

WIRELESS TELEGRAPHY ACT, 1926
WIRELESS TELEGRAPHY (3.6 GHz BAND LICENCES)
REGULATIONS 2016

3.6 GHz Band Spectrum Lease Licence for terrestrial systems capable of providing Electronic Communications Services

Licence under section 5 of the Wireless Telegraphy Act 1926 (No. 45 of 1926) as amended, 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 Wireless Telegraphy Act 1926 (No. 45 of 1926) as amended, hereby grants the following licence to **Imagine Network Services Limited of Unit 5/6 Sandymount Business Centre, Blackthorn Road, Sandymount Industrial Estate, Dublin 18** (“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 to this Licence, subject to such apparatus being installed, maintained, worked and used in accordance with the terms and conditions and restrictions set out in the Wireless Telegraphy (3.6 GHz Band Licences) Regulations 2016 (S.I. No. 532 of 2016) “**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, under which this Licence is issued, and within Parts 1 to 4 of this Licence.

This Licence shall come into effect on 28/05/2026 (the “**Licence Commencement Date**”) and, subject to revocation, suspension, or withdrawal, expires on 04/11/2026.

Signed:

For and on behalf of the Commission for Communications Regulation

Date of Issue: 28/05/2026

Part 1

Commencement and Expiry dates per Frequency Range per Region

| Lessor 3.6 GHz Band Liberalised Use Licence Number | Region ¹ | Frequency Range (MHz) | Commencement Date | Expiry Date |
|--|--|-----------------------|--------------------------|------------------|
| 3L1002 | Borders Midlands & West; South West; East, South; and East | 3560 – 3575 | 28 May 2026 ² | 04 November 2026 |

Part 2

The Apparatus to which this Licence applies

| Equipment Index Reference | Terrestrial System | Equipment Description | Manufacturer | Model |
|---------------------------|--------------------|-----------------------|--------------|------------|
| 1 | LTE | Passive Antenna | [Redacted] | [Redacted] |
| 2 | LTE | Passive Antenna | [Redacted] | [Redacted] |
| 3 | LTE | Passive Antenna | [Redacted] | [Redacted] |
| 4 | LTE | Passive Antenna | [Redacted] | [Redacted] |
| 5 | LTE | Active Antenna Unit | [Redacted] | [Redacted] |
| 6 | LTE | Radio Unit | [Redacted] | [Redacted] |
| 7 | LTE | Radio Unit | [Redacted] | [Redacted] |
| 8 | LTE | Radio Unit | [Redacted] | [Redacted] |
| 9 | LTE | Passive Antenna | [Redacted] | [Redacted] |
| 10 | LTE | Passive Antenna | [Redacted] | [Redacted] |
| 11 | NR5G | Passive Antenna | [Redacted] | [Redacted] |

Part 3

Apparatus Location and Details

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|------------|--------|---------------|---------|----------|---------------------------|----------------|
| South West | Clare | IMA_CE001 | 133796 | 179515 | 6,9 | 58 |
| South West | Clare | IMA_CE011 | 127171 | 182791 | 6,9 | 58 |
| South West | Clare | IMA_CE023 | 109925 | 182337 | 6,2 | 58 |
| South West | Clare | IMA_CE032 | 142440 | 170625 | 6,2 | 58 |
| South West | Cork | IMA_CK024 | 172675 | 59890 | 6,1 | 58 |
| South West | Cork | IMA_CK046 | 108094 | 35125 | 6,1 | 58 |
| South West | Cork | IMA_CK062 | 153801 | 122520 | 6,9 | 58 |

¹ “Region” means a regional area of the State specified in Schedule 10 of the Regulations.

² 3.6 GHz Band Blocks 18, 19 and 20 for the Borders Midlands & West, South West, East, South East Regions were transferred to the Vodafone Ireland Ltd on 28 May 2026 in accordance with ComReg’s Determination in Document 26/31, published 14 May 2026.

