



STATUTORY INSTRUMENTS.

**S.I. No. 407 of 2020**



WIRELESS TELEGRAPHY (FURTHER TEMPORARY ELECTRONIC  
COMMUNICATIONS SERVICES LICENCES) REGULATIONS 2020

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The Commission for Communications Regulation, in exercise of the powers conferred on it by section 6(1) of the Wireless Telegraphy Act 1926 (No. 45 of 1926) as substituted by section 182 of the Broadcasting Act 2009 (No. 18 of 2009), and with the consent of the Minister for the Environment, Climate and Communications in accordance with section 37 of the Communications Regulation Act 2002 (No. 20 of 2002), (as adapted by the Communications, Climate Action and Environment (Alteration of Name of Department and Title of Minister) Order 2020 (S.I. No. 373 of 2020)) hereby makes the following Regulations:

*Citation*

1. These Regulations may be cited as the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) Regulations 2020.

*Interpretation*

2. (1) In these Regulations:

“2.1 GHz Band” means radio frequency spectrum in the range 1920 to 1980 MHz paired with radio frequency spectrum in the range 2110 to 2170 MHz;

“2.1 GHz Band Block” means a 5 MHz paired block of radio frequency spectrum in the 2.1 GHz Band;

“2.6 GHz Band” means radio frequency spectrum in the range 2500 to 2690 MHz;

“2.6 GHz Band FDD Frequency Generic Block” means a 5 MHz block of radio frequency spectrum in the range 2500 to 2570 MHz paired with a 5 MHz block of radio frequency spectrum in the range 2620 to 2690 MHz;

“2.6 GHz Band TDD Fixed Frequency Block (Lower)” means the 5 MHz unpaired block of radio frequency spectrum in the range 2570 to 2575 MHz;

“2.6 GHz Band TDD Fixed Frequency Block (Upper)” means a 5 MHz unpaired block of radio frequency spectrum in the range 2615 to 2620 MHz;

“2.6 GHz Band TDD Frequency Generic Block” means a 5 MHz unpaired block of radio frequency spectrum in the range 2575 to 2615 MHz;

“2.6 GHz Band Blocks” means the 2.6 GHz Band FDD Frequency Generic Blocks and the 2.6 GHz Band TDD Blocks;

“2.6 GHz Band TDD Blocks” means the 2.6 GHz Band TDD Fixed Frequency Block (Lower), 2.6 GHz Band TDD Fixed Frequency Block (Upper) and 2.6 GHz Band TDD Frequency Generic Blocks;

“700 MHz Duplex” means radio frequency spectrum in the range 703 to 733 MHz paired with radio frequency spectrum in the range 758 to 788 MHz;

“700 MHz Duplex Block” means a 5 MHz paired block of radio frequency spectrum in the 700 MHz Duplex;

“Act of 1926” means the Wireless Telegraphy Act 1926 (No. 45 of 1926);

“Act of 1972” means the Wireless Telegraphy Act 1972 (No. 5 of 1972);

“Act of 2002” means the Communications Regulation Act 2002 (No. 20 of 2002);

“Apparatus” in relation to Licences means apparatus for wireless telegraphy as defined in section 2 of the Act of 1926 for terrestrial systems capable of providing Electronic Communications Services;

“Authorisation Regulations” means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011);

“Commission” means the Commission for Communications Regulation established under the Act of 2002;

“Decision of 2008” means European Commission Decision (2008/477/EC) of 13 June 2008 on the harmonisation of the 2500-2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community;

“Decision of 2012” means European Commission Implementing Decision (2012/688/EU) of 5 November 2012 on the harmonisation of the frequency bands 1920-1980 MHz and 2110-2170 MHz for terrestrial systems capable of providing electronic communications services in the Union;

“Decision of 2016” means European Commission Implementing Decision (EU) 2016/687 of 28 April 2016 on the harmonisation of the 694-790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services and for flexible national use in the Union;

“Electronic Communications Network” (“ECN”) and “Electronic Communications Service” (“ECS”) have the meanings assigned to them in the Framework Regulations;

“Equivalent Isotropically Radiated Power” (“EIRP”) means the product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna;

