

# Mobile phone repeaters

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## Changes to the Wireless Telegraphy (Mobile Repeater) (Exemption) Regulations 2022

[Welsh overview available](#)

### Statement

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We have published the below Annex's separately:

[A3 - UK Interface Requirement 2102](#)

[A4 - Voluntary Testing Standard 2102](#)

# 1. Overview

- 1.1 Self-installed repeater devices can sometimes provide a good option for people looking to boost indoor mobile phone signals in places where network coverage is poor. The devices can be installed and used without the need for a wireless telegraphy licence – provided they comply with the terms, provisions and limitations set out in the [2022 Regulations](#).
- 1.2 At present, the Regulations state that **static indoor repeaters** designed to boost a 4G mobile signal must also repeat a 2G and/or 3G signal, or support the 2G/3G frequency bands used by mobile network operators (MNOs). This is to ensure that a 2G or 3G ‘999’ emergency signal is always available, if needed.
- 1.3 However, the MNOs are starting to switch off their 3G signals to concentrate on delivering 4G and 5G services. We expect them to also switch off their 2G signals in future. In these circumstances, we felt it was appropriate to consider whether the 2G/3G requirement, originally introduced in 2018, remains necessary and proportionate.
- 1.4 In October 2023 we published a [consultation](#) proposing to remove the requirement for 4G repeaters to also repeat 2G/3G signals.
- 1.5 At the same time, we proposed to update the technical requirements for **in-vehicle mobile repeaters** to enable them to amplify some 5G signals, reflecting provisions already in place for static indoor repeaters.
- 1.6 The consultation included formal statutory notice of our intention to make new regulations under the Wireless Telegraphy Act 2006 (the ‘WTA’) to reflect these proposals, subject to consideration of stakeholder responses.

## What we have decided – in brief

We have decided to:

- Remove the requirement for indoor repeaters that boost a 4G signal to also carry a 2G and/or 3G signal or frequency in order to be licence-exempt. This will allow the installation and use of 4G-only repeaters, subject to compliance with the remaining technical conditions included in the licence exemption regulations.
- Update the 2022 Regulations and associated Interface Requirements to enable in-vehicle mobile repeaters to amplify signals in the 700 MHz band, and to make them technology neutral. This enables them to repeat 5G signals in the bands included in the Interface Requirement.

To implement these changes, we have made new regulations under the WTA to amend the 2022 Regulations, and will update our accompanying Interface Requirements. These changes will come into force on 29 February 2024.

## 2. Introduction and background

- 2.1 Although mobile coverage is constantly improving, some people still find it difficult to get a consistently good signal, particularly indoors. In some circumstances, the use of a mobile repeater device can boost a good outdoor signal so it can provide a better signal indoors.

### Development of policy on indoor repeaters

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- 2.2 Before 2018, the use of static indoor repeaters was unlawful in the UK without a licence from Ofcom because there were concerns about potential interference to networks and other users. But in 2018 Ofcom decided to allow consumers to install and use a limited range of repeaters ('single operator repeaters') to boost the signals of one mobile operator at a time.
- 2.3 This development did not create notable interference issues and we subsequently published a statement in 2021 ([the 'November 2021 statement'](#)) setting out our decision to extend the range of static indoor repeaters available for people to buy and install. In particular, we allowed the use of 'provider specific repeaters', and 'multi-operator repeaters', both of which can amplify the frequencies of more than one mobile operator at a time.
- 2.4 In 2018, we had decided against allowing the licence-exempt use of repeaters that boosted a 4G-signal without also supporting 2G and 3G. We reaffirmed this decision in 2021 when we extended the scope of the licence exemption.
- 2.5 Specifically, we required that: 'single operator'/'provider specific' repeaters can only repeat a 4G signal when a 2G or 3G signal (or both) is also being repeated; and 'multi-operator' repeaters must also repeat the frequency bands used by each Mobile Network Operator's (MNO's) 2G and 3G networks (e.g. 900 MHz, 1800 MHz and 2100 MHz frequency bands).
- 2.6 This was to avoid circumstances where people with certain types of early 4G handsets (non-VoLTE<sup>1</sup> handsets) would be unable to make an emergency call when connected to the network via a repeater.
- 2.7 In both 2018 and in 2021, we recognised that these circumstances would be very rare and there were strong arguments in support of allowing 4G-only repeaters. Notably, allowing 4G-only repeaters could simplify the design, bringing down costs for mobile repeater producers and their customers. Lower costs would encourage people to install legal repeaters instead of the cheap illegal versions that were available on-line (and which do not in many cases carry 2G/3G signals).
- 2.8 Although we decided to retain the 2G/3G requirement in 2021, we said we would keep the regulations under review as the MNOs developed their plans to switch off 2G/3G signals in

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<sup>1</sup> LTE is the name of the technology used by the MNOs' 4G networks. A 'non-VoLTE' handset is a 4G handset without the capability to make voice calls over LTE (broadly those released between about 2012 and 2014). Operators use a technique called circuit switch fallback to force non-VoLTE handsets to switch to their 3G or 2G networks when they make or receive a voice call. There is also the fallback of national roaming for emergency calls, which allows a mobile handset to connect to a different network if there is no coverage from its own network.

future; and as the number of non-VoLTE handsets in active use fell due to users replacing their handsets with more modern models.