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|---------------|----------------------|----------------|-----------------|----------------------------------|-----------------------|
| South West | Cork | IMA_CK078 | 145318 | 44306 | 6,1 | 58 |
| South West | Cork | IMA_CK083 | 121506 | 81762 | 6,2 | 58 |
| South West | Cork | IMA_CK094 | 61609 | 45019 | 6,9 | 58 |
| South West | Cork | IMA_CK105 | 138672 | 80270 | 6,2 | 58 |
| South West | Cork | IMA_CK120 | 100240 | 46870 | 7,9 | 58 |
| South West | Cork | IMA_CK135 | 135454 | 40476 | 6,2 | 58 |
| South West | Cork | IMA_CK143 | 106867 | 47495 | 6,2 | 58 |
| South West | Cork | IMA_CK195 | 164025 | 63366 | 6,2 | 58 |
| Border, Midlands and West | Cavan | IMA_CN013 | 225848 | 320053 | 6,9 | 58 |
| Border, Midlands and West | Cavan | IMA_CN033 | 264530 | 313011 | 6,1 | 58 |
| South East | Carlow | IMA_CW011 | 289047 | 161459 | 6,2 | 58 |
| Border, Midlands and West | Donegal | IMA_DL007 | 238452 | 416998 | 6,2 | 58 |
| Border, Midlands and West | Donegal | IMA_DL039 | 222441 | 426882 | 6,2 | 58 |
| Border, Midlands and West | Donegal | IMA_DL053 | 182788 | 358290 | 6,9 | 58 |
| East | Dublin | IMA_DN184 | 313101 | 248328 | 6,1 | 58 |
| Border, Midlands and West | Galway | IMA_GY014 | 150699 | 241356 | 6,1 | 58 |
| Border, Midlands and West | Galway | IMA_GY029 | 190309 | 219172 | 6,9 | 58 |
| Border, Midlands and West | Galway | IMA_GY044 | 149361 | 266818 | 6,1 | 58 |
| Border, Midlands and West | Galway | IMA_GY058 | 163618 | 235658 | 6,2 | 58 |
| Border, Midlands and West | Galway | IMA_GY072 | 154967 | 228450 | 6,2 | 58 |
| Border, Midlands and West | Galway | IMA_GY094 | 122161 | 223689 | 6,4 | 58 |
| East | Kildare | IMA_KE008 | 297567 | 222716 | 6,3 | 58 |
| East | Kildare | IMA_KE021 | 274641 | 227035 | 6,2 | 58 |
| East | Kildare | IMA_KE041 | 268580 | 234422 | 6,2 | 58 |
| South East | Kilkenny | IMA_KK007 | 254276 | 174104 | 6,1 | 58 |
| South East | Kilkenny | IMA_KK025 | 250054 | 124903 | 6,9 | 58 |
| South West | Kerry | IMA_KY004 | 83058 | 108044 | 6,2 | 58 |
| South West | Kerry | IMA_KY024 | 112665 | 105389 | 6,9 | 58 |
| Border, Midlands and West | Longford | IMA_LD008 | 220101 | 254897 | 6,9 | 58 |
| Border, Midlands and West | Longford | IMA_LD016 | 223995 | 293004 | 6,2 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|------------|---------------|---------|----------|---------------------------|----------------|
| Border, Midlands and West | Louth | IMA_LH004 | 298235 | 283392 | 8,1 | 58 |
| South West | Limerick | IMA_LK013 | 172555 | 125215 | 6,1 | 58 |
| South West | Limerick | IMA_LK021 | 113586 | 141474 | 6,9 | 58 |
| South West | Limerick | IMA_LK033 | 143300 | 152751 | 6,2 | 58 |
| Border, Midlands and West | Leitrim | IMA_LM005 | 194373 | 328234 | 6,9 | 58 |
| Border, Midlands and West | Laois | IMA_LS020 | 226834 | 178489 | 6,9 | 58 |
| East | Meath | IMA_MH010 | 277450 | 266364 | 6,1 | 58 |
| East | Meath | IMA_MH030 | 270794 | 245730 | 6,2 | 58 |
| East | Meath | IMA_MH049 | 289529 | 297838 | 6,1 | 58 |
| Border, Midlands and West | Monaghan | IMA_MN025 | 265463 | 327494 | 6,1 | 58 |
| Border, Midlands and West | Mayo | IMA_MO003 | 123826 | 318432 | 6,2 | 58 |
| Border, Midlands and West | Mayo | IMA_MO034 | 109867 | 298209 | 6,9 | 58 |
| Border, Midlands and West | Mayo | IMA_MO049 | 149432 | 279474 | 6,2 | 58 |
| Border, Midlands and West | Mayo | IMA_MO079 | 125486 | 251532 | 6,1 | 58 |
| Border, Midlands and West | Offaly | IMA_OY012 | 202422 | 216065 | 6,1 | 58 |
| Border, Midlands and West | Offaly | IMA_OY029 | 249647 | 238064 | 6,1 | 58 |
| Border, Midlands and West | Roscomm on | IMA_RN009 | 176599 | 284895 | 6,1 | 58 |
| Border, Midlands and West | Roscomm on | IMA_RN017 | 191682 | 230007 | 6,9 | 58 |
| Border, Midlands and West | Sligo | IMA_SO001 | 168427 | 336146 | 6,2 | 58 |
| Border, Midlands and West | Sligo | IMA_SO012 | 146461 | 328798 | 6,9 | 58 |
| South West | Tipperary | IMA_TY002 | 186959 | 178935 | 6,2 | 58 |
| South East | Tipperary | IMA_TY023 | 225535 | 150930 | 7,1 | 58 |
| South West | Tipperary | IMA_TY045 | 189621 | 205896 | 6,1 | 58 |
| South East | Waterford | IMA_WD011 | 245739 | 113170 | 6,2 | 58 |
| South East | Waterford | IMA_WD032 | 197934 | 100803 | 6,9 | 58 |
| Border, Midlands and West | Westmeat h | IMA_WH011 | 228150 | 246777 | 6,1 | 58 |
| Border, Midlands and West | Westmeat h | IMA_WH022 | 241654 | 254442 | 6,2 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------------|---------------|----------------------|----------------|-----------------|----------------------------------|-----------------------|
| East | Wicklow | IMA_WW034 | 303319 | 177257 | 6,9 | 58 |
| East | Wicklow | IMA_WW040 | 290041 | 203074 | 6,1 | 58 |
| South East | Wexford | IMA_WX017 | 291253 | 130235 | 6,2 | 58 |
| South East | Wexford | IMA_WX039 | 299144 | 139688 | 7,9 | 58 |
| South East | Wexford | IMA_WX051 | 282501 | 115276 | 6,2 | 58 |
| South East | Waterford | IMA_WD048 | 267501 | 104199 | 6,1 | 58 |
| Border, Midlands and West | Laois | IMA_LS999 | 249204 | 189750 | 5 | 58 |