“FDD” means Frequency Division Duplex;

“Framework Regulations” means the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011);

“Further Temporary Electronic Communications Services Licence” means a Licence in the form set out in Schedule 1 to keep and have possession of Apparatus, in accordance with and subject to the terms and conditions set out therein;

“Harmful Interference” has the meaning set out in the Framework Regulations;

“Lease” means the assignment by a Licensee (“the Lessor”) of some or all of a right of use for radio frequencies granted under a Licence for a period less than the remaining duration of the right of use to another party (“the Lessee”), after which the right of use for radio frequencies reverts to the Lessor;

“Licence” means a non-exclusive licence granted under section 5 of the Act of 1926 in accordance with and subject to the matters prescribed in these Regulations to keep and have possession of Apparatus in a specified place in the State, being a Further Temporary Electronic Communications Services Licence;

“Licence Commencement Date” means the date, as specified in the Licence, upon which the Licence comes into effect;

“Licensee” means the holder of a Licence;

“Non-exclusive”, in relation to a Licence, means that the Commission is not precluded from authorising the keeping and having possession by persons other than the Licensee, on a Non-Interference and Non-Protected Basis, of apparatus for wireless telegraphy for the radio frequency spectrum specified in the Licence;

“Non-Interference and Non-Protected Basis” means that the use of apparatus for wireless telegraphy is subject to no Harmful Interference being caused to any Radiocommunication Service, and that no claim may be made for the protection of apparatus for wireless telegraphy used on this basis against Harmful Interference originating from Radiocommunication Services;

“Radio Equipment Regulations” means the European Union (Radio Equipment) Regulations 2017 (S.I. No. 248 of 2017);

“Radiocommunication Service” means a service as defined in the Radio Regulations of the International Telecommunication Union involving the transmission, emission or reception of radio waves for specific telecommunication purposes;

“TDD” means Time Division Duplex;

“Transfer” has the meaning set out in the Transfer Regulations;

“Transfer Regulations” means the Wireless Telegraphy (Transfer of Spectrum Rights of Use) Regulations 2014 (S.I. No. 34 of 2014); and

“Undertaking” has the same meaning set out in the Framework Regulations.

(2) A word or expression that is used in these Regulations and that is also used in the Act of 1926 has, unless the context otherwise requires, the same meaning in these Regulations that it has in that Act.

(3) A word or expression that is used in these Regulations and that is also used in the Act of 2002 has, unless the context otherwise requires, the same meaning in these Regulations that it has in that Act.

(4) A word or expression that is used in these Regulations and that is also used in the Framework Regulations or in the Authorisation Regulations has,

unless the context otherwise requires, the same meaning in these Regulations that it has in those Regulations.

*Licences to which these Regulations apply*

3. (1) These Regulations apply to Further Temporary Electronic Communications Services Licences.

*Application for the Grant and Form of Licences*

4. (1) Application for the grant of a Licence shall be made by an Undertaking to the Commission in writing and in such form as may be determined by the Commission from time to time.

(2) The Commission may grant a Licence, following payment by the applicant of the relevant fee prescribed in Regulation 8, in accordance with the Authorisation Regulations and having regard to, among other things:

- (a) available information regarding the extraordinary situation arising from COVID-19 and, in particular, as it may reasonably affect Electronic Communications Networks and the provision of relevant Electronic Communications Services in the State;
- (b) available information regarding the impact of the extraordinary situation arising from COVID-19 upon the capacity of the Electronic Communications Network operated by the Undertaking, including the locations in the State where any capacity constraints are occurring or are likely to occur;
- (c) available information regarding how the rights of use of radio frequencies applied for by the Undertaking would reasonably and materially assist in alleviating the capacity constraints identified in connection with sub-paragraph (b), including the lead time for the Undertaking to effectively make use of such rights of use of radio frequencies;
- (d) available information regarding the risks to the provision of existing Electronic Communications Services, and the quality of such existing provision, by the Undertaking in making changes to its Electronic Communications Network to effectively make use of the rights of use of radio frequencies applied for;
- (e) the need to encourage the efficient use and ensure the effective management of the radio frequency spectrum; and
- (f) the Commission's obligations and objectives in relation to competition for the provision of Electronic Communications Networks and Electronic Communications Services.