## Developments since 2021

- 2.9 The MNOs are starting to switch off their 3G services already. The latest public information we have on the timetables for switch off is published on our website ([switching off the UK's 3G mobile networks](#)). Our current understanding is that Vodafone started to switch off its 3G network in 2023; EE plans to switch off from early 2024; Three plans to switch off by the end of 2024, and O2 in 2025.
- 2.10 For the moment, three of the four networks will continue to carry 2G signals, although H3G (the operator of the Three network) does not have a 2G network. We expect EE, O2 and Vodafone to switch off their own 2G networks in due course.
- 2.11 The absence of 2G and/or 3G signals transmitted by the MNOs may make the installation and use of otherwise legal 4G mobile repeaters technically illegal without a licence, because of the requirement that they also support 2G and/or 3G signals. As a result, we have looked again at this aspect of the 2022 Regulations to consider whether it remains necessary and proportionate.

## Rationale for our proposal to change the 2022 Regulations

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- 2.12 Our [October 2023 consultation](#) set out the rationale for changing the existing regulations. We said it was clearly inappropriate for us to continue supporting regulations in circumstances where compliance is not possible in reality. We also noted our general duty to review the way we carry out our functions, to ensure regulations don't involve the maintenance of burdens which have become unnecessary.
- 2.13 Given the upcoming 2G and 3G switch off, we said we faced a choice of either changing the 2022 Regulations (so as to allow for 4G-only repeaters), or reverting to a position where the installation and use of 4G mobile repeater devices without a licence became illegal once again.
- 2.14 As noted above, our original thinking was that repeaters needed to carry either a 2G or 3G signal as a precaution to ensure that people with older 4G mobile phones could make an emergency call, in the rare circumstances where this was necessary and there was no other route to making the call.
- 2.15 Leaving aside the impossibility of mobile repeaters carrying signals that are no longer present, the October 2023 consultation noted that the rare circumstances in which emergency services could not be contacted (i.e. when the call needed to be made on a 4G non-VoLTE device) had become even rarer with the passage of time.
- 2.16 We noted that our decision in 2021 to retain the requirement for 2G/3G support had been marginal. Two years on, the October 2023 consultation recognised that non-VoLTE devices now represented a legacy technology that had been largely replaced almost a decade earlier. Although a small percentage of people may still *own* one, we considered it reasonable to assume that the number still being *used* was now very small.

- 2.17 Additionally, we noted that Wi-Fi calling from inside homes and buildings had become commonplace, with most mobiles now using the option by default for customers in their homes.
- 2.18 In summarising the position, the October 2023 consultation noted that the use of a 4G-only repeater might result in users being unable to make a voice call to the emergency services only where ALL of the following factors applied:
- There was a 999 emergency situation;
  - A call needed to be made from *inside* a premises which had a mobile repeater installed;
  - The caller only had access to an early non-VoLTE 4G phone from before about 2014;
  - The phone (or user) was unable to make the call without the signal being boosted by the repeater (e.g. by moving outside the building - or elsewhere inside - where signals might be stronger);
  - The phone was not able (or not set up) to make the call using Wi-Fi;
  - No-one else in the vicinity could make the call on a more modern phone;
  - There was no landline on which the call could be made.
- 2.19 The circumstances in which all of these factors might apply were already likely to be infrequent in 2018, but five years on, we explained our provisional view that the risk should now be very small, given the replacement of legacy phones over time.
- 2.20 Additionally, we noted that the volume of legal repeaters installed and used across the UK since our regulations were updated in 2022 was not high: we estimated from our inquiries of industry that the current number is only in the low tens of thousands out of nearly 30 million households.
- 2.21 In circumstances where the MNOs will not be carrying 3G signals for much longer anyway (and not 2G signals either in future), we said we were not persuaded that the requirement for 4G indoor repeaters to also repeat a 2G and/or 3G signal remained objectively justified and proportionate. Accordingly, we proposed to remove this requirement (i.e. we would allow 4G-only mobile repeaters to be installed and used).

## Option to carry 2G signals

- 2.22 We considered whether we should continue to require 4G mobile repeaters to carry a 2G signal or frequency instead of a 3G signal or frequency, where 3G had been switched off. However, we said we were not persuaded that this would be appropriate and proportionate.
- 2.23 In practice, manufacturers have generally opted to ensure their repeater devices carry a 3G signal and not 2G, since the 3G frequencies used by the MNOs are closer to the 4G frequencies customers were mainly seeking to boost. This keeps the cost of fulfilling the current licence exemption requirement to a minimum because it is simpler and less costly than carrying 2G.
- 2.24 Having made the 2022 Regulations giving them this option less than two years ago, we said it would be disproportionate to now require that the products manufactured, installed and in use under those regulations should now need to be replaced, reconfigured or adapted to also carry a 2G signal in order to remain licence-exempt. In any case, we are aware that 2G signals will themselves be switched off by the MNOs in due course.