| South West | Clare | IMA_CE010 | 121393 | 171289 | 6,1 | 58 |
| South West | Clare | IMA_CE022 | 104074 | 168113 | 6,1 | 58 |
| South West | Clare | IMA_CE031 | 105903 | 156905 | 6,1 | 58 |
| South West | Cork | IMA_CK023 | 133907 | 72125 | 6,2 | 58 |
| South West | Cork | IMA_CK044 | 190472 | 68934 | 6,2 | 58 |
| South West | Cork | IMA_CK058 | 210257 | 77421 | 6,9 | 58 |
| South West | Cork | IMA_CK073 | 114065 | 52905 | 6,2 | 58 |
| South West | Cork | IMA_CK081 | 130884 | 108951 | 6,2 | 58 |
| South West | Cork | IMA_CK093 | 203468 | 71063 | 6,9 | 58 |
| South West | Cork | IMA_CK103 | 173832 | 97677 | 6,9 | 58 |
| South West | Cork | IMA_CK111 | 139018 | 103689 | 6,1 | 58 |
| South West | Cork | IMA_CK128 | 149159 | 56144 | 6,2 | 58 |
| South West | Cork | IMA_CK142 | 179680 | 66935 | 6,2 | 58 |
| South West | Cork | IMA_CK193 | 148646 | 65532 | 6,1 | 58 |
| Border, Midlands and West | Cavan | IMA_CN009 | 250309 | 283788 | 6,9 | 58 |
| Border, Midlands and West | Cavan | IMA_CN029 | 233178 | 295549 | 6,2 | 58 |
| South East | Carlow | IMA_CW006 | 272113 | 161310 | 6,2 | 58 |
| Border, Midlands and West | Donegal | IMA_DL003 | 216997 | 411524 | 6,9 | 58 |
| Border, Midlands and West | Donegal | IMA_DL026 | 245342 | 445358 | 6,1 | 58 |
| Border, Midlands and West | Donegal | IMA_DL052 | 188671 | 361063 | 6,9 | 58 |
| East | Dublin | IMA_DN168 | 322814 | 255501 | 6,2 | 58 |
| Border, Midlands and West | Galway | IMA_GY012 | 172630 | 225270 | 6,1 | 58 |
| Border, Midlands and West | Galway | IMA_GY027 | 88396 | 209341 | 6,9 | 58 |
| Border, Midlands and West | Galway | IMA_GY042 | 163014 | 216987 | 6,9 | 58 |
| Border, Midlands and West | Galway | IMA_GY050 | 168631 | 205419 | 6,1 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|---------------|----------------------|----------------|-----------------|----------------------------------|-----------------------|
| Border, Midlands and West | Galway | IMA_GY069 | 152243 | 254425 | 6,9 | 58 |
| Border, Midlands and West | Galway | IMA_GY084 | 101553 | 228579 | 6,9 | 58 |
| East | Kildare | IMA_KE006 | 267763 | 193666 | 6,1 | 58 |
| East | Kildare | IMA_KE014 | 294621 | 235844 | 6,1 | 58 |
| East | Kildare | IMA_KE038 | 275662 | 201499 | 6,1 | 58 |
| South East | Kilkenny | IMA_KK001 | 257929 | 163187 | 6,3 | 58 |
| South East | Kilkenny | IMA_KK024 | 233238 | 167744 | 6,9 | 58 |
| South East | Kilkenny | IMA_KK042 | 241012 | 153317 | 6,1 | 58 |
| South West | Kerry | IMA_KY018 | 91098 | 142526 | 6,1 | 58 |
| Border, Midlands and West | Longford | IMA_LD001 | 218796 | 284207 | 6,3 | 58 |
| Border, Midlands and West | Longford | IMA_LD014 | 213952 | 273728 | 6,2 | 58 |
| Border, Midlands and West | Louth | IMA_LH003 | 304456 | 304163 | 6,1 | 58 |
| South West | Limerick | IMA_LK012 | 111775 | 125239 | 7,9 | 58 |
| South West | Limerick | IMA_LK020 | 170097 | 149982 | 6,1 | 58 |
| South West | Limerick | IMA_LK027 | 165130 | 162837 | 6,1 | 58 |
| South West | Limerick | IMA_LK071 | 114597 | 122151 | 6,2 | 58 |
| Border, Midlands and West | Laois | IMA_LS010 | 236622 | 206770 | 6,3 | 58 |
| East | Meath | IMA_MH001 | 286292 | 268918 | 6,9 | 58 |
| East | Meath | IMA_MH023 | 279875 | 255817 | 6,2 | 58 |
| East | Meath | IMA_MH047 | 264917 | 278331 | 6,2 | 58 |
| Border, Midlands and West | Monaghan | IMA_MN024 | 273103 | 319326 | 6,1 | 58 |
| Border, Midlands and West | Mayo | IMA_MO001 | 139673 | 299070 | 6,2 | 58 |
| Border, Midlands and West | Mayo | IMA_MO014 | 66996 | 302733 | 6,2 | 58 |
| Border, Midlands and West | Mayo | IMA_MO048 | 135310 | 274971 | 6,9 | 58 |
| Border, Midlands and West | Mayo | IMA_MO062 | 124604 | 307711 | 6,2 | 58 |
| Border, Midlands and West | Offaly | IMA_OY008 | 212538 | 229368 | 6,1 | 58 |
| Border, Midlands and West | Offaly | IMA_OY028 | 231171 | 217370 | 6,1 | 58 |
| Border, Midlands and West | Roscomm on | IMA_RN008 | 195593 | 275413 | 6,1 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|-----------|---------------|---------|----------|---------------------------|----------------|
| Border, Midlands and West | Roscommon | IMA_RN016 | 198886 | 236142 | 6,2 | 58 |
| Border, Midlands and West | Roscommon | IMA_RN027 | 175026 | 275699 | 6,1 | 58 |
| Border, Midlands and West | Sligo | IMA_SO011 | 152413 | 311139 | 6,2 | 58 |
| South West | Tipperary | IMA_TY001 | 173631 | 177400 | 6,1 | 58 |
| South East | Tipperary | IMA_TY022 | 197285 | 121919 | 7,9 | 58 |
| South East | Tipperary | IMA_TY032 | 240111 | 128900 | 6,9 | 58 |
| South East | Waterford | IMA_WD006 | 223696 | 95165 | 6,9 | 58 |
| South East | Waterford | IMA_WD031 | 225784 | 87802 | 6,9 | 58 |
| Border, Midlands and West | Westmeath | IMA_WH001 | 204341 | 241525 | 6,1 | 58 |
| Border, Midlands and West | Westmeath | IMA_WH021 | 216332 | 239538 | 7,9 | 58 |
| East | Wicklow | IMA_WW027 | 322680 | 192989 | 6,9 | 58 |
| East | Wicklow | IMA_WW038 | 303164 | 218368 | 6,2 | 58 |
| South East | Wexford | IMA_WX012 | 298101 | 119249 | 6,1 | 58 |
| South East | Wexford | IMA_WX036 | 318161 | 162468 | 6,1 | 58 |
| South East | Wexford | IMA_WX046 | 309101 | 149819 | 7,9 | 58 |