(3) An Undertaking who applies for the grant of a Licence shall furnish to the Commission such information as the Commission may reasonably require for the purposes of its functions under these Regulations, the Act of 1926, the Framework Regulations and/or the Authorisation Regulations, and if the

Undertaking, without reasonable cause, fails to comply with this paragraph, the Commission may refuse to grant the Licence concerned to the Undertaking.

(4) A Licence to which these Regulations apply shall be in the form specified in Schedule 1, with such variation, if any, whether by addition, deletion or alteration as the Commission may determine from time to time or in any particular case in accordance with the Authorisation Regulations.

#### *Duration of Licences*

5. (1) The commencement date and expiry date of a Licence shall be set by the Commission and specified in the Licence.

(2) The duration of any Licence granted under these Regulations shall be up to but no longer than three calendar months.

(3) Upon application properly being made in accordance with Regulation 4, the Commission may renew a Licence granted under these Regulations for a further period of up to but no longer than three calendar months.

(4) Any Licence granted or renewed under these Regulations shall expire no later than six calendar months from the coming into operation of these Regulations.

#### *Conditions of Licences*

6. (1) Any Licensee that is granted a Licence under these Regulations and to which these Regulations apply shall:

- (a) ensure that it complies with the conditions in its Licence and with these Regulations;
- (b) ensure that any Apparatus in the 700 MHz Duplex complies with the Decision of 2016, any Apparatus in the 2.1 GHz Band complies with the Decision of 2012, and any Apparatus in the 2.6 GHz Band complies with the Decision of 2008;
- (c) ensure that all Apparatus installed, maintained, possessed or kept under the Licence is capable of operating within the radio frequency spectrum specified in the Licence;
- (d) ensure that all Apparatus worked or used under the Licence is worked or used only in the radio frequency spectrum specified in the Licence;
- (e) ensure that it makes payment of the fee set out in and in accordance with Regulation 8;
- (f) furnish such information in respect of the Licence as may be requested by the Commission from time to time;
- (g) ensure that all Apparatus, or any part thereof, is installed, maintained, worked and used so as not to cause Harmful Interference;

- (h) ensure that all Apparatus, or any part thereof, complies with the Radio Equipment Regulations;
- (i) comply with any special conditions imposed under section 8 of the Act of 1972;
- (j) upon becoming aware of any event likely to materially affect its ability to comply with these Regulations, or any conditions set out or referred to in any Licence, notify the Commission of that fact in writing no later than 5 Working Days upon becoming aware;
- (k) comply with all obligations under relevant international agreements relating to the use of Apparatus or the frequencies to which they are assigned under a Licence; and
- (l) not Transfer or Lease any rights of use for radio frequencies attaching to a Licence.

*Enforcement, Amendment, Withdrawal and Suspension*

7. (1) Enforcement by the Commission of compliance by a Licensee with conditions attached to its Licence shall be in accordance with the Authorisation Regulations.

(2) The Commission may amend a Licence from time to time in accordance with the Authorisation Regulations having regard to, among other things, the factors set out in Regulation 4(2), and by giving the Licensee 5 days' notice in writing.

(3) A Licence may be suspended or withdrawn by the Commission in accordance with the Authorisation Regulations.

*Licence Fees*

8. (1) The fee for a Licence, or renewal of a Licence, is €100 and is non-refundable.

(2) Any payment to be paid by a Licensee under this Regulation shall be made by way of banker's draft or such other means and on such other terms, if any, as the Commission may decide.

*Licensee to satisfy all legal requirements*

9. (1) Licences granted pursuant to these Regulations do not grant to the Licensee any right, interest or entitlement other than to keep, have possession of, install, maintain, work and use Apparatus at a specified location or locations in the State.



**SCHEDULE 1**  
**WIRELESS TELEGRAPHY ACT, 1926**  
**WIRELESS TELEGRAPHY (FURTHER TEMPORARY ELECTRONIC**  
**COMMUNICATIONS SERVICES LICENCES) REGULATIONS 2020**

Further Temporary Licence for terrestrial systems capable of providing  
 Electronic Communications Services

Licence under section 5 of the Act of 1926 to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services.