## In-vehicle mobile repeaters

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- 2.25 In 2018, at the same time as we allowed for the licence-exempt installation and use of a limited range of indoor repeaters, we also allowed for the installation and use of a limited range of in-vehicle repeaters.
- 2.26 However, when we revised the terms of the licence exemption for static indoor repeaters in 2022, we did not consider any updates to the licence-exemption rules relating to in-vehicle repeaters. The terms, provisions and limitations applicable to such repeaters are currently set out in the 2022 Regulations (specifically, at regulation 18) and in an associated Interface Requirement – [IR2102](#).
- 2.27 As a result, in-vehicle mobile repeaters have not been able, under the 2022 Regulations, to amplify the recently awarded 700 MHz band, as included in the revised regulations for indoor repeaters. In-vehicle repeaters were also required by regulation 18(2) of the 2022 Regulations to only amplify signals carried over a GSM system, an LTE system, a UMTS system or a WiMAX system; they cannot amplify 5G signals.
- 2.28 However, the October 2023 consultation noted that the reasoning and evidence we set out for including the 700 MHz band for indoor mobile repeaters, and for making our licence-exemption regulations technology neutral, is equally valid for in-vehicle mobile repeaters.
- 2.29 We therefore proposed to enable the use of mobile in-vehicle repeaters in the 700 MHz band by amending the 2022 Regulations and associated Interface Requirement to apply the power limits applicable in respect of in-vehicle repeaters that amplify the 800 MHz band equally to those which amplify the 700 MHz band. We also proposed to make the regulations technology neutral, thereby allowing licence-exempt in-vehicle repeaters to amplify 5G signals.

## Our October 2023 proposals

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- 2.30 In summary, taking account of the factors outlined above, the October 2023 consultation set out proposals to amend the 2022 Regulations to:
- a) remove the requirement for 4G static indoor repeaters to also carry a 2G and/or 3G signal; and
  - b) update the terms, provisions and limitations relating to in-vehicle repeaters to enable the amplification of signals in the 700 MHz band, and to make them “technology-neutral”.
- 2.31 To give effect to these proposals we gave formal statutory notice of our proposal to make new regulations (and update associated interface requirements) to implement these policy proposals as follows (subject to consideration of consultation responses):
- a) make new regulations, the Wireless Telegraphy (Mobile Repeater) (Exemption) (Amendment) Regulations 2024 to amend the 2022 Regulations (the “Proposed Regulations”). A copy of the Proposed Regulations was set out at Annex 6 of the October 2023 consultation ; and
  - b) amend the relevant interface requirements (specifically, IR2102.1, IR 2102.2 and IR 2102.3).

## Consultation questions

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2.32 We invited comments on the proposals set out in the October 2023 consultation, including our proposal to make the Wireless Telegraphy (Mobile Repeater) (Exemption) (Amendment) Regulations 2024. The consultation opened on **24 October 2023** and closed on **4 December 2023**.

2.33 We asked the following consultation questions:

**Consultation questions:**

1. Do you agree with our proposal to remove the requirement for licence-exempt indoor mobile repeaters to carry a 2G and/or 3G signal? If not, please set out your reasons with any supporting evidence.

2. Do you agree with our proposals to amend the 2022 Regulations and associated Interface Requirements to align the use of in-vehicle mobile repeaters with the provisions for use of indoor repeaters? If not, please set out your reasons with any supporting evidence.



## 3. Consultation responses and our decisions

- 3.1 We received 11 responses to our consultation, and these are published on our website. There was unanimous support for our proposals, although some respondents also made additional comments.
- 3.2 The Ofcom **Communications Consumer Panel/ACOD** urged us to ensure the timing of any removal of the requirement for licence-exempt repeaters to also amplify 2G and 3G frequencies was in line with services on those frequencies actually being ended by the MNOs.
- 3.3 The panel also asked us to ensure that those using mobile repeaters are made aware of the change early on, so they can take any necessary action. The panel also raised more general concerns about the retirement of 2G/3G networks and the migration to all IP-telephone networks.
- 3.4 **Cellnex** said distributed antenna systems ('DAS')<sup>2</sup> deployments should not have to provide a 2G and/or 3G signal for the same rationale as outlined in the October 2023 consultation, and that Ofcom should support proposals put forward by the MNOs to change the Joint Operations Technical Standard (JOTS) to remove this requirement in respect to neutral hosts carrying emergency calls.
- 3.5 **Molex** asked us to add the 3500 MHz spectrum band to the list of frequencies allowed under the regulations governing in-vehicle repeaters.
- 3.6 **BT** said it supported our proposals but added that its own reading of the law was that 4G-only mobile repeaters would not be rendered 'illegal' as a result of 2G/3G switch-off in any case.
- 3.7 **Vodafone** and **Freshwave** supported the proposals but took the opportunity to remind us that they oppose the use of licence-exempt repeaters in principle, unless installed by MNOs.
- 3.8 There was unconditional support for our proposals from **Nextivity**, **Pan RF**, **Shared Access**, **Spry Fox Networks** and **Wesco Anixter**.