| Border, Midlands and West | Mayo | IMA_MO085 | 98960 | 282166 | 6,1 | 58 |
| Border, Midlands and West | Cavan | IMA_CN042 | 272254 | 296211 | 6,1 | 58 |
| Border, Midlands and West | Donegal | IMA_DL042 | 187714 | 379113 | 6,11 | 58 |
| South West | Clare | IMA_CE006 | 141822 | 163922 | 6,9 | 58 |
| South West | Clare | IMA_CE012 | 136978 | 179128 | 6,9 | 58 |
| South West | Clare | IMA_CE027 | 111117 | 162746 | 6,9 | 58 |
| South West | Clare | IMA_CE034 | 148936 | 167641 | 6,9 | 58 |
| South West | Cork | IMA_CK025 | 155570 | 66290 | 6,1 | 58 |
| South West | Cork | IMA_CK048 | 178024 | 78118 | 6,1 | 58 |
| South West | Cork | IMA_CK063 | 182971 | 71617 | 6,2 | 58 |
| South West | Cork | IMA_CK079 | 155037 | 46449 | 6,2 | 58 |
| South West | Cork | IMA_CK087 | 143841 | 50829 | 6,9 | 58 |
| South West | Cork | IMA_CK097 | 190479 | 103193 | 6,9 | 58 |
| South West | Cork | IMA_CK106 | 165726 | 95754 | 6,2 | 58 |
| South West | Cork | IMA_CK122 | 131885 | 92572 | 6,9 | 58 |
| South West | Cork | IMA_CK137 | 125450 | 114645 | 6,9 | 58 |
| South West | Cork | IMA_CK146 | 180436 | 106119 | 6,9 | 58 |
| South West | Cork | IMA_CK204 | 176762 | 84189 | 6,2 | 58 |
| Border, Midlands and West | Cavan | IMA_CN023 | 232882 | 309104 | 6,9 | 58 |
| South East | Carlow | IMA_CW003 | 271689 | 177305 | 6,9 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|---------------|----------------------|----------------|-----------------|----------------------------------|-----------------------|
| South East | Carlow | IMA_CW013 | 276240 | 168738 | 6,1 | 58 |
| Border, Midlands and West | Donegal | IMA_DL017 | 221590 | 442393 | 6,2 | 58 |
| Border, Midlands and West | Donegal | IMA_DL041 | 195998 | 373508 | 6,2 | 58 |
| Border, Midlands and West | Donegal | IMA_DL063 | 174785 | 387133 | 6,2 | 58 |
| Border, Midlands and West | Galway | IMA_GY006 | 138529 | 234979 | 6,9 | 58 |
| Border, Midlands and West | Galway | IMA_GY016 | 125926 | 227343 | 8,1 | 58 |
| Border, Midlands and West | Galway | IMA_GY037 | 155108 | 211294 | 6,3 | 58 |
| Border, Midlands and West | Galway | IMA_GY046 | 113648 | 237190 | 6,9 | 58 |
| Border, Midlands and West | Galway | IMA_GY059 | 71521 | 252430 | 6,2 | 58 |
| Border, Midlands and West | Galway | IMA_GY077 | 142100 | 223138 | 6,2 | 58 |
| East | Kildare | IMA_KE003 | 282731 | 229478 | 6,2 | 58 |
| East | Kildare | IMA_KE010 | 288959 | 224075 | 6,9 | 58 |
| East | Kildare | IMA_KE022 | 283461 | 240150 | 6,3 | 58 |
| East | Kildare | IMA_KE046 | 267724 | 201631 | 6,9 | 58 |
| South East | Kilkenny | IMA_KK020 | 262776 | 132410 | 6,2 | 58 |
| South East | Kilkenny | IMA_KK026 | 266703 | 115887 | 6,9 | 58 |
| South West | Kerry | IMA_KY008 | 97160 | 135132 | 6,2 | 58 |
| South West | Kerry | IMA_KY051 | 91737 | 124620 | 6,2 | 58 |
| Border, Midlands and West | Longford | IMA_LD010 | 202896 | 269659 | 6,2 | 58 |
| Border, Midlands and West | Longford | IMA_LD019 | 232181 | 275219 | 6,2 | 58 |
| Border, Midlands and West | Louth | IMA_LH018 | 314090 | 283099 | 6,2 | 58 |
| South West | Limerick | IMA_LK014 | 143905 | 135980 | 6,3 | 58 |
| South West | Limerick | IMA_LK023 | 151288 | 148778 | 6,2 | 58 |
| South West | Limerick | IMA_LK034 | 163787 | 147446 | 6,2 | 58 |
| Border, Midlands and West | Leitrim | IMA_LM012 | 210101 | 304365 | 6,2 | 58 |
| Border, Midlands and West | Laois | IMA_LS025 | 257353 | 210712 | 6,2 | 58 |
| East | Meath | IMA_MH013 | 311439 | 262231 | 6,1 | 58 |
| East | Meath | IMA_MH038 | 273895 | 275981 | 6,2 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|-----------|---------------|---------|----------|---------------------------|----------------|
| Border, Midlands and West | Monaghan | IMA_MN004 | 251221 | 320403 | 6,1 | 58 |
| Border, Midlands and West | Monaghan | IMA_MN030 | 270792 | 336483 | 6,1 | 58 |
| Border, Midlands and West | Mayo | IMA_MO004 | 114744 | 290074 | 6,1 | 58 |
| Border, Midlands and West | Mayo | IMA_MO040 | 134950 | 318700 | 6,2 | 58 |
| Border, Midlands and West | Mayo | IMA_MO058 | 152471 | 298933 | 6,2 | 58 |
| Border, Midlands and West | Offaly | IMA_OY006 | 207377 | 204349 | 6,9 | 58 |
| Border, Midlands and West | Offaly | IMA_OY016 | 241957 | 225493 | 6,9 | 58 |
| Border, Midlands and West | Roscommon | IMA_RN001 | 161624 | 276824 | 7,9 | 58 |
| Border, Midlands and West | Roscommon | IMA_RN012 | 160587 | 298214 | 6,9 | 58 |
| Border, Midlands and West | Roscommon | IMA_RN018 | 193790 | 291890 | 6,9 | 58 |
| Border, Midlands and West | Sligo | IMA_SO004 | 182133 | 322187 | 6,1 | 58 |
| Border, Midlands and West | Sligo | IMA_SO013 | 175938 | 347288 | 6,3 | 58 |
| South East | Tipperary | IMA_TY005 | 193832 | 152227 | 6,2 | 58 |
| South East | Tipperary | IMA_TY028 | 214549 | 142686 | 7,9 | 58 |
| South West | Tipperary | IMA_TY046 | 201193 | 166036 | 6,1 | 58 |
| South East | Waterford | IMA_WD013 | 227307 | 100787 | 6,9 | 58 |
| South East | Waterford | IMA_WD038 | 252418 | 109305 | 6,2 | 58 |
| Border, Midlands and West | Westmeath | IMA_WH014 | 264762 | 260498 | 6,2 | 58 |
| East | Wicklow | IMA_WW005 | 323346 | 217997 | 6,9 | 58 |