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 5 of the Act of 1926 hereby grants the following licence to **[LICENSEE NAME]** of **[LICENSEE ADDRESS]** (“the Licensee”).

The Licensee is hereby authorised to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services as specified in Part 2 of this Licence, subject to such apparatus being installed, maintained, worked and used in accordance with the terms, conditions and restrictions set out in the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) Regulations 2020 ( S.I. No. 407 of 2020 ) (“the Regulations”), including but not limited to, the following:

- (1) The Licensee shall ensure that it complies with all of the conditions contained within the Regulations and within Parts 1 to 4 of this Licence; and
- (2) The Licensee shall ensure that it makes payment of the fee detailed in the Regulations.

For the purpose of this Licence, the definitions set out in the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) Regulations 2020 apply.

This Licence shall come in to effect on **DD/MM/YYYY** (the “Licence Commencement Date”) and, subject to revocation, suspension or withdrawal, expires on **DD/MM/YYYY**.

Signed: \_\_\_\_\_

For and on behalf of the Commission for Communications Regulation

Date of Issue: \_\_\_\_\_

**Part 1**

Commencement and expiry dates of Spectrum Blocks

<b>Authorised Band</b>	<b>Name of Spectrum Block</b>	<b>Frequency Assigned to Spectrum Block</b>	<b>Commencement Date per Spectrum Block</b>	<b>Expiry Date per Spectrum Block</b>
<i>700 MHz Duplex, 2.1 GHz, 2.6 GHz, as appropriate</i>	<i>Block A, B, C etc.</i>	<i>From ——— MHz to ——— MHz</i>	<i>DD Month YYYY</i>	<i>DD Month YYYY</i>

**Part 2**

The Apparatus to which this Licence applies

<b>Authorised Band</b>	<b>Equipment Index Reference</b>	<b>Terrestrial System</b>	<b>Equipment Description</b>	<b>Manufacturer</b>	<b>Model</b>
<i>700 MHz Duplex, 2.1 GHz, 2.6 GHz as appropriate</i>					

### Part 3

#### Apparatus Location and Details

<b>Authorised Band</b>	<b>Site Identity</b>	<b>Eastings</b>	<b>Northings</b>	<b>Equipment Index Reference</b>	<b>Maximum EIRP</b>
<i>700 MHz Duplex, 2.1 GHz, 2.6 GHz as appropriate</i>					

### Part 4

#### Licence Conditions

##### Section 1: General

###### *Harmful Interference*

1. (1) In the event of Harmful Interference, the affected Licensees shall exchange information with a view to resolving the Harmful Interference by mutual consent. Where resolution cannot be agreed between the affected Licensees, the Commission may mediate in accordance with its statutory functions, objectives and duties.

##### Section 2: Technical Conditions

###### *Definitions*

1. (1) The following additional definitions shall apply to this Licence:

“2RN” means RTÉ Transmission Network DAC (trading as 2rn);

“Aeronautical Primary Radars” means apparatus (including “Star2000” and “TA10” models) providing primary aircraft detection used in airport surveillance networks at Dublin, Cork and Shannon airports;

“Base Station” means Apparatus connected to a backhaul network which provides a Radiocommunication Service to Terminal Stations using spectrum in the 700 MHz Duplex, 2.1 GHz Band and 2.6 GHz Band;

“Block Edge Mask” or “BEM” is an emission mask that is defined as a function of frequency in relation to a ‘block edge’, the latter being the frequency boundary

of a spectrum block for which rights of use are assigned to a Licensee. The BEM consists of several elements which are defined for certain measurement bandwidths.

