.4-3.8.licence.alignment@ofcom.org.uk, as an attachment in Microsoft Word format, together with the cover sheet. This email address is for this consultation only.

A3.4 Responses may alternatively be posted to the address below, marked with the title of the consultation:

Spectrum Policy and Analysis
Ofcom
Riverside House
2A Southwark Bridge Road
London SE1 9HA

A3.5 We welcome responses in formats other than print, for example an audio recording or a British Sign Language video. To respond in BSL:

- Send us a recording of you signing your response. This should be no longer than 5 minutes. Suitable file formats are DVDs, wmv or QuickTime files. Or
- Upload a video of you signing your response directly to YouTube (or another hosting site) and send us the link.

A3.6 We will publish a transcript of any audio or video responses we receive (unless your response is confidential)

A3.7 We do not need a paper copy of your response as well as an electronic version. We will acknowledge receipt if your response is submitted via the online web form, but not otherwise.

A3.8 You do not have to answer all the questions in the consultation if you do not have a view; a short response on just one point is fine. We also welcome joint responses.

A3.9 It would be helpful if your response could include direct answers to the questions asked in the consultation document. The questions are listed at Annex 6. It would also help if you could explain why you hold your views, and what you think the effect of Ofcom's proposals would be.

A3.10 If you want to discuss the issues and questions raised in this consultation, please contact Reuben Braddock by email at 3.4-3.8.licence.alignment@ofcom.org.uk.

Confidentiality

A3.11 Consultations are more effective if we publish the responses before the consultation period closes. In particular, this can help people and organisations with limited resources or familiarity with the issues to respond in a more informed way. So, in the interests of transparency and good regulatory practice, and because we believe it is important that everyone who is interested in an issue can see other respondents' views, we usually publish all responses on the Ofcom website as soon as we receive them.

A3.12 If you think your response should be kept confidential, please specify which part(s) this applies to, and explain why. Please send any confidential sections as a separate annex. If you want your name, address, other contact details or job title to remain confidential, please provide them only in the cover sheet, so that we don't have to edit your response.

A3.13 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and try to respect it. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.

A3.14 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's intellectual property rights are explained further in our Terms of Use.

Next steps

A3.15 Following this consultation period, Ofcom plans to publish a statement in Summer 2022.

A3.16 If you wish, you can register to receive mail updates alerting you to new Ofcom publications.

Ofcom's consultation processes

A3.17 Ofcom aims to make responding to a consultation as easy as possible. For more information, please see our consultation principles in Annex 4.

A3.18 If you have any comments or suggestions on how we manage our consultations, please email us at consult@ofcom.org.uk. We particularly welcome ideas on how Ofcom could more effectively seek the views of groups or individuals, such as small businesses and residential consumers, who are less likely to give their opinions through a formal consultation.

A3.19 If you would like to discuss these issues, or Ofcom's consultation processes more generally, please contact the corporation secretary:

Corporation Secretary
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA
Email: corporationsecretary@ofcom.org.uk

A4. Ofcom's consultation principles

Ofcom has seven principles that it follows for every public written consultation:

Before the consultation

A4.1 Wherever possible, we will hold informal talks with people and organisations before announcing a big consultation, to find out whether we are thinking along the right lines. If we do not have enough time to do this, we will hold an open meeting to explain our proposals, shortly after announcing the consultation.

During the consultation

A4.2 We will be clear about whom we are consulting, why, on what questions and for how long.

A4.3 We will make the consultation document as short and simple as possible, with a summary of no more than two pages. We will try to make it as easy as possible for people to give us a written response. If the consultation is complicated, we may provide a short Plain English / Cymraeg Clir guide, to help smaller organisations or individuals who would not otherwise be able to spare the time to share their views.

A4.4 We will consult for up to ten weeks, depending on the potential impact of our proposals.

A4.5 A person within Ofcom will be in charge of making sure we follow our own guidelines and aim to reach the largest possible number of people and organisations who may be interested in the outcome of our decisions. Ofcom's Consultation Champion is the main person to contact if you have views on the way we run our consultations.

A4.6 If we are not able to follow any of these seven principles, we will explain why.

After the consultation

A4.7 We think it is important that everyone who is interested in an issue can see other people's views, so we usually publish all the responses on our website as soon as we receive them. After the consultation we will make our decisions and publish a statement explaining what we are going to do, and why, showing how respondents' views helped to shape these decisions.

A5. Consultation coversheet

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing ☐

Name/contact details/job title ☐

Whole response ☐

Organisation ☐

Part of the response ☐

If there is no separate annex, which parts? _____

_____

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name Signed (if hard copy)

A6. Consultation questions

Question 1: Do you agree with our proposal to align the terms of the UKB licences with the terms of auctioned licences in the 3.4-3.8 GHz band?

Question 2: Do you agree with our proposed methodology for calculating the revised licence payments for UKB licences?

Question 3: Do you have any comments on the draft revised UKB licences or the draft fee regulations?