| East | Wicklow | IMA_WW035 | 324992 | 179614 | 6,9 | 58 |
| East | Wicklow | IMA_WW046 | 327111 | 212563 | 6,2 | 58 |
| South East | Wexford | IMA_WX029 | 302248 | 157176 | 7,9 | 58 |
| South East | Wexford | IMA_WX043 | 310057 | 130306 | 6,9 | 58 |
| South East | Wexford | IMA_WX052 | 306918 | 138426 | 6,9 | 58 |
| South West | Cork | IMA_CK205 | 146847 | 90356 | 6,3 | 58 |
| Border, Midlands and West | Longford | IMA_LD017 | 218067 | 267711 | 6,3 | 58 |
| South West | Clare | IMA_CE009 | 107898 | 194478 | 6,9 | 58 |
| South West | Clare | IMA_CE013 | 151767 | 191039 | 6,1 | 58 |
| South West | Clare | IMA_CE028 | 86167 | 157468 | 6,9 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|----------|---------------|---------|----------|---------------------------|----------------|
| South West | Cork | IMA_CK012 | 156120 | 98514 | 6,9 | 58 |
| South West | Cork | IMA_CK043 | 161614 | 117256 | 6,2 | 58 |
| South West | Cork | IMA_CK049 | 164599 | 81505 | 6,1 | 58 |
| South West | Cork | IMA_CK067 | 122928 | 53259 | 6,2 | 58 |
| South West | Cork | IMA_CK080 | 133874 | 50205 | 6,2 | 58 |
| South West | Cork | IMA_CK092 | 183129 | 80343 | 6,9 | 58 |
| South West | Cork | IMA_CK098 | 199349 | 83961 | 6,9 | 58 |
| South West | Cork | IMA_CK107 | 93200 | 35060 | 6,9 | 58 |
| South West | Cork | IMA_CK126 | 172958 | 62792 | 6,9 | 58 |
| South West | Cork | IMA_CK141 | 141399 | 121108 | 6,9 | 58 |
| South West | Cork | IMA_CK192 | 166859 | 49464 | 6,1 | 58 |
| Border, Midlands and West | Cavan | IMA_CN001 | 260435 | 289513 | 6,1 | 58 |
| Border, Midlands and West | Cavan | IMA_CN024 | 242186 | 304429 | 6,9 | 58 |
| South East | Carlow | IMA_CW005 | 286560 | 173230 | 6,9 | 58 |
| Border, Midlands and West | Donegal | IMA_DL002 | 223475 | 404901 | 6,3 | 58 |
| Border, Midlands and West | Donegal | IMA_DL020 | 216116 | 393764 | 6,9 | 58 |
| Border, Midlands and West | Donegal | IMA_DL044 | 167538 | 415209 | 6,2 | 58 |
| East | Dublin | IMA_DN134 | 315169 | 259811 | 6,2 | 58 |
| Border, Midlands and West | Galway | IMA_GY011 | 143370 | 252076 | 7,9 | 58 |
| Border, Midlands and West | Galway | IMA_GY017 | 143141 | 229126 | 6,1 | 58 |
| Border, Midlands and West | Galway | IMA_GY041 | 174641 | 257962 | 6,10 | 58 |
| Border, Midlands and West | Galway | IMA_GY049 | 180822 | 238996 | 6,2 | 58 |
| Border, Midlands and West | Galway | IMA_GY062 | 163444 | 249692 | 6,9 | 58 |
| Border, Midlands and West | Galway | IMA_GY082 | 136626 | 258605 | 6,2 | 58 |
| East | Kildare | IMA_KE005 | 280355 | 214880 | 6,2 | 58 |
| East | Kildare | IMA_KE013 | 271320 | 216966 | 6,3 | 58 |
| East | Kildare | IMA_KE035 | 282407 | 206640 | 6,1 | 58 |
| East | Kildare | IMA_KE052 | 280983 | 197150 | 6,2 | 58 |
| South East | Kilkenny | IMA_KK021 | 246097 | 132107 | 6,2 | 58 |
| South East | Kilkenny | IMA_KK034 | 266272 | 145605 | 6,9 | 58 |
| South West | Kerry | IMA_KY011 | 70868 | 93688 | 6,2 | 58 |
| South West | Kerry | IMA_KY054 | 99543 | 92469 | 6,2 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|-----------|---------------|---------|----------|---------------------------|----------------|
| Border, Midlands and West | Longford | IMA_LD011 | 206611 | 285031 | 6,2 | 58 |
| Border, Midlands and West | Louth | IMA_LH002 | 307390 | 273703 | 6,1 | 58 |
| South West | Limerick | IMA_LK011 | 133627 | 146193 | 6,9 | 58 |
| South West | Limerick | IMA_LK016 | 123013 | 129581 | 6,9 | 58 |
| South West | Limerick | IMA_LK026 | 126694 | 141994 | 6,9 | 58 |
| South West | Limerick | IMA_LK036 | 163005 | 154352 | 6,2 | 58 |
| Border, Midlands and West | Laois | IMA_LS003 | 247499 | 176221 | 6,9 | 58 |
| Border, Midlands and West | Laois | IMA_LS028 | 254418 | 200693 | 6,1 | 58 |
| East | Meath | IMA_MH021 | 295908 | 261157 | 6,9 | 58 |
| East | Meath | IMA_MH040 | 291165 | 248768 | 6,1 | 58 |
| Border, Midlands and West | Monaghan | IMA_MN018 | 283933 | 303875 | 6,2 | 58 |
| Border, Midlands and West | Monaghan | IMA_MN039 | 257672 | 324647 | 6,1 | 58 |
| Border, Midlands and West | Mayo | IMA_MO007 | 118923 | 264513 | 6,10 | 58 |
| Border, Midlands and West | Mayo | IMA_MO044 | 106405 | 329238 | 6,2 | 58 |
| Border, Midlands and West | Mayo | IMA_MO060 | 130144 | 290118 | 6,2 | 58 |
| Border, Midlands and West | Offaly | IMA_OY007 | 227507 | 222577 | 6,1 | 58 |
| Border, Midlands and West | Offaly | IMA_OY020 | 252371 | 213146 | 6,2 | 58 |
| Border, Midlands and West | Roscommon | IMA_RN004 | 192968 | 298699 | 6,2 | 58 |
| Border, Midlands and West | Roscommon | IMA_RN015 | 190357 | 313498 | 6,2 | 58 |
| Border, Midlands and West | Roscommon | IMA_RN019 | 189063 | 258329 | 6,9 | 58 |
| Border, Midlands and West | Sligo | IMA_SO007 | 158235 | 326635 | 6,9 | 58 |
| Border, Midlands and West | Sligo | IMA_SO017 | 166261 | 346799 | 6,9 | 58 |
| South West | Tipperary | IMA_TY017 | 206117 | 175995 | 6,1 | 58 |
| South East | Tipperary | IMA_TY029 | 223352 | 137017 | 6,9 | 58 |
| South West | Tipperary | IMA_TY049 | 183806 | 194810 | 6,2 | 58 |
| South East | Waterford | IMA_WD020 | 244947 | 105679 | 6,9 | 58 |
| South East | Waterford | IMA_WD046 | 205750 | 95100 | 6,1 | 58 |