“dBm” means decibels of power referenced to one milliwatt;

“Downlink” means transmissions from a Base Station to a Terminal Station;

“IAA” means the Irish Aviation Authority;

“Indoor Small Cell” means a Base Station with an EIRP of less than or equal to 24 dBm per 20 MHz carrier that is located indoors either within a residential or non-residential property;

“Inter-Licensee Synchronisation Procedure” means the synchronisation procedure set out in Section 3 of this Licence;

“MNO” means a mobile network operator with an existing network in Ireland;

“Power Flux Density limit” or pfd limit ( $\text{dBW/m}^2$ ) equals the interference threshold at radar receiver input (measured in dBW) minus the radar antenna gain (measured in dBi) plus  $10^{\log(4\pi/\lambda^2)}$ , where  $\lambda$  is the wavelength in meters;

“TDD-LTE” means the TDD variant of LTE (Long Term Evolution) technology;

“TRP” (total radiated power) is a measure of how much power the antenna actually radiates and is defined as the integral of the power transmitted in different directions over the entire radiation sphere;

“Terminal Station” means mobile user equipment and fixed customer premise equipment which communicate with a Base Station using spectrum in the 700 MHz Duplex, 2.1 GHz Band and 2.6 GHz Band;

“Uplink” means transmissions from a Terminal Station to a Base Station; and

“Virgin Media” means Virgin Media Ireland Limited.

### *Technical Conditions*

#### 2. (1) The 700 MHz Duplex

- (a) Only terrestrial systems compatible with the Decision of 2016 (as amended) can be worked and used in the 700 MHz Duplex.
- (b) The FDD mode of operation shall be used in the 700 MHz Duplex. The duplex spacing shall be 55 MHz with Terminal Station transmission (FDD uplink) located in the lower frequency band 703-733 MHz and Base Station transmission (FDD downlink) located in the upper frequency band 758-788 MHz.
- (c) The Licensee shall comply with all Memoranda of Understanding ('MoU')<sup>1</sup> agreed between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications ("Ofcom") in the UK, or its successor, in relation to spectrum in the 700 MHz Duplex.
- (d) The Licensee shall comply with the 700 MHz Coordination Procedures as agreed to by the MNOs, 2RN and Virgin Media on 3 April 2020 and published by the Commission on 7 April 2020 as Annex 4 to Commission Document 20/27.

#### Base Stations

- (e) Within a 700 MHz Duplex Block assigned to the Licensee, the in-block power from a Base Station must not exceed a maximum mean EIRP of 64 dBm/5 MHz per antenna.
- (f) Outside of the 700 MHz Duplex Block(s) assigned to the Licensee, the Licensee shall comply with the out-of-block BEM as specified in Section B "Technical conditions for base stations for terrestrial systems capable of providing electronic communications services within the 738-788 MHz frequency band" of the Annex to the Decision of 2016.

#### Terminal Stations

- (g) The maximum mean in-block power limit of 23 dBm for Terminal Stations shall apply<sup>2</sup>.

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<sup>1</sup> Memorandum of Understanding on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at [www.comreg.ie](http://www.comreg.ie)

<sup>2</sup> This power limit is specified as EIRP for Terminal Stations designed to be fixed or installed and as total radiated power (TRP) for Terminal Stations designed to be mobile or nomadic. This value is subject to a tolerance of up to + 2 dB, to take account of operation under extreme environmental conditions and production spread.

- (h) The out-of-block technical conditions set out in Table 10 to Table 12 of the Annex to the Decision of 2016 shall apply.
- (i) Where a Licensee holds more than  $2 \times 10$  MHz in the 700 MHz Duplex and if this assignment is deployed starting at 703 MHz, the licensee shall not deploy a bandwidth greater than 10 MHz for Terminal Stations in order to meet the conditions as set out in Table 12 of the Annex to the Decision of 2016 to provide protection to the frequency range 470 - 694 MHz.

### 3. (1) The 2.1 GHz Band

- (a) Only terrestrial systems compatible with the Decision of 2012 (as amended) can be worked and used in the 2.1 GHz Band.
- (b) The duplex mode of operation shall be FDD. The duplex spacing shall be 190 MHz with Terminal Station transmission (FDD uplink) located in the lower part of the band starting at 1920 MHz and finishing at 1980 MHz and Base Station transmission (FDD downlink) located in the upper part of the band starting at 2110 MHz and finishing at 2170 MHz.
- (c) The Licensee shall comply with all Memoranda of Understanding ('MoU')<sup>3</sup> agreed between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications ("Ofcom") in the UK, or its successor, in relation to the spectrum in the 2.1 GHz Band.