### Consideration of responses

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#### Implementation of amending regulations

- 3.9 The Communications Consumer Panel/ACOD said its comments urging us to ensure the removal of 2G/3G support coincided with the end date of those frequencies' mobile connectivity was made *"so that consumers who are able to access those frequencies to the end of that timeline are not left unsupported before 4G or 5G networks reach them"*.

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<sup>2</sup> In a distributed antenna system (DAS), a single signal source is connected to a group of antennas instead of to a single antenna. A DAS can be used by a neutral host to distribute mobile network coverage to rural areas with poor coverage or to heavily populated buildings, such as offices, high-rise apartments, shopping centres or sports stadiums. A neutral host is a company or entity that provides infrastructure for multiple service providers.

- 3.10 We note that the CCP's comments do not appear to be about the removal of the prohibition on 4G-only repeaters. Instead they focus on the importance of 2G/3G signals being available for those that do not currently have 4G/5G connectivity.
- 3.11 For the avoidance of doubt, the Proposed Regulations would not stop licence-exempt repeaters from amplifying 2G and 3G frequencies, and devices already installed under the existing Regulations may continue to support 2G and/or 3G frequencies as long as those signals are available.
- 3.12 The Communications Consumer Panel/ACOD also urged us to ensure that those using mobile repeaters are made aware of the regulation changes early on, to allow time for consumers and businesses to take any necessary action, including investigating other connectivity options.
- 3.13 As noted above, there will be no impact for customers who already have repeaters that were installed under existing Regulations for as long as 2G/3G transmissions continue. The [advice](#) displayed on our website about the use of repeaters is reviewed regularly and will be updated as circumstances change.

## Extending the scope of the licence-exemption

- 3.14 Although supportive of our proposals to remove the requirement for 4G mobile repeaters to also support 2G/3G signals, Cellnex asked that similar requirements placed on DAS should also be removed.
- 3.15 It asked Ofcom to support MNOs in seeking to rewrite conditions in the Joint Operator Technical Standards to delete a requirement to make tenants, landlords and visitors to buildings aware when in-building radio systems only support 4G or 5G (and not non-VoLTE devices).
- 3.16 Molex also supported our proposals but asked us to extend the regulations governing in-vehicle repeaters to include the 3500 MHz band for 5G use.
- 3.17 We note the points made by Cellnex and Molex. However, neither of the issues raised were the subject of this consultation. In respect to conditions applying to DAS, we consider the matter to be primarily a concern for JOTS, not Ofcom, although we recognise the similarities between the case being made by Cellnex and our own proposals.
- 3.18 We have not so far considered the 3500 MHz frequencies for mobile repeaters, either indoors or in-vehicle. We will keep the frequencies authorised for mobile repeaters under review and may include additional bands in the regulations in any future updates, including 3500 MHz, if appropriate.

## Other matters

- 3.19 The Communications Consumer Panel/ACOD has been raising general concerns for some time with Ofcom about the retirement of 2G and 3G frequencies, particularly with reference to consumers, citizens and micro-businesses in rural and remote areas.
- 3.20 In its consultation response it said: *"It is not - in our view - acceptable to remove access to services that consumers, citizens and micro-businesses rely on without providing them with a safety net"*.

- 3.21 We acknowledge the concerns raised, but note that Ofcom’s general approach to 2G/3G switch-off by MNOs is not the subject of this consultation. Our [expectations of mobile providers](#) about their switch-off plans are set out in a document published in February 2023.
- 3.22 We have also considered the specific point made by BT that, following 2G/3G switch-off, the 2022 Regulations may already allow for the licence-exempt use of 4G-only repeaters. Whilst this may be correct for provider-specific mobile repeaters, we remain of the view that it is appropriate to amend the 2022 Regulations and associated interface requirements as proposed in the October 2023 consultation.
- 3.23 This avoids any ambiguity about the terms of the licence exemption (and because, for multi-operator repeaters, we do not consider it would be appropriate and proportionate to continue to require that repeaters amplify the 900, 1800 and 2100 MHz frequencies when those frequencies are no longer used for 2G/3G mobile services).
- 3.24 Further, for the reasons set out in our consultation and above, we consider it is appropriate to allow the licence-exempt use of 4G-only repeaters before 2G/3G switch-off (provided that they meet the other terms, provisions and limitations in the Regulations) rather than maintaining the 4G-only prohibition until both 2G and 3G networks have been switched off.