| Region | County | Site Identity | Easting | Northing | Equipment Index Reference | Max EIRP (dBm) |
|---------------------------|-----------|---------------|---------|----------|---------------------------|----------------|
| Border, Midlands and West | Westmeath | IMA_WH018 | 255708 | 252726 | 6,1 | 58 |
| East | Wicklow | IMA_WW011 | 331177 | 192507 | 6,9 | 58 |
| East | Wicklow | IMA_WW036 | 314073 | 190936 | 6,9 | 58 |
| South East | Wexford | IMA_WX007 | 315185 | 170777 | 7,9 | 58 |
| South East | Wexford | IMA_WX035 | 273066 | 124202 | 6,1 | 58 |
| South East | Wexford | IMA_WX044 | 278625 | 140073 | 6,9 | 58 |
| South East | Wexford | IMA_WX055 | 292912 | 113094 | 6,1 | 58 |
| Border, Midlands and West | Laois | IMA_LS017 | 220534 | 192931 | 6,9 | 58 |
| Border, Midlands and West | Cavan | IMA_CN038 | 246312 | 300653 | 6,3 | 58 |

Part 4

Licence Conditions

Section 1: General

1. Definitions

The following additional definitions shall apply to this Licence:

“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;

“Licensed Spectrum Blocks” means the Spectrum Blocks set out in Part 1 of the Licence;

“Terrestrial Systems” means terrestrial systems capable of providing Electronic Communications Services that are in compliance with the technical implementing measures adopted pursuant to EC Decision No 2008/411/EC (as amended) and in conformity with the standards referred to in Parts 4; and

“Licensed Regions” means the Regions specified in Part 1 of the Licence.

2. Provision of Maps and Data

For the purposes of complying with rollout obligations (see Section 4) and quality of service obligations (see Section 5) compliance assessments, the Licensee shall, on request, provide to the Commission the following:

- (1) Maps showing rollout as required under Section 4;
- (2) An up-to-date list of the locations of Base Stations including the Rollout Base Stations covered by the Licence; and
- (3) An adequate number of Terminal Stations, Subscriber Identity Modules (SIM) cards or equivalents for testing as applicable.