#### Base Stations

- (d) Within a 2.1 GHz Band Block assigned to the Licensee, the in-block radiated power from a Base Station transmitter in the downlink direction must not exceed an in-block EIRP power of 64 dBm/5 MHz per antenna.
- (e) Outside of the 2.1 GHz Band Block(s) assigned to the Licensee, the Licensee shall comply with the out-of-block BEM as specified in Table 1 and Table 2 of the Annex to the Decision of 2012.

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<sup>3</sup> Memorandum of Understanding on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at [www.comreg.ie](http://www.comreg.ie)

### Terminal Stations

- (f) The maximum mean in-block power limit over frequencies of FDD uplink of 24 dBm<sup>4</sup> per 5 MHz for Terminal Stations shall apply<sup>5</sup>.

#### 4. (1) The 2.6 GHz Band

- (a) Only terrestrial systems compatible with the Decision of 2008 (as amended) can be worked and used in the 2.6 GHz Band.
- (b) Within the 2.6 GHz Band FDD Frequency Generic Blocks, the duplex mode of operation is FDD, where the duplex spacing shall be 120 MHz with Terminal Station transmission (uplink) located in the lower part of the band starting at 2500 MHz (extending to 2570 MHz) and Base Station transmission (downlink) located in the upper part of the band starting at 2620 MHz.
- (c) Within the 2570-2620 MHz frequency range of the 2.6 GHz Band, the duplex mode of operation is TDD.
- (d) Licensees in the 2.6 GHz Band TDD Blocks are bound by the Inter-Licensee Synchronisation Procedure.
- (e) The Licensee shall comply with all Memoranda of Understanding ('MoU')<sup>6</sup> agreed between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications ("Ofcom") in the UK, or its successor, in relation to spectrum in the 2.6 GHz Band.

### Base Stations

- (f) Within a 2.6 GHz Band FDD Frequency Generic Block and a 2.6 GHz Band TDD Frequency Generic Block assigned to the Licensee, the in-block EIRP from a Base Station transmitter in the downlink direction must not exceed a maximum in-block EIRP of 61 dBm/5 MHz.
- (g) Within the 2.6 GHz Band TDD Fixed Frequency Block (lower) and 2.6 GHz Band TDD Fixed Frequency block (upper) assigned

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<sup>4</sup> For the determination of out of band emissions of terminals in CEPT Report 39 the maximum conducted transmit power of 23 dBm has been used as a reference.

<sup>5</sup> This power limit is specified as EIRP for terminal stations designed to be fixed or installed and as TRP for terminal stations designed to be mobile or nomadic. EIRP and TRP are equivalent for isotropic antennas. It is recognised that this value may be subject to a tolerance defined in the harmonised standards to take account of operation under extreme environmental conditions and production spread.

<sup>6</sup> Memorandum of Understanding on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at [www.comreg.ie](http://www.comreg.ie)

to the Licensee, the in-block EIRP from a Base Station transmitter in the downlink direction must not exceed a maximum in-block EIRP of 25 dBm/5 MHz.