## Our decisions

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- 3.25 For the reasons set out in our October 2023 consultation and summarised in section 2 of this document; and in light of unanimous support in consultation responses, we have decided to make the Regulations and changes to the accompanying Interface Requirements as proposed<sup>3</sup>, and with the same general effect.
- 3.26 We have therefore proceeded with our proposals to:
- Remove the requirement for indoor repeaters that boost a 4G signal to also carry a 2G and/or 3G signal or frequency in order to be licence-exempt. This will allow the installation and use of 4G-only repeaters, subject to compliance with the remaining technical conditions included in the licence exemption regulations.
  - Update the regulations and associated Interface Requirements to enable in-vehicle mobile repeaters to amplify signals in the 700 MHz band, and to make the Regulations technology neutral. This will enable such repeaters to amplify 5G signals in the bands included in the Interface Requirement.
- 3.27 For the reasons set out in this document, our assessment is that our decisions are consistent with our statutory duties and the terms, provisions and limitations meet the requirements of section 8(4) of the WTA.
- 3.28 In our view, the decisions set out in this document are:
- a) objectively justified in that they remove a requirement (i.e. the prohibition on 4G-only indoor repeaters) which we consider is no longer objectively justified nor proportionate, and will align the rules in respect of in-vehicle mobile repeaters with those for static

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<sup>3</sup> We note that we have made some minor modifications to the drafting of the regulations for reasons of simplification. For the avoidance of doubt, these modifications do not have any impact on general effect of the Regulations as described in the October 2023 consultation.

- indoor repeaters (thereby allowing for the use of in-vehicle repeaters which amplify some 5G signals);
- b) not unduly discriminatory against particular persons or against a particular description of persons in that they apply to all users of relevant repeaters (and, indirectly, to all manufacturers and sellers);
  - c) proportionate to what they are intended to achieve, in that they will remove requirements which we consider are no longer proportionate (specifically, the prohibition on 4G-only repeaters), and allow for the licence-exempt use of in-vehicle repeaters which amplify some 5G signals (provided that they meet the remaining terms, provisions and limitations). They do not however go any further than this; and
  - d) transparent in relation to what they are intended to achieve, in that they will be clear on the face of the revised interface requirements and the amended 2022 Regulations (which we discuss below), in addition to being described and explained in this document.

## General effect of the Regulations

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### Extent of application

- 3.29 The Regulations will apply in the United Kingdom, and in the Channel Islands and the Isle of Man, subject to formal adoption by the Island Authorities.

### Overall general effect

#### **Indoor repeaters: Removal of the prohibition on 4G-only repeaters**

- 3.30 With effect from 29 February 2024, the Regulations:
- a) remove regulations 9 and 13 of the 2022 Regulations. This has the effect of removing the requirement for indoor repeaters that amplify 4G signals to also amplify 2G and/or 3G signals; and
  - b) amend regulation 4(b) of the 2022 Regulations to remove the reference to regulation 13 (as that regulation will no longer exist).

#### **In-vehicle repeaters: Making the licence-exemption technology-neutral**

- 3.31 With effect from 29 February 2024, the Regulations also remove Regulation 18(2) of the 2022 Regulations. This has the effect of removing the current requirement that licence-exempt in-vehicle repeaters only amplify 2G, 3G or 4G signals, making the regulations applicable to in-vehicle repeaters technology neutral. This therefore allows for the licence-exempt use of 5G in-vehicle repeaters, provided that those repeaters comply with all applicable terms, provisions and limitations set out in the 2022 Regulations.

#### **In-vehicle repeaters: Definition of “IR 2102.2”**

- 3.32 The Regulations implement, with effect from 29 February 2024, Ofcom’s proposal to update the technical requirements for the in-vehicle use of certain mobile phone repeaters by amending the definition of “IR 2102.2” in regulation 3(o) of the 2022 Regulations. This updates the publication date of the current version of IR 2102.2 from 26 May 2022 to February 2024.
- 3.33 This has the effect of:

- a) changing the scope of the current licence exemption to include the 700 MHz band (703-733 MHz uplink, and 758-788 MHz downlink) in the list of licence-exempt frequency bands;
  - b) requiring that amplification of the 700 MHz band by an in-vehicle repeater is subject to the terms, provisions and limitations already applicable to in-vehicle repeaters (including the power limits already applicable in respect of the 800 MHz band); and
  - c) making the power limits relating to amplification of frequencies in the 900 and 1800 MHz bands “technology neutral”.
- 3.34 In-vehicle devices that do not meet the revised interface requirements will not fall within the licence exemption. As such, their establishment, installation and use without a licence would be a criminal offence. A copy of the revised Interface Requirements is set out at [Annex A3](#), published alongside this document.

## Entry into force of the amending Regulations

- 3.35 On 6 February 2024, Ofcom made the Regulations which, as noted above, will enter into force on 29 February 2024.
- 3.36 An unofficial copy of the Regulations is set out in Annex A2 (attached) for indicative purposes, in the form submitted for registration and publication after they have been made by Ofcom.
- 3.37 Copies of the Regulations can be obtained from <http://www.legislation.gov.uk/>, the only authorised source for published statutory instruments.

## Implications for Voluntary Testing Standard

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- 3.38 In order to help the public identify repeaters that can be used ‘legally’ without a licence – rather than ‘illegal’ devices that risk causing interference to networks or other users – we publish on our website a [list of devices](#) that we understand comply with the technical requirements of our licence exemption regime.
- 3.39 To be clear, Ofcom does not endorse or approve particular products. Instead, the list simply identifies devices that have been subjected to testing by an accredited test house to show they meet our technical requirements, using a [voluntary testing standard](#) (VTS) developed by Ofcom.
- 3.40 The current requirements of the VTS include stipulations that repeaters designed to boost a 4G mobile signal must also repeat a 2G and/or 3G signal, or support 2G/3G frequency bands. In line with the decisions outlined above, we have amended the VTS as appropriate (subject to consideration of any relevant observations by manufacturers and test houses). We have also taken the opportunity to improve and simplify the VTS in some places.
- 3.41 The draft revised VTS document is published alongside this document at [Annex A4](#). If any stakeholders wish to make further comments or suggestions about the wording of the revised VTS they are invited to do so by sending an email to [mobilephonerepeaters@ofcom.org.uk](mailto:mobilephonerepeaters@ofcom.org.uk) before 8 March 2024. We expect to publish a final revised version shortly after that date.