Section 2: Technical Conditions

1. Definitions

The following additional definitions shall apply to this Licence:

“Active antenna systems” (“AAS”) means a base station and an 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 excludes 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;

“Base Station” means Apparatus connected to a backhaul network, which provides a Radiocommunication Service to Terminal Stations using the 3.6 GHz Band;

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

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

“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;

“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 Co-ordination Agreement” means bi-lateral or multi-lateral agreements between Licensees on field strength co-ordination threshold levels at the boundaries of Regions;

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

“Permissive Block Edge Mask” means the Base Station technical conditions defined in Table 1 below;

“Restrictive Block Edge Mask” means the Base Station technical conditions defined in Table 2 below;

“Semi-synchronised operation” means operation of two or more different TDD networks, where part of the frame is consistent with synchronised operation, while the remaining portion of the frame is consistent with unsynchronised operation. This requires the adoption of a frame structure for all TDD networks involved, including slots where the UL/DL direction is not specified, as well as synchronising the beginning of the frame across all networks.

“Synchronised operation” means operation of two or more different time division duplex (TDD) networks, where simultaneous uplink (UL) and downlink (DL) transmissions do not occur, that is at any given moment in time either all networks transmit in downlink or all networks transmit in uplink. This requires the alignment of all DL and UL transmissions for all TDD networks involved as well as synchronising the beginning of the frame across all networks;

“TDD” means time-division duplex;

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

“Terminal Station” means mobile user equipment and fixed customer premise

equipment which communicate with a Base Station using the 3.6 GHz Band;

“Total radiated power” (“TRP”) is a measure of how much power a composite antenna radiates. It equals the total conducted power input into the antenna array system less any losses in the antenna array system. TRP means the integral of the power transmitted in different directions over the entire radiation sphere as shown in the formula:

$$TRP \stackrel{\text{def}}{=} \frac{1}{4\pi} \int_0^{2\pi} \int_0^{\pi} P(\theta, \varphi) \sin(\theta) d\theta d\varphi$$

where $P(\theta, \varphi)$ is the power radiated by an antenna array system in direction (θ, φ) given by the formula: $P(\theta, \varphi) = P_{Tx}g(\theta, \varphi)$

where P_{Tx} denotes the conducted power (measured in Watts), which is input to the array system, and $g(\theta, \varphi)$ denotes the array systems directional gain along the (θ, φ) direction.

“Unsynchronised operation” means operation of two or more different TDD networks, where at any given moment in time at least one network transmits in DL while at least one network transmits in UL. This might happen if the TDD networks either do not align all DL and UL transmissions or do not synchronise at the beginning of the frame;

“Uplink” means transmissions from a Terminal Station to a Base Station.

2. Technical Conditions

(1) Only Terrestrial Systems compatible with Decision 2008/411/EC (as amended) can be worked and used in the 3.6 GHz Band.

(2) In the 3400 – 3800 MHz frequency range of the 3.6 GHz Band, the duplex mode of operation is TDD.

Base Stations

(3) Where the Inter-Licensee Synchronisation Procedure specified in Section 3 determines that the Permissive Block Edge Mask applies for synchronised blocks, the technical conditions defined in Table 1 below shall apply to Base Stations.

(4) In Tables 1 and 3, the power level P_{Max} is the maximum carrier power in dBm for the base station in question. P_{Max} is defined and measured as the equivalent isotropically radiated power (e.i.r.p.) per antenna for base stations with non-active antenna systems (non-AAS). For AAS, base stations P_{Max} is defined as the maximum mean carrier power in dBm for the base station and measured as TRP per carrier in a given cell.

(5) In Tables 1 and 3, the power limits are determined relative to a fixed upper limit by means of the formula $\text{Min}(P_{Max} - A, B)$, which sets the lower (or stricter) of two values: (1) $(P_{Max} - A)$ expressing the maximum carrier power P_{Max} minus a relative offset A, and (2) the fixed upper limit B.

Table 1: Permissive Block Edge Mask

| BEM Element | Frequency Range | Non-AAS EIRP Power Limit | AAS TRP Power Limit |
|-------------|-----------------|--------------------------|---------------------|
|-------------|-----------------|--------------------------|---------------------|

| | | | |
|---------------------|---|---|--|
| In-block | Block assigned to the Licensee | 68 dBm/5 MHz per antenna | 47 dBm/5 MHz per cell |
| Transitional Region | -5 to 0 MHz offset from lower block edge or 0 to 5 MHz offset from upper block edge | Min(PMax -40, 21) dBm/5 MHz per antenna (*) | Min(PMax -40, 16) dBm/5 MHz per cell (**)(***) |
| Transitional Region | -10 to -5 MHz offset from lower block edge or 5 to 10 MHz offset from upper block edge | Min(PMax -43, 15) dBm/5 MHz per antenna | Min(PMax -43, 12) dBm/5 MHz per cell (**)(***) |
| Baseline | Below – 10 MHz offset from lower block edge Above 10 MHz offset from upper block edge Within 3400—3800 MHz (except for in-block and transitional regions) | Min(PMax -43, 13) dBm/5 MHz per antenna (*) | Min(PMax -43, 1) dBm/5 MHz per cell (**)(***) |

(*) PMax is the maximum mean carrier power in dBm for the base station measured as EIRP per carrier per antenna

(**) PMax' is the maximum mean carrier power in dBm for the base station measured as TRP per carrier in a given cell

(***) In a multi-sector base station, the radiated power limit applies to each one of the individual sectors.

(6) Where the Inter-Licensee Synchronisation Procedure specified in Section 3 determines that the Restrictive Block Edge Mask applies for semi-synchronised blocks, the technical conditions defined in Table 2 below shall apply. In order to meet the Restrictive Block Edge Mask, a Licensee may be required to adopt guard bands within its Licensed Spectrum Block(s).

Table 2: Restrictive Block Edge Mask

| BEM Element | Frequency Range | Non-AAS EIRP Power Limit | AAS TRP Power Limit |
|-------------|---|----------------------------|----------------------------|
| In-block | Block assigned to the Licensee | 68 dBm/5 MHz per antenna | 47 dBm/5 MHz per cell |
| Baseline | 3400–3800 MHz (except for in-block frequencies) | -34 dBm/5 MHz per cell (*) | -43 dBm/5 MHz per cell (*) |

(*) In a multi-sector base station, the radiated power limit applies to each one of the individual sectors

(7) The additional baseline power limits in Table 3 below apply at the 3800 MHz band edge for coexistence with fixed satellite services (FSS) and fixed services (FS) above 3800 MHz.

Table 3: Additional baseline power limits above 3 800 MHz for base stations for coexistence with fixed satellite services (FSS) and fixed services (FS)

| BEM Element | Frequency Range | Non-AAS EIRP Power Limit | AAS TRP Power Limit |
|---------------------|-----------------|--|---|
| Additional baseline | 3 800-3 805 MHz | Min(PMax – 40, 21) dBm/(5 MHz) per antenna (*) | Min(PMax' – 40, 16) dBm/(5 MHz) per cell(**)(***) |
| | 3 805-3 810 MHz | Min(PMax – 43, 15) dBm/(5 MHz) per antenna (*) | Min(PMax' – 43, 12) dBm/(5 MHz) per cell(**)(***) |
| | 3 810-3 840 MHz | Min(PMax – 43, 13) dBm/(5 MHz) per antenna (*) | Min(PMax' – 43, 1) dBm/(5 MHz) per cell(**)(***) |
| | Above 3 840 MHz | – 2 dBm/(5 MHz) per antenna (*) | – 14 dBm/(5 MHz) per cell(***) |

(*) PMax is the maximum mean carrier power in dBm for the base station measured as e.i.r.p. per carrier per antenna

(**) PMax' is the maximum mean carrier power in dBm for the base station measured as TRP per carrier in a given cell

(***) In a multi-sector base station, the radiated power limit refers to the level corresponding to each one of the individual sectors

(8) The Licensee shall comply with all memoranda of understanding agreed from time to time between the Commission and the national regulatory authority responsible for communications matters in the UK, Ofcom, or its successor, in relation to the 3.6 GHz Band.³

(9) A co-ordination threshold limit of 32 dB μ V/m/5MHz for 90 per cent of the time and 90 per cent of the locations at a height of 10 metres at the borders of each Region shall apply.⁴

(10) The co-ordination threshold limit specified at paragraph 8 may be relaxed when an Inter-Licensee Co-ordination Agreement is in place between all potentially affected Licensees. Inter-Licensee Co-ordination Agreements may be guided by ECC Recommendation (15)01⁵ or subsequent relevant guidance documents.

(11) 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, ComReg may mediate in accordance with its statutory functions, objectives and duties.

Terminal Stations

(12) With the exception of fixed outdoor Terminal Stations with a directional antenna the maximum in-block power for a Terminal Station shall not exceed 28 dBm/5 MHz TRP.

(13) The maximum in-block power limit for fixed outdoor Terminal Stations with a directional antenna shall not exceed 37 dBm/5 MHz EIRP.

(14) Fixed outdoor Terminal Stations with a directional antenna shall:

- (a) be installed, controlled by and remain the responsibility of the Licensee; and
- (b) not cause Harmful Interference to any other users, be that Base Stations, other Terminal Stations, or other apparatus for wireless telegraphy in other radio frequency spectrum bands.

Section 3: Inter-Licensee Synchronisation Procedure

1. Definitions

The following additional definitions shall apply to this Licence:

“Default Frame Structure” means the frame structure as detailed in 3(1) below; and

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

³ See Annex 3 of ComReg Document 06/17R7 for a list of memoranda of understanding in place at the date of making of the Regulations.

⁴ The field prediction method used shall be in accordance with Recommendation ITU-R P.452-16, unless otherwise specified by the Commission.

⁵ See ECC Recommendation (15)01 — Cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1452-1492 MHz, 3400-3600 MHz and 3600-3800 MHz — <http://www.erodocdb.dk/Docs/doc98/official/pdf/REC1501.PDF>

2. Introduction

- (1) Licensees shall co-operate in such a way that one network deployment does not cause Harmful Interference to that of another Licensee within the 3.6 GHz Band.
- (2) Licensees shall be bound by the Inter-Licensee Synchronisation procedure.
- (3) This procedure sets out the circumstances in which Licensees may use the Permissive Block Edge Mask and the Restrictive Block Edge Mask, so as to minimise the risk of Harmful Interference to other Licensees.

3. Conditions for Permissive Block Edge Masks

- (1) Default Frame Structure in case of synchronised operation — The technical conditions for Permissive Block Edge Mask set out in Section 2 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
 - (c) Licensees shall ensure that frames start at a common reference time($\pm 1.5 \mu\text{s}$) so that all Licensees’ frames are aligned and transmissions synchronised.

(2)

Figure 1: Default Frame Structure

| 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 |

4. Conditions for using the Restrictive Block Edge Masks

- (1) Other Frame Structure— the technical conditions for Restrictive Block Edge Mask set out in Section 2 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 the Default Frame Structure 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 Restrictive Block Edge Mask 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).

5. Indoor Small Cells

(1) Indoor Small Cells are exempted from synchronisation. The Permissive Block Edge Mask set out in Section 2 applies to such Indoor Small Cells on the condition that they do not cause Harmful Interference to any other Licensees.