- (h) Outside of 2.6 GHz Band FDD Frequency Generic Block(s) and 2.6 GHz Band TDD Frequency Generic Block(s) assigned to the Licensee, the Licensee shall comply with the unrestricted out-of-block EIRP BEM as specified in Table 1 to Table 3 of the Annex to the Decision of 2008.
- (i) Outside of the 2.6 GHz TDD Band Fixed Frequency Block (Lower) and 2.6 GHz TDD Band Fixed Frequency Block (Upper) assigned to the Licensee, the Licensee shall comply with the restricted EIRP BEM as specified in Table 4 and Table 5 of the Annex to the Decision of 2008.
- (j) Licensees of the 2.6 GHz TDD Band Fixed Frequency Block (Lower) and 2.6 GHz TDD Band Fixed Frequency Block (Upper) acknowledge and accept that usage of these blocks are subject to a greater risk of interference from adjacent blocks.
- (k) For all 2.6 GHz Band Blocks and in cases where antennas are placed indoors. Alternative parameters in line with Table 5 of the Annex to the Decision of 2008 shall be implemented, provided that at geographical borders with other Member States, Table 1 of the Annex to the Decision of 2008 applies, and that Table 4 of the Annex to the Decision of 2008 remains valid nationwide.
- (l) Unless otherwise agreed between the Licensee and the IAA in writing, the Licensee shall ensure protection of all Aeronautical Primary Radars<sup>7</sup>, by:
  - (i) deploying Base Stations outside of exclusion zones defined in Figures 4.3, 4.5, 4.6 and 5.3 of the Plum Report (Commission Document 19/124c)<sup>8</sup>; and
  - (ii) complying with the relevant Power Flux Density (pfd) limits with respect to:
    - I. the STAR2000 radars with locations as set out in Chapter 3 of Commission Document 19/59c<sup>9</sup> as follows:
      - A. an out-of-band Base Station pfd limit of -145 dBW/m<sup>2</sup>/MHz per operator to address impact of spurious MFCN emissions at the radar antenna; and
      - B. an in-band Base Station pfd limit of -83 dBW/m<sup>2</sup> per operator, to address the impact of

<sup>7</sup> Aeronautical radar locations (Dublin, Shannon and Cork) and technical parameters are detailed in Plum Report, Commission Documents 19/59c and 19/124c, available at [www.comreg.ie](http://www.comreg.ie)

<sup>8</sup> Shape files (.SHP) representing these figures are available at [www.comreg.ie](http://www.comreg.ie)

<sup>9</sup> Commission Document 19/59c, available at [www.comreg.ie](http://www.comreg.ie)



blocking and intermodulation effects at radar receivers.

- II. the TA10 radar with a location as set out in Chapter 5 of Commission Document 19/124c<sup>10</sup> as follows:
  - A. an out-of-band Base Station pfd limit of -156 dBW/m<sup>2</sup>/MHz per operator to address the impact of spurious MFCN emissions at the radar antenna; and
  - B. an in-band Base Station pfd limit of -93 dBW/m<sup>2</sup> per operator, to address the impact of blocking and intermodulation effects at radar receivers.
- (m) For deployments in compliance with condition (l) above, the Licensee shall nominate a point of contact for coordination with the IAA and provide written notification to the IAA of any 2.6 GHz Band deployments at least 48 hours in advance of their deployment, and provide such information on any 2.6 GHz Band deployments as may reasonably be required by the IAA, including information on antenna height, antenna orientation, and predicted coverage plots.

#### Terminal Stations

- (n) The maximum mean in-block power (including Automatic Transmitter Power Control range) of 31 dBm/5 MHz TRP, and 35 dBm/5 MHz EIRP, shall apply to Terminal Stations<sup>11</sup>.

### Section 3: Inter-Licensee Synchronisation Procedure

*This Section 3 applies only to Licensees who have been assigned 2.6 GHz Band TDD Blocks.*

#### Definitions

1. (1) The following additional definitions shall apply in this section:

“Default Frame Structure” means the frame structure as detailed in Figure 1 below;

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<sup>10</sup> Commission Document 19/124c, available at [www.comreg.ie](http://www.comreg.ie)

<sup>11</sup> EIRP should be used for fixed or installed terminal stations and the TRP should be used for the mobile or nomadic terminal stations. TRP is a measure of how much power the antenna actually radiates. The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.

“Other Frame Structure” means a frame structure other than the Default Frame Structure;

“Unrestricted BEM” means: Operators utilising the Default Frame Structure on their network (and having a common reference phase clock with adjacent channel operators<sup>12</sup>) are subject to the Unrestricted BEM specified in the Annex of the Decision of 2008, “B. Unrestricted BEM for Base Stations”.

“Restricted BEM” means: Operators utilising the Other Frame Structure (or failing to synchronise with adjacent channel networks for any other reason) are subject to the Restricted BEM specified in the Annex of the Decision of 2008, “C. Restricted BEM for Base Stations” and “B. Unrestricted BEM for Base Stations”<sup>13</sup>.

### *Introduction*

2. (1) Licensees with 2.6 GHz Band TDD Blocks shall be bound by the inter-Licensee synchronisation procedure set out in this Section 3.