# A1 Legislative framework and impact assessment

A1.1 In this Annex, we set out:

- i) a summary of the relevant legislative framework; and
- ii) an impact assessment regarding the decisions set out in this statement, including an equality impact assessment.

## Legislative framework

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A1.2 As explained below, Ofcom is responsible for authorising the use of the radio spectrum. In doing so, it must act in accordance with section 8 of the Wireless Telegraphy Act 2006 (the “WTA”), which sets out its specific powers and duties in relation to the licensing (and licence exemption) of wireless telegraphy apparatus. When exercising its spectrum management functions, Ofcom also has a number of more general statutory duties under the Communications Act 2003 (the “**2003 Act**”) and WTA.

## Ofcom’s role in authorising the use of radio spectrum

A1.3 In the UK, Ofcom is responsible for authorising use of the radio spectrum. We permit the use of the radio spectrum either by granting wireless telegraphy licences under the WTA or by making regulations exempting the use of particular equipment from the requirement to hold such a licence.

A1.4 Under section 8(1) of the WTA, it is unlawful (i.e. a criminal offence) to establish or use a wireless telegraphy station or install or use wireless telegraphy apparatus except under and in accordance with a wireless telegraphy licence granted under the WTA.

A1.5 Under section 8(3) of the WTA, Ofcom may make regulations exempting from the licensing requirements under section 8(1) the establishment, installation or use of wireless telegraphy stations or wireless telegraphy apparatus of such classes or description as may be specified in the regulations, either absolutely or subject to such terms, provisions and limitations as may be specified.

A1.6 Ofcom may only approve regulations under section 8(3) within the limits set out in section 8(3B). In particular, the latter requires that section 8(3) exemptions must be:

- a) objectively justifiable in relation to the wireless telegraphy stations or wireless telegraphy apparatus to which they relate;
- b) not such as to discriminate unduly against particular persons or against a particular description of persons;
- c) proportionate to what they are intended to achieve; and
- d) transparent in relation to what they are intended to achieve.

A1.7 Further, under section 8(4) of the WTA, we must make regulations to exempt equipment from the requirement for a licence if its installation or use is not likely to:

- a) involve undue interference with wireless telegraphy;

- b) have an adverse effect on technical quality of service;
- c) lead to inefficient use of the part of the electromagnetic spectrum available for wireless telegraphy;
- d) inhibit the development of effective arrangements for the sharing of frequencies;
- e) endanger safety of life;
- f) prejudice the promotion of social, regional or territorial cohesion; or
- g) prejudice the promotion of cultural and linguistic diversity and media pluralism.

A1.8 We make exemption regulations by means of a statutory instrument. Before making any such regulations, we are required by section 122(4) of the WTA to give notice of our proposal to do so. Under section 122(5), the notice must state that we propose to make the regulations in question, set out their general effects, specify an address from which a copy of the proposed regulations 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.

## Ofcom's wider statutory duties

- A1.9 Our principal duties under the 2003 Act, when carrying out our functions and exercising our powers, are to further the interests of citizens in relation to communications matters, and to further the interests of consumers in relevant markets, where appropriate by promoting competition. These duties apply when Ofcom is carrying out its spectrum management functions.
- A1.10 In doing so, we are also required (among other things) to secure the optimal use of spectrum and the availability throughout the United Kingdom of a wide range of electronic communications services.
- A1.11 We must also have regard to, amongst other things:
- a) the desirability of promoting competition in relevant markets;
  - b) the desirability of encouraging investment and innovation in relevant markets;
  - c) the desirability of encouraging the availability and use of high-speed data transfer services throughout the United Kingdom;
  - d) the different needs and interests, so far as the use of the electro-magnetic spectrum for wireless telegraphy is concerned, of all persons who may wish to make use of it; and
  - e) the different interests of persons in the different parts of the United Kingdom, of the different ethnic communities within the United Kingdom and of persons living in rural and in urban areas.
- A1.12 The 2003 Act also sets out certain regulatory principles which we must have regard to when performing our duties. Specifically, regulatory activities should be transparent, accountable, proportionate, consistent, and targeted only at cases in which action is needed.
- A1.13 Section 6 of the 2003 Act also provides that Ofcom must keep the carrying out of its functions under review with a view to securing that regulation by it does not involve: (a) the imposition of burdens which are unnecessary; or (b) the maintenance of burdens which have become unnecessary.
- A1.14 In carrying out our spectrum functions, we also have a duty under section 3 of the WTA to have regard in particular to: (i) the extent to which the spectrum is available for use, or further use, for wireless telegraphy; (ii) the demand for use of that spectrum for wireless telegraphy; and (iii) the demand that is likely to arise in future for such use.



A1.15 We also have a duty to have regard to the desirability of promoting: (i) the efficient management and use of the spectrum for wireless telegraphy; (ii) the economic and other benefits that may arise from the use of wireless telegraphy; (iii) the development of innovative services; and (iv) competition in the provision of electronic communications services.

## Radio Equipment Regulations

A1.16 Radio equipment, including mobile phone repeaters, has to comply with requirements derived from Directive 2014/53/EU on radio equipment (the “RED”), which came into force on 13 June 2016. The UK implemented the RED into UK law through the Radio Equipment Regulations 2017 (the “RER Regulations”) and it now therefore constitutes retained EU law.

A1.17 One requirement of this regime is that radio equipment may only be placed on the market and put into service where it meets certain essential requirements. These include that it must be constructed such that it uses the relevant radio spectrum so as to avoid harmful interference.

A1.18 One way in which these requirements may be satisfied is by meeting a ‘harmonised’ or ‘designated’ standard (as applicable). Meeting such a standard gives rise to a presumption of conformity with the requirements. Some of the standards contained in the RER Regulations apply to certain types of mobile phone repeater.

A1.19 We note however that even mobile phone repeaters which meet one of the harmonised or designated standards (as applicable) may be liable to cause undue interference and/or adverse effects on technical quality of service if they are installed by consumers rather than by MNOs as part of their planned network installation.

A1.20 In the absence of licence exemption by Ofcom, they cannot therefore be used in the UK without a wireless telegraphy licence. In order for consumers to use self-installed repeaters on a licence-exempt basis, Ofcom may identify a set of technical requirements which are additional to those in the relevant harmonised or designated standards.

## Impact assessment

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A1.21 Section 7 of the 2003 Act requires that, where we propose to do anything for the purposes of, or in connection with, the carrying out of our functions, and it appears to us that the proposal is important, we are required to carry out and publish an assessment of the likely impact of implementing the proposal, or a statement setting out our reasons for thinking that it is unnecessary to carry out such an assessment.

A1.22 Our October 2023 consultation contained our assessment of the likely impact of implementing the Proposed Regulations. No stakeholders commented specifically on our impact assessment and, as explained in Section 3 of this document, stakeholders unanimously endorsed our proposal. For completeness, we set out below our impact assessment which remains unchanged from that set out in the October 2023 consultation.

## Impact on citizens and consumers

A1.23 For the reasons set out in this statement, and summarised below, our view is that our decisions will benefit UK consumers as against a counterfactual of doing nothing.



- a) Our decision to allow for 4G-only repeaters will mean that mobile repeaters may continue to be installed and used without a wireless telegraphy licence when the MNOs switch off their 2G and 3G networks. If we did not adopt this decision, we would be concerned that consumers would be unable to install and use 4G repeaters without a licence, and that they may therefore commit a criminal offence. This could adversely impact the interests of citizens and consumers and discourage the availability and use of high-speed data transfer, particularly impacting those in rural areas with poorer mobile signals.
- b) We recognise that the 2022 Regulations prohibited the installation and use of 4G-only repeaters in order to reduce the risk that the use of a mobile repeater might result in individuals being unable to make emergency calls. However, as described in the statement above, the circumstances in which the use of a repeater would prevent an individual from making an emergency call are very rare. Our view is that it is therefore very unlikely that the use of a 4G-only repeater would endanger safety of life, and that it would be disproportionate to retain the current prohibition of 4G-only repeaters on this basis.
- c) Our decision in relation to in-vehicle repeaters will also further the interests of citizens and consumers by enabling the licence-exempt use of in-vehicle repeaters where 5G signal is poor, which is likely to become increasingly important in future as MNOs start to roll out their 5G networks. This should be particularly beneficial for those in rural areas or those with otherwise poor mobile coverage.

## Impact on manufacturers

A1.24 For the reasons set out in this statement, our view is that our decisions will benefit the manufacturers of mobile repeaters as against a counterfactual of doing nothing.

- a) Our decision to allow for 4G-only repeaters will enable manufacturers to continue making and selling 4G repeaters on a licence-exempt basis in the UK, as was the intention in our original decision to permit the installation and use of these devices. This should allow for competition and innovation in this sector, reducing the regulatory burden. If we do nothing, manufacturers may - following the switch off of the MNOs' 2G and 3G networks - be unable to make and sell 4G repeaters on a licence-exempt basis in the UK (and/or their regulatory obligations would be unclear), adversely impacting competition and innovation in this sector. The 2022 Regulations would also appear (on their face) to allow for the licence-exempt installation and use of 4G repeaters, despite manufacturers and users being unable in practice to comply with the terms of the licence exemption; we are concerned that this could undermine confidence in Ofcom's regulation.
- b) Our decision in relation to in-vehicle repeaters should also benefit the manufacturers of mobile repeaters, by enabling them to start making and selling licence-exempt repeaters that amplify some important 5G frequencies (namely, the 700 MHz band). Without doing this, manufacturers would remain unable to innovate and compete in the production of licence-exempt repeaters that amplify this specific band.

## Impact on other businesses

A1.25 Our view is that there will be no negative impact from any of our decisions on any other businesses. Enabling the continued use and installation of repeaters on a licence-exempt

basis is likely to discourage consumers from using illegal devices that might cause harmful interference.

## Equality impact assessment

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- A1.26 Ofcom is also required by statute to assess the potential impact of all its functions, policies, projects and practices on the following equality groups: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation. Equality Impact Assessments (EIAs) 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.
- A1.27 The decisions set out in this document will apply equally to all users of mobile phone repeaters. We did not identify in our October 2023 consultation any differential impact of our proposals in relation to the identified equality groups and, in our assessment, they would not disproportionately affect any group of consumers. In response to that consultation, no stakeholders raised any concerns about the potential impact of the Proposed Regulations on any of the equality groups.

# A2 Statutory Instrument

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## STATUTORY INSTRUMENTS

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**2024 No.0000**

### **ELECTRONIC COMMUNICATIONS**

#### **The Wireless Telegraphy (Mobile Repeater) (Exemption) (Amendment) Regulations 2024**

*Made* - - - - - *6th February 2024*

*Coming into force* *29th February 2024*

The Office of Communications (“OFCOM”) make the following Regulations in exercise of the powers conferred by section 8(3) and section 122(7) of the Wireless Telegraphy Act 2006(a) (the “Act”) and in exercise of those sections of the Act as extended to the Bailiwick of Guernsey, to the Bailiwick of Jersey and to the Isle of Man(b).

Before making these Regulations, OFCOM gave 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 representations made to them before the time specified in that notice in accordance with section 122(4)(c) of the Act.

#### **Citation and commencement**

1. These Regulations may be cited as the Wireless Telegraphy (Mobile Repeater) (Exemption) (Amendment) Regulations 2024 and come into force on 29th February 2024.

#### **Amendment of the Wireless Telegraphy (Mobile Repeater) (Exemption) Regulations 2022**

2.—(1) The Wireless Telegraphy (Mobile Repeater) (Exemption) Regulations 2022(c) are amended as follows.

- (2) In regulation 3 (interpretation), in paragraph (o), for “on 26th May 2022” substitute “in February 2024”.
- (3) In regulation 4 (scope of exemption for indoor use), in paragraph (b) for “13” substitute “14”.
- (4) Omit regulations 9, 13 and 18(2).

*David Willis*

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(a) 2006 c. 36.

(b) Section 8(3) and section 122(7) were extended to the Bailiwick of Guernsey by article 2 of the Wireless Telegraphy (Guernsey) Order 2006 (S.I. 2006/3325); to the Bailiwick of Jersey by article 2 of the Wireless Telegraphy (Jersey) Order 2006 (S.I. 2006/3324); and to the Isle of Man by article 2 of the Wireless Telegraphy (Isle of Man) Order 2007 (S.I. 2007/278).

(c) 2022 c. 595.

6th February 2024

Group Director, Spectrum Group  
Office of Communications

### **EXPLANATORY NOTE**

*(This note is not part of the Regulations)*

These Regulations amend existing legislation which exempts the establishment, installation and use of certain wireless telegraphy stations or apparatus, known as “mobile repeaters”, which comply with certain terms, provisions and limitations, from the requirement to be licensed under section 8(1) of the Wireless Telegraphy Act 2006 (c.36). Specifically, these Regulations amend the Wireless Telegraphy (Mobile Repeater) (Exemption) Regulations 2022 (c.595) (the “2022 Regulations”).

The mobile repeaters that are exempted by the 2022 Regulations from the requirement to be licensed are those used indoors and those which are used in motor vehicles.

Regulation 2(2) amends the terms, provisions and limitations relating to mobile repeaters which are used in motor vehicles. It requires such repeaters to comply with technical specifications and conditions set out in an updated interface requirement published by the Office of Communications (“Ofcom”) in February 2024 (the “Updated Interface Requirements”). The Updated Interface Requirements are published by Ofcom and available to the public on its official website at <https://www.ofcom.org.uk/> and from its library at Riverside House, 2a Southwark Bridge Road, London SE1 9HA. The Updated Interface Requirements allow the amplification of additional frequencies (703-733 MHz or 832-862 MHz) and set out the rules (including power limits) applicable to their amplification. The omission of regulation 18(2) of the 2022 Regulations by Regulation 2(4) also makes the terms, provisions and limitations relating to such mobile repeaters technology neutral.

Regulations 2(3) and (4) amend the terms, provisions and limitations relating to mobile repeaters which are used indoors. Specifically, they remove the requirement for such repeaters to also repeat a 2G or 3G frequency if they are repeating a 4G frequency (and make associated consequential amendments).

A full regulatory impact assessment of the effect of these Regulations is available to the public from Ofcom’s website at <http://www.ofcom.org.uk> or from the Ofcom library at Riverside House, 2a Southwark Bridge Road, London SE1 9HA. Copies of this assessment have also been placed in the library of the House of Commons.