(2) Licensees shall co-operate in such a way that one network deployment within spectrum in the 2.6 GHz Band does not cause Harmful Interference to that of another Licensee.

(3) This procedure sets out the circumstances in which Licensees may use the Unrestricted BEM and the Restricted BEM, so as to minimise the risk of Harmful Interference to other Licensees.

### *Conditions for using the Unrestricted BEM*

3. (1) Default Frame Structure - The technical conditions for Unrestricted BEM shall apply where a Licensee’s Base Station complies with the Default Frame Structure outlined below:

- (a) Transmissions from a Licensee’s Base Station(s) shall have a frame structure as shown in Figure 1. Indicated timeslots (or subframes) must not be allocated to anything other than Downlink (D) and Uplink (U) transmissions. ‘S’ denotes a special subframe. TD-LTE frame configuration 2 (Downlink: Uplink, 3:1) with special subframe configuration 6 or equivalent frame structures whose transmit and receive periods are aligned with this configuration are permitted;
- (b) Timeslots shall have a duration of 1 millisecond; and

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<sup>12</sup> Each operator needs to ensure the start of frame is aligned with adjacent channel operators above and below its assignment

<sup>13</sup> It is important to note that, in order to meet the restricted mask, operators would likely have to adopt guard bands within their assignment.

- (c) Licensees shall ensure that frames start at a common reference time (+/- 1.5  $\mu$ s) so that all Licensees' frames are aligned and transmissions synchronised.

DL/UL ratio	Timeslot or 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 1: Default Frame Structure**

*Conditions for using the Restrictive BEM*

4. (1) Other Frame Structure — the technical conditions for Restricted BEM shall apply where a Licensee's Base Station complies with the Other Frame Structure as outlined below:

- (a) All frame configurations that are not compatible with TD-LTE frame configuration 2 (3:1) with special sub-frame configuration 6 or equivalent frame structure whose transmit and receive periods are aligned with this configuration are permitted;
- (b) Licensees shall co-operate to minimise Harmful Interference caused by sub-frame overlaps if different technologies are used; and
- (c) Licensees using the Restricted BEM shall not cause Harmful Interference to those Licensees' networks that use the Default Frame Structure (or equivalent). Achieving this may include applying internal guard bands and/or reduced in block power levels in blocks adjacent to those Licensees' networks that use the Default Frame Structure (or equivalent).

*Indoor Small Cells*

5. (1) Indoor Small Cells with an EIRP not exceeding 24dBm for indoor domestic and other indoor locations are exempted from synchronisation restrictions. The Unrestricted BEM set out in this Section applies to such Indoor Small Cells on the condition that they do not cause Harmful Interference to any other Licensees.

## Section 4: Coverage Requirements

### 1. Coverage at specific locations in the State

Coverage	Location	Obligation
Outdoors	Specific locations in relation to the extraordinary situation arising from COVID-19 as may be determined from time to time by the Government and communicated to the Commission by the Department of the Environment, Climate and Communications	Best efforts using all rights of use available to the Licensee

**Table 1: Outdoor coverage obligations at specific locations in relation to the extraordinary situation arising from COVID-19**



GIVEN under the Official Seal of the Commission for Communications Regulation

2 October 2020.

GARRETT BLANEY

Chairman of the Commission, For and on Behalf of the Commission for Communications Regulation.

The Minister for the Environment, Climate and Communications, in accordance with section 37 of the Communications Regulation Act, 2002, (as adapted by the Communications, Climate Action and Environment (Alteration of Name of Department and Title of Minister) Order 2020 (S.I. No. 373 of 2020)) consents to the making of the foregoing Regulations:

Signed 2 day of October 2020

EAMON RYAN

Minister for the Environment, Climate and Communications.

EXPLANATORY NOTE

*(This note is not part of the Instrument and does not purport to be a legal interpretation.)*

These Regulations prescribe matters in relation to further temporary licences for apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services in the 700 MHz Duplex, the 2.1 GHz, the 2.6 GHz Bands to address the temporary impact upon Electronic Communications Networks and Electronic Communications Services from the extraordinary situation arising from COVID-19